Appendix I
Air Impact Study for Guam and CNMI Military Relocation EIS

1. Air Impact Study and Calculations
2. Mobile Source Air Toxic Analysis

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For
Guam and CNMI Military Relocation EIS

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For
Guam and CNMI Military Relocation EIS

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Executive Summary

This air impact study discusses the air impacts in relation to the Guam and Commonwealth of the Northern Marianas (CNMI) Military Relocation Environmental Impact Statement (EIS) (U.S. Navy and Joint Guam Program Office). Only portions of the air impact study that are relevant to the Final EIS are included in this appendix.

The overall proposed action includes components involving the U.S. Marine Corps (Marine Corps or Marines), the Navy, and the U.S. Army [Army]. The three main components of the proposed action are briefly stated as follows:

1. *Marine Corps*. (a) Develop and construct facilities and infrastructure within Guam and the CNMI to meet the Marine Corps' living, training, and readiness requirements. (b) Relocate approximately 8,600 Marines and their 9,000 dependents from Okinawa to the Mariana Islands (Marianas) while concurrently increasing the civilian support workforce by approximately 1,700. (c) Conduct and support training and operations for the relocated Marines.
2. *Navy*. Construct a new deep-draft wharf with shoreside infrastructure improvements creating the capability to support a transient nuclear aircraft carrier and carrier strike group (CSG) in Apra Harbor, Guam.
3. *Army*. (a) Develop facilities and infrastructure on Guam to allow an Army AMDTF to protect Guam from potential ballistic missile attacks. (b) Relocate approximately 600 military personnel, 900 dependents, and 100 civilian support workforce to Guam.

The locations of Guam and CNMI are shown in Figure ES-1.

Potential air impacts on Guam would occur from construction and operational activities associated with the project alternatives that are being evaluated for the proposed development on and around Guam.

Air quality can be affected by air pollutants produced by mobile sources, such as vehicular traffic, aircraft, or non-road equipment used for construction activities and by fixed or immobile facilities, referred to as "stationary sources." Stationary sources can include combustion and industrial stacks and exhaust vents.

Figure ES-1: Locations of Guam and CNMI

MAJOR STATIONARY SOURCES

Power

- *Basic Alternative 1 (Preferred Alternative).* Basic Alternative 1 would recondition up to 5 existing combustion turbines and upgrade T&D systems and would not require new construction or enlargement of the existing footprint of the facilities. These reconditioned units would have the necessary reliability to serve as reserve capacity to ensure reliable operation of the IWPS. They would serve as peaking and reserve units. This work would be undertaken by the GPA on its existing permitted facilities, and potentially utilize a private entity (PE) to obtain funds, recondition the CTs, install the T&D upgrades, and operate the CTs for a fee to enable repayment of the financing. Reconditioning would be made to existing permitted facilities at the Marbo, Yigo, Dededo, and Macheche combustion turbines. These combustion turbines are not currently being used up to permit limits. T&D system upgrades would be on existing above ground and underground transmission lines. This alternative supports Main Cantonment Alternatives 1 and 2 and Main Cantonment Alternatives 3 and 8 would require additional upgrades to the T&D system.

MINOR STATIONARY SOURCES

Wastewater

- Basic Alternative 1 (Alternative 1a supports Main Cantonment Alternatives 1 and 2; and Alternative 1b supports Main Cantonment Alternatives 3 and 8) combines upgrade to the existing primary treatment facilities and expansion to secondary treatment at the Northern District Wastewater Treatment Plant (NDWWTP).The difference between Alternatives 1a and 1b is a requirement for a new sewer line from Barrigada housing to NDWWTP for Alternative 1b.
- *Long-Term Alternative 1.* Construct a new DoD only stand alone secondary treatment facility on DoD land at Finegayan including a new outfall in support of all main cantonment alternatives.

Solid Waste

- The Preferred Alternative for solid waste would be the continued use of Navy Landfill at Apra Harbor until Layon Landfill is opened, which is scheduled for July 2011. In July 2011, DoD would use GovGuam's Layon Landfill for disposal of municipal solid waste as set forth in the letter of intent (see Appendix C).

MOBILE SOURCES

Mobile sources are covered by four alternatives for the location of the cantonment area functions and family housing/community support functions.

- Alternative 1. Represents one contiguous location for cantonment area functions and family housing/community support functions. It would include portions of Naval Computer and Telecommunications Station (NCTS) Finegayan and South Finegayan, as well as acquisition or long-term leasing of non-DoD lands at the former Federal Aviation Administration (FAA) parcel and the Harmon Annex parcel. A portion of the development would be constructed in the undeveloped overlay refuge.
- Alternative 2. Represents one contiguous land area for the cantonment and family housing /community support functions. It would include portions of NCTS Finegayan, portions of South Finegayan, and the acquisition or long-term leasing of portions of privately-held lands in the former FAA parcel. A portion of the development would be constructed in the undeveloped overlay refuge.

- Alternative 3. Plans for the main cantonment to include portions of NCTS Finegayan, and housing would be located on three geographically separated DoD parcels, including South Finegayan, Air Force Barrigada, and Navy Barrigada. No privately held lands would be acquired. Housing would be located non-contiguous to the main cantonment functions and a portion of the main cantonment would be constructed in the undeveloped overlay refuge.
- Alternative 8. would include portions of NCTS Finegayan, a portion of South Finegayan, the former FAA parcel, and a portion of the housing would be located on the geographically separated Air Force Barrigada parcel. A portion of privately held lands would be acquired by purchase or long-term lease. A portion of the main cantonment would be constructed in the undeveloped overlay refuge and a portion of the required housing would be non-contiguous to the Main Cantonment Area.

CONSTRUCTION ACTIVITY EMISSIONS

- Construction-related emissions were estimated for each alternative based on information specific to construction activities associated with different components of the proposed action. Because no specific information regarding sizes or types of construction is provided in the case of certain components, a series of construction prototypes was developed to represent these components.
- Estimates of the operational emissions from construction equipment were developed based on the estimated hours of equipment use and the emission factors for each type of equipment. An actual running time factor (i.e., actual usage factor) was employed to determine actual equipment usage hours for the purpose of estimating equipment emissions.
- Emission factors related to construction-associated delivery trucks, truck and commuting vehicles, and asphalt curing-related VOC emissions were also calculated.

REGIONAL EMISSIONS UNDER PREFERRED ALTERNATIVES

The greatest impact to air quality resources would occur if all of the proposed actions were implemented concurrently. Impacts on air quality were evaluated for each individual region of influence (ROI). As construction activities would occur prior to operational activities, it was assumed that all of the proposed construction actions are occurring at the same time and that all operational activity will commence upon completion of construction. The potential scenario, a consideration of the preferred alternative from each individual component of the proposed action, is addressed to provide a summary assessment of potential impacts associated with the overall proposed action.

Preferred Alternatives

Each component of the overall proposed action has separate alternatives. A preferred alternative has not been identified for the overall proposed action at this time, but each individual component of the proposed action is assumed to have a preferred alternative in order to facilitate this summary analysis. The alternatives to be addressed in the analysis of preferred alternatives are as follows; however, it should be noted that this study does not contain details of all components of the overall proposed action (see EIS for further details):

- Volume 2, Marine Corps Guam: Alternative 2
- Volume 3, Marine Corps Tinian: Alternative 1
- Volume 4, Aircraft Carrier Berthing: Alternative 1
- Volume 5, Army AMDTF: Alternative 1
- Volume 6, Related Actions:

- Power: Basic Alternative 1 (Preferred Alternative)
- Potable Water: Basic Alternative 1 (Preferred Alternative)
- Wastewater: Basic Alternative 1a (Preferred Alternative) and 1b
- Solid Waste: Basic Alternative 1 (Preferred Alternative)
- Roadway Projects: Alternative 2 (Preferred Alternative)

CAA GENERAL CONFORMITY APPLICABILITY ANALYSIS

The 1990 amendments to the CAA (CAAA) require federal agencies to ensure that their actions conform to the State Implementation Plan (SIP) in a nonattainment area. As the proposed action would potentially involve activities in Piti and Tanguisson sulfur dioxide (SO_2) nonattainment areas, the General Conformity Rule (GCR) applies to the proposed activities within the nonattainment areas. Therefore, a subsequent general conformity applicability analysis is required.

The *de minimis* level established by USEPA applicable to the two non-attainment areas on Guam, Piti and Tanguisson, is 100 TPY of SO_2. If the total direct and indirect emissions of a pollutant are above the *de minimis* level, a formal general conformity determination is required for that pollutant. The net increase in SO_2 emissions with potential to emit from the proposed action within the two SO_2 nonattainment areas was predicted for operational and construction activities with potential to occur. Annual SO_2 emissions from the Guam Military Relocation under the preferred alternatives would not exceed the *de minimis* criterion of 100 TPY of SO_2 in both the Tanguisson and the Piti nonattainment areas and a formal conformity determination is not required.

SUMMARY

The air quality analyses conducted in this study and summarized in Table ES-1 indicate that emissions from the categories and alternatives discussed above would range from less than significant impacts to significant mitigable to less than significant impacts. Alternatives with significant mitigable to less than significant impacts would require that mitigation measures be implemented if those alternatives were selected.

Table ES-1: Summary of Air Quality Impacts

Category/Alternative	Significance Level	Mitigation/Comments
Major Stationary Sources		
Power Basic Alternative 1 (Preferred Alternative)	LSI	
Minor Stationary Sources		
Wastewater Basic Alternative 1a and 1b (Preferred Alternative)	LSI	
Wastewater Long-Term Alternative 1	SI-M	Refers only to odor impacts.
Solid Waste Basic Alternative 1 (Preferred Alternative)	LSI	
Mobile Sources		
Alternative 1	LSI	
Alternative 2 (Preferred Alternative)	LSI	
Alternative 3	LSI	
Alternative 8	LSI	
Construction Activity		
All Alternatives	LSI	Construction impacts for all alternatives for each component resulted in LSI.
Regional Emissions under Preferred Alternatives		
Preferred Alternative	LSI	
CAA General Conformity Applicability under Preferred Alternatives		
Preferred Alternative	LSI	Annual SO_2 emissions would not exceed the de minimis criterion of 100 TPY.

LSI Less than significant impact
NA Not available
NI No impact
SI Significant impact
SI-M Significant impact mitigable to less than significant.

Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

AFB Air Force Base
AFCEE Air Force Center for Engineering and the Environment
AMDTF Air and Missile Defense Task Force
APCR Air Pollution Control Regulations
APCSR Air Pollution Control Standards and Regulations

BACT Best Available Control Technology
BMP Best Management Practices
BOMBEX Bombing Exercise
Btu British Thermal Units
BUMED Bureau of Medicine and Surgery

C3 Command, Control and Communications
CAA Clean Air Act
CAAA Clean Air Act Amendment
CAL Confined Area Landing
CEQ Council on Environmental Quality
CFR Code of Federal Regulations
CM cubic meter
CCN Command Code Numbers
CNMI Commonwealth of the Northern Mariana Islands
CO carbon monoxide
CO_2 carbon dioxide
CO_2Eq carbon dioxide equivalents
CY cubic yard

DEIS Draft Environmental Impact Statement
DEG diesel electric generator
DEM digital elevation model
DEQ Department of Environmental Quality
DM Defensive Maneuvering
DoD Department of Defense

EG Emission Guidelines
EGU electrical generating unit
EIS Environmental Impact Statement
EO Executive Order
EXT External Loads

FAA Federal Aviation Administration
FAM Familiarization and Instrument Flight
FCLP Field Carrier Landing Practice
FEIS Final Environmental Impact Statement
FHWA Federal Highway Administration
FSL Forecast Systems Laboratory
ft foot/feet
ft^2 square foot/feet

ga gallon
GCA Guam Code Annotated
GCR General Conformity Rule
GEPA Guam Environmental Protection Agency
GIS Geographic Information Systems
GovGuam Government of Guam
GPA Guam Power Authority
gpd gallons per day
gph gallons per hour
gpm gallons per minute
GTR Ground Threat Reaction
GUI graphical user interface

HIE Helicopter Insertion Extraction
HMMV High Mobility Multipurpose Vehicle
hr hour(s)
hp horsepower
HVAC heating, ventilation, and air-conditioning

in inch(es)
INRMP Integrated Natural Resources Management Plan

km kilometer(s)
km^2 square kilometer(s)
kph kilometers per hour
kW kilowatt(s)
kW/hr kilowatts per hour

L liter
LAER Lowest Achievable Emission Rate
lb pound
LF linear feet
LOS level of service
LNG Liquefied Natural Gas

m meter(s)
m^2 square meter(s)
m^3 cubic meters()
M million
MACG Marine Air Control Group Training
mg million gallons
mgd million gallons per day
MMBtu million Btu
MMS Minerals Management Service
mph miles per hour
MSW Municipal Solid Waste
MSWLF Municipal Solid Waste Landfill Facility
MW megawatts

NAA Non-Attainment Areas
NAAQS National Ambient Air Quality Standards
NCAR National Center for Atmospheric Research
NCEP National Center for Environmental Prediction
NCTS Naval Computer and Telecommunications Station
NDWWTP Northern District Wastewater Treatment Plant
NEPA National Environmental Policy Act
NESHAPs National Emission Standards for Hazardous Air Pollutants
NEW Net Explosive Weight
NMOC non-methane organic compounds
NO_2 nitrogen dioxides

NO_x	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSF	New Source Review
NSPS	New Source Performance Standards
NWF	Northwest Field
O_3	ozone
OAQPS	Office of Air Quality Planning and Standards
O&M	Operations and Maintenance
ODMDS	Ocean Dredged Material Disposal Site
Pb	lead
PGUM	Guam International Airport
PM	particulate matter
ppm	parts per million
ppmv	parts per million by volume
PSD	Prevention of Significant Deterioration
RTA	Range Training Area
SIL	Significant Impact Level
SIP	State Implementation Plan
SLAMRAAM	Surface-Launched Advanced Medium-Range Air-to-Air Missile
SO_2	sulfur dioxide
SRTM	Shuttle Radial Topography Mission
TERF	Terrain Flight
THAAD	Terminal High Altitude Area Defense
TPY	tons per year
TSP	total suspended particles
U.S.	United States
USEPA	U.S. Environmental Protection Agency
UTM	Universal Transverse Mercator
VMT	vehicle miles traveled
VOC	Volatile Organic Compound
WGS	World Geodetic System
WWTP	Wastewater Treatment Plant

1. Introduction

This report focuses on air quality issues associated with the proposed United States (U.S.) Marine Corps Relocation to Guam and the Commonwealth of the Northern Mariana Islands (CNMI). The overall proposed action includes components involving the U.S. Marine Corps (Marine Corps or Marines), the U.S. Navy (Navy), and the U.S. Army (Army). The three main components of the proposed action are briefly stated as follows:

1. *Marine Corps*. (a) Develop and construct facilities and infrastructure within Guam and the CNMI to meet the Marine Corps' living, training, and readiness requirements. (b) Relocate approximately 8,600 Marines and their 9,000 dependents from Okinawa to the Mariana Islands (Marianas) while concurrently increasing the civilian support workforce by approximately 1,700. (c) Conduct and support training and operations for the relocated Marines.
2. *Navy*. Construct a new deep-draft wharf with shoreside infrastructure improvements creating the capability to support a transient nuclear aircraft carrier and carrier strike group (CSG) in Apra Harbor, Guam.
4. *Army*. (a) Develop facilities and infrastructure on Guam to allow an Army AMDTF to protect Guam from potential ballistic missile attacks. (b) Relocate approximately 600 military personnel, 900 dependents, and 100 civilian support workforce to Guam.

Potential air quality effects on Guam would occur from construction and operational activities associated with project alternatives that are being evaluated for the proposed development on and around Guam that are described in detail in the Guam and Commonwealth of the Northern Marianas (CNMI) Military Relocation Environmental Impact Statement (EIS) (U.S. Navy and Joint Guam Program Office). The EIS provides further information on some components of the proposed action that are not discussed in detail in this study. Only portions of the air impact study that are relevant to the Final EIS are included in this appendix. Volumes 2-7 of the EIS discuss the following components of the proposed action:

- Volume 2: Marine Corps Relocation – Guam
- Volume 3: Marine Corps Relocation – CNMI
- Volume 4: Aircraft Carrier Berthing
- Volume 5: Army Air and Missile Defense Task Force
- Volume 6: Related Actions – Utilities and Roadway Projects
- Volume 7: Mitigation, Summary of Impacts, and Cumulative Impacts

Volume 6 in particular uses many of the analyses contained in this study to determine air quality emissions associated with utilities (major and minor stationary sources) and roadway (mobile sources) projects. Construction and operational elements that would generate air quality emissions are included in all volumes of the EIS. Regional emissions under all the preferred alternatives are covered in Volume 7.

Air quality can be affected by air pollutants produced by mobile sources, such as vehicular traffic, aircraft, or non-road equipment used for construction activities, and by fixed or immobile facilities, referred to as "stationary sources." Stationary sources can include combustion and industrial stacks and exhaust vents. This study is organized as follows:

- *Chapter 1:* Introduction. States the purpose of and need for the proposed action and presents the organization of the report.

- *Chapter 2:* Air Quality Standards and Regulations. Discusses U.S. national, Guam, and CNMI air quality standards and regulations and their application to the proposed action.
- *Chapter 3*: Air Impact Analysis. This chapter contains the analyses performed for this study. It is divided into the following sections:
  - Major sources. Summarizes regulations for stationary sources of air emissions and evaluates air quality impacts of major power generation facilities under the power alternative.
  - Minor stationary sources. Evaluates air quality impacts from additional wastewater treatment and solid waste disposal associated with the proposed action under the preferred alternative, including odor impacts from wastewater treatment.
  - Mobile sources. Examines potential air quality impacts associated with mobile sources (e.g., on-road vehicle operations and roadway construction) on a micro-scale (local) and meso-scale (regional) basis.
  - Construction activity emissions. Describes various construction activities associated with different components of the proposed action and how associated air emissions were estimated for components such as buildings, equipment, vehicles, and asphalt curing. Constructions estimates for all parts of the proposed action are referenced.
  - Regional emissions under preferred alternatives. Discusses and provides references to the summary impact to air quality resources if all of the proposed actions were implemented concurrently.
  - CAA general conformity applicability analysis. Describes conformity regulations and how they apply to the proposed action.
- *Chapter 4:* References.

2. Air Quality Standards and Regulations

Air quality can be affected by air pollutants produced by mobile sources, such as vehicular traffic, aircraft, or non-road equipment used for construction activities, and by fixed or immobile facilities, referred to as “stationary sources.” Stationary sources can include combustion and industrial stacks and exhaust vents. Potential air quality effects on Guam would occur from construction and operational activities associated with project alternatives that are being evaluated for the proposed development on and around Guam. The proposed action also includes relocation of some United States Marine Corps (Marine Corps) training operations to the CNMI, which are considered separately from Guam due to the geographic distance.

2.1 National Ambient Air Quality Standards

The U.S. Environmental Protection Agency (USEPA), under the requirements of the 1970 Clean Air Act (CAA), as amended in 1977 and 1990 (Clean Air Act Amendments [CAAA]), has established National Ambient Air Quality Standards (NAAQS) for six contaminants, referred to as criteria pollutants (40 Code of Federal Regulations [CFR] 50). These six criteria pollutants are:

- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Ozone (O_3), with nitrogen oxides (NO_x) and volatile organic compounds (VOCs) as precursors
- Particulate matter (PM_{10}—less than 10 microns in particle diameter; $PM_{2.5}$—less than 2.5 microns in particle diameter)
- Lead (Pb)
- Sulfur dioxide (SO_2)

Table I.2-1 presents a description of the criteria pollutants and their effects on public health and welfare.

The NAAQS are comprised of primary and secondary standards. The primary standards were established to protect human public health. Typical sensitive land uses and associated sensitive receptors protected by the primary standards include publicly accessible areas, such as residences, hospitals, libraries, churches, parks, playgrounds, and schools. The secondary standards were established to protect the environment, including plants and animals, from adverse effects associated with pollutants in the ambient air.

The Guam Air Pollution Control Standards and Regulations, under Section 1103.2, contain the Guam Ambient Air Quality Standards (GAAQS), which are equivalent to the NAAQS. Table I. presents the NAAQS and the GAAQS.

The CNMI Air Pollution Control Regulations require compliance with NAAQS and permitting for stationary sources of air emissions. The CNMI Division of Environmental Quality (DEQ) reviews air permit applications and issues air permits for stationary sources.

The air emissions that may result from the proposed action are addressed in this study for all criteria pollutants with the exception of lead. Lead emissions have been reduced significantly over years as a result of federal programs to control vehicle emissions by eliminating the use of lead-containing fuel. Ozone is a regional pollutant which normally is not addressed on a project basis; however, its precursor’s emissions (NO_x and VOCs) are quantified in this study.

Table I.2-1: Criteria Pollutants - Sources and Impacts

Pollutants and Their Sources	Health and Environmental Impacts
Ozone (O_3): a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but is created at ground level by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of heat and sunlight. Ground-level O_3 is known as smog. O_3 has the same chemical structure whether it occurs miles above the earth or at ground level and can have positive or negative effects, depending on its location in the atmosphere. Most O_3 (about 90%) occurs naturally in the stratosphere approximately 10 to 30 miles above the earth's surface it forms a layer that protects life on earth by absorbing most of the biologically damaging ultraviolet sunlight. In the earth's lower atmosphere, ozone comes into direct contact with living organisms. High levels of ground-level ozone can cause toxic effects, detailed in the adjacent column. VOC + NOx + Heat + Sunlight = O_3: Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOC that help to form O_3. Sunlight and hot weather cause ground-level O_3 to form in harmful concentrations in the air. As a result, it is considered an air pollutant, particularly in summer. Many urban areas tend to have high levels of O_3, but even rural areas are also subject to increased O_3 levels because wind carries O_3 and associated pollutants hundreds of miles away from their original sources.	**Health Problems**: O_3 can irritate lung airways and cause inflammation much like sunburn. Other symptoms include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when O_3 levels are high. Repeated exposure to O_3 pollution for several months may cause permanent lung damage. Anyone who spends time outdoors in the summer is at risk, particularly children and other people who are active outdoors. Even at very low levels, ground-level O_3 triggers a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis. **Plant and Ecosystem Damage**: Ground-level O_3 interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, and harsh weather. O_3 damages the leaves of trees and other plants, injuring them and impacting the appearance of cities, national parks, and recreation areas. O_3 reduces crop and forest yields and increases plant vulnerability to disease, pests, and harsh weather.
Carbon Monoxide (CO): a colorless, odorless gas that is formed when carbon in fuel is incompletely burned. It is a component of motor vehicle exhaust, which contributes about 56 % of all CO emissions nationwide. Nonroad engines and vehicles (such as construction equipment and boats) contribute about 22 % of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 % of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (e.g., metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air.	**Health Problems**: CO can cause harmful health effects by reducing oxygen delivery to the body's organs (e.g., heart, brain) and tissues. • **Cardiovascular Effects** – The health threat from lower levels of CO is most serious for those who suffer from heart disease (e.g., clogged arteries, congestive heart failure). For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce their ability to exercise; repeated exposures may contribute to other cardiovascular effects. • **Central Nervous System Effects** – Even healthy people can be affected by high levels of CO. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death. • **Smog** – CO contributes to the formation of smog (ground-level O_3), which can trigger serious respiratory problems.

Pollutants and Their Sources	Health and Environmental Impacts
Sulfur Dioxide (SO_2): SO_2 belongs to the family of sulfur oxide gases (SO_x). These gases dissolve easily in water. Sulfur is prevalent in raw materials, including crude oil, coal, and ore that contains common metals like aluminum, copper, zinc, lead, and iron. SO_x gases are formed when fuel containing sulfur, such as coal and oil, is burned, when gasoline is extracted from oil, or when metals are extracted from ore. SO_2 dissolves in water vapor to form acid, and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and their environment. Over 65 % of SO_2 released to the air, or more than 13 million tons per year, comes from electric utilities, especially those that burn coal. Other sources of SO_2 are industrial facilities that derive their products from raw materials like metallic ore, coal, and crude oil, or that burn coal or oil to produce process heat. Examples are petroleum refineries, cement manufacturing, and metal processing facilities. Also, locomotives, large ships, and some nonroad diesel equipment currently burn high sulfur fuel and release SO_2 emissions to the air in large quantities.	SO_2 causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. Particularly sensitive groups include people with asthma who are active outdoors, and children, the elderly, and people with heart or lung disease. **Health Problems**: • **Respiratory Effects from Gaseous SO_2** – High levels of SO_2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO_2 gas and particles cause respiratory illness and aggravate existing heart disease. • **Respiratory Effects from Sulfate Particles** - SO_2 reacts with other chemicals in the air to form tiny sulfate particles. When these are breathed, they gather in the lungs and are associated with increased respiratory symptoms and disease, difficulty in breathing, and premature death. **Plant and Ecosystem Damage**: • **Acid Rain -** SO_2 and NO_x react with other substances in the air to form acids, which fall to earth as rain, fog, snow, or dry particles. Some may be carried by the wind for hundreds of miles. • **Plant and Water Damage** - Acid rain damages forests and crops, changes the makeup of soil, and makes lakes and streams acidic and unsuitable for fish and other aquatic life. Continued exposure over a long time changes the community of plants and animals in an ecosystem. **Visibility Impairment:** • Haze occurs when light is scattered or absorbed by particles and gases in the air. Sulfate particles are the major cause of reduced visibility in many parts of the United States. **Aesthetic Damage:** • SO_2 accelerates the decay of building materials and paints, including irreplaceable monuments, statues, and sculptures that are part of our cultural heritage
Nitrogen Oxides (NO_x): the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Many of the NO_x are colorless and odorless. However, one common pollutant, NO_2, along with particles in the air can often be seen as a reddish-brown layer over many urban areas. NO_x form when fuel is burned at high temperatures, as in a combustion process. The primary sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels.	NO_x causes a wide variety of health and environmental impacts because of various compounds and derivatives in the family of NO_x, including NO_2, nitric acid, nitrous oxide, nitrates, and nitric oxide. **Health Problems**: • **Ground-level** O_3 **(smog)** is formed when NO_x and volatile organic compounds (VOCs) react in the presence of heat and sunlight. Children, people with lung diseases (e.g., asthma), and people who work or exercise outside are susceptible to adverse effects such as damage to lung tissue and reduction in lung function. O_3 can be transported by wind currents and cause health impacts far from original sources. Millions of Americans live in areas that do not meet the health standards for ozone. • **Particles** - NO_x reacts with ammonia, moisture, and other compounds to form nitric acid and related particles. Human health concerns include effects on breathing and the respiratory system, damage to lung tissue, and premature death. Small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory diseases such as emphysema and bronchitis, and aggravate existing heart disease. • **Toxic Chemicals** - In the air, NO_x reacts readily with common organic chemicals and even O_3, to form a wide variety of toxic products. Examples of these chemicals include the nitrate radical, nitroarenes, and nitrosamines.

Pollutants and Their Sources	Health and Environmental Impacts
	Plant and Ecosystem Damage: • **Acid Rain** - NO_x and sulfur dioxide react with other substances in the air to form acids that fall to earth as rain, fog, snow or dry particles, which can be carried by wind for hundreds of miles. Acid rain causes lakes and streams to become acidic and unsuitable for many fish and other aquatic life. • **Water Quality Deterioration** - Increased nitrogen loading in water bodies, particularly coastal estuaries, upsets the chemical balance of nutrients used by aquatic plants and animals. Additional nitrogen accelerates "eutrophication," which leads to oxygen depletion and reduces fish and shellfish populations. • **Global Warming** - One of the NO_x, nitrous oxide, is a greenhouse gas. It accumulates in the atmosphere with other greenhouse gasses causing a gradual rise in the earth's temperature. This leads to increased risks to human health, a rise in sea level, and other adverse changes to plant and animal habitat. **Visibility Impairment**: • Nitrate particles and nitrogen dioxide can block the transmission of light, reducing visibility in urban areas and on a regional scale in other areas. **Aesthetic Damage:** • Acid rain damages cars, buildings and historical monuments.
Particulates (PM_{10} and $PM_{2.5}$): Particulate matter (PM) is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets. Particles can be suspended in the air for long periods of time. Some particles are large or dark enough to be seen as soot or smoke. Others are so small that individually they can only be detected with an electron microscope. Some particles are directly emitted into the air. They come from a variety of sources such as cars, trucks, buses, factories, construction sites, tilled fields, unpaved roads, stone crushing, and burning of wood. Other particles may be formed in the air from the chemical change of gases. They are indirectly formed when gases from burning fuels react with sunlight and water vapor. These can result from fuel combustion in motor vehicles, at power plants, and in other industrial processes.	**Health Problems**: • Many scientific studies have linked breathing PM to a series of significant health problems, including: – Aggravated asthma. – Increases in respiratory symptoms (e.g., coughing; difficult or painful breathing etc.) – Chronic bronchitis. – Decreased lung function. – Premature death. **Plant and Ecosystem Damage:** • Particle matter can be carried over long distances by wind, settling on ground or water. The effects of this atmospheric deposition include: – Contributing to acidification of water bodies. – Changing the nutrient balance in coastal waters and large river basins. – Depleting the nutrients in soil. – Damaging sensitive forests and farm crops. **Visibility impairment:** • PM is the major cause of reduced visibility (haze) in parts of the United States. **Aesthetic damage:** • Soot, a type of PM, stains and damages stone and other materials, including culturally important objects such as monuments and statues.

Source: USEPA (August 2003)

2.2 ATTAINMENT STATUS AND AREA CLASSIFICATION

Areas where concentration levels are below the NAAQS for a criteria pollutant are designated as being in "attainment." Areas where a criteria pollutant level equals or exceeds the NAAQS are designated as being in "nonattainment." Based on the severity of the pollution problem, nonattainment areas are categorized as marginal, moderate, serious, severe, or extreme. Where insufficient data exist to determine an area's attainment status, it is designated as either unclassifiable or in attainment.

Components of the proposed action would occur in various locations on Guam. Many of the areas where the actions are proposed are currently designated as attainment areas for all criteria pollutants. There are two areas on Guam that are designated as attainment areas for CO, NO_x, O_3, PM, and Pb, but are designated as nonattainment areas for SO_2, as follows (Figure I.2-1, Guam SO_2 Nonattainment Areas):

- Piti: Portion of Guam within a 3.5- kilometers (km) (2.2-mile) radius of the Piti Power Plant
- Tanguisson: Portion of Guam within a 3.5-km (2.2-mile) radius of the Tanguisson Power Plant

Pursuant to Section 325(a) of the CAA and a petition submitted by the Governor of Guam on February 11, 1997, the EPA conditionally exempts Guam power plants from certain CAA requirements including using low sulfur fuel requirement. Such low sulfur fuel exemption is also applicable to Guam highway diesel vehicles (USEPA, 2000).

Table I.2-2: National and Guam Ambient Air Quality Standards

Pollutant and Averaging Time	*Primary Standard*	*Secondary Standard*
Carbon Monoxide:		
8-Hour Concentration[1]	9 ppm (10,000 µg/m³)	None
1-Hour Concentration[1]	35 ppm (40,000 µg/m³)	
Nitrogen Dioxide:		
Annual Arithmetic Mean	0.053 ppm (100 µg/m³)	Same as Primary
Ozone		
8-Hour Average[2]	0.075 ppm	Same as Primary
Particulate Matter[3]:		
PM_{10}		
24-Hour Average[4]	150 µg/m³	Same as Primary
$PM_{2.5}$		
Annual Arithmetic Mean[5]	15 µg/m³	Same as Primary
24-Hour Average[6]	35 µg/m³	Same as Primary
Lead:		
Quarterly Average	1.5 µg/m³	Same as Primary
Rolling 3-Month Average[7]	0.15 µg/m³	Same as Primary
Sulfur Dioxide:		
Annual Arithmetic Mean[8]	0.03 ppm	---
24-Hour Maximum[1,8]	0.14 ppm	---
3-Hour Maximum[1]	---	0.5 ppm (1,300 µg/m³)
1-Hour Average[9]	0.075 ppm	---

Notes: 1. Not to be exceeded more than once a year

2. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm.

3. PM_{10} - particulate matter diameter of 10 microns or less; $PM_{2.5}$ - particulate matter diameter of 2.5

4. Not to be exceeded more than once per year on average over 3 years.

5. To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

6. To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³.

7. Final rule signed October 15, 2008.

8 Revoked on June 2, 2010.

[9] Standard attained when the 99th percentile of daily highest level over 3 years is below 0.075 ppm.

Sources: 40 CFR 50 and Guam Air Pollution Control Standards and Regulations.

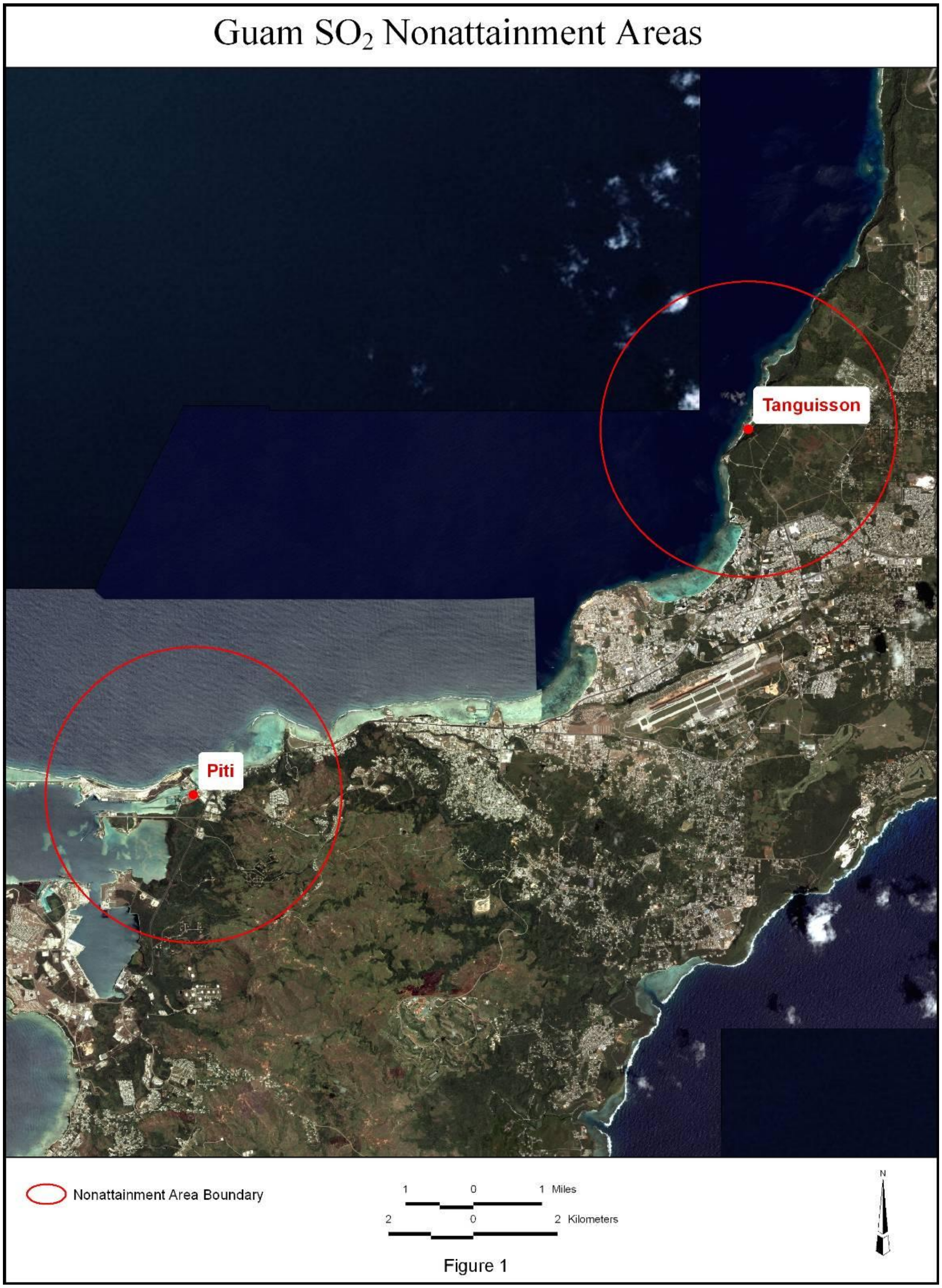

Figure I.2-1: Guam SO2 Nonattainment Areas

Both areas are designated nonattainment for SO_2 as a result of monitored and modeled exceedances in the 1970s. Since that time, changes have been made to these power generation facilities. In accordance with 40 CFR Parts 80 and 86, both plants were rebuilt, upgrading their emission controls in the 1990s. Based on these improvements, Guam has submitted a redesignation request to USEPA. The pending redesignation request shows that the Piti power plant is now in attainment. The Tanguisson power plant is relatively far from sensitive land use areas. In addition, as both plants are located on the western side of the island and the trade winds blow persistently from east-to-west (Volume 2, Section 5.1.1.5), the impact of the SO_2 emissions on the people of Guam from the power plants is reduced. Mobile sources, such as cars, are a minor contributor to SO_2 emissions.

However, on June 3, 2010 USEPA issued a new a final new health standard for SO_2, setting the one-hour SO_2 health standard at 75 parts per billion (ppb), a level designed to protect against short-term exposures ranging from five minutes to 24 hours. USEPA revokes the previous 24-hour and annual SO_2 health standards. The attainment designation based on the new standard is anticipated to occur in 2012.

On CNMI, except for power generating facilities, there are no significant sources of air emissions resulting from the components of the proposed action on Tinian. However, military training vessels, on-road vehicles, and open burnings are sources of emissions that contribute to the existing ambient air quality background conditions at Tinian. While there are no air monitoring stations on Tinian, it can be assumed that ambient air quality is good and in compliance with air quality standards given the small number of emission sources on the island and that the island is currently designated as an attainment area for all criteria pollutants.

2.3 CLEAN AIR ACT GENERAL CONFORMITY

The 1990 amendments to the CAA require federal agencies to ensure that their actions conform to the appropriate state implementation plan (SIP) in a nonattainment area. The SIP is a plan that provides for implementation, maintenance, and enforcement of the NAAQS, and it includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards. The federal agency responsible for an action is required to determine if its action conforms to the applicable SIP.

The USEPA has developed two sets of conformity regulations, and federal actions are appropriately differentiated into transportation projects and non-transportation-related projects:

- Transportation projects are governed by the "transportation conformity" regulations (40 CFR Parts 51 and 93), which became effective on December 27, 1993 and were revised on August 15, 1997.
- Non-transportation projects are governed by the "general conformity" regulations (40 CFR Parts 6, 51 and 93) described in the final rule for Determining Conformity of General Federal Actions to State or Federal Implementation Plans that was published in the Federal Register on November 30, 1993. The General Conformity Rule (GCR) became effective January 31, 1994 and was revised on March 24, 2010.

As the proposed action is a non-transportation project and would potentially involve activities in the Piti and Tanguisson SO_2 nonattainment areas, the GCR applies to the proposed activities within the nonattainment areas. Therefore, a conformity analysis is required.

2.4 AIR TOXICS AND MOBILE SOURCE AIR TOXICS

In addition to the criteria pollutants, the CAA also lists 188 air toxics, known as hazardous air pollutants (HAPs). Toxic air pollutants include a number of substances that are known or suspected to cause cancer or other health effects in humans when they are exposed to certain levels of the pollutants. The CAA authorizes USEPA to characterize and control emissions of these pollutants. However, unlike the criteria pollutants, the ambient air quality standards have not been established for the majority of the air toxics by USEPA.

For air toxic pollutants, USEPA has identified a group of 21 air toxics as mobile-source air toxics, among which a total of seven air toxics are considered the priority Mobile Source Air Toxics (MSATs). These seven pollutants are: naphthalene, acrolein, benzene, 1-3 butadiene, formaldehyde, polycyclic organic matter (POM) and diesel particulate matter plus diesel exhaust organic gases (DPM+DEOG).

As part of the National Environmental Policy Act (NEPA) process, air toxics require review and evaluation as they could affect the quality of the human environment. The Federal Highway Administration (FHWA) issued an Interim Guidance Update (FWHA 2009) regarding MSAT analysis for NEPA documentation. In this guidance the FHWA developed a tiered approach, which includes the following three levels:

- Tier 1 – No analysis for projects with no potential for meaningful MSAT effects. These projects include:
  - Projects qualifying as a categorical exclusion under 23 CFR 771.117(c)
  - Projects exempt under the CAA Conformity Rule under 40 CFR 93.126
  - Other projects with no meaningful impacts on traffic volumes or vehicle mix
- Tier 2 – Qualitative analysis for projects with low potential MSAT effects
- Tier 3 – Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. These projects include:
  - Projects that would create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel PM in a single location
  - Projects that would create new or add significant capacity to urban highways, such as interstates, urban arterials, or urban collector-distribution routes with traffic volumes where the average annual daily traffic is projected to be in the range of 140,000 to 150,000 vehicles or greater by the design year
  - Projects located in proximity to populated areas or in rural areas, in proximity to concentrations of sensitive populations (i.e., schools, nursing homes, hospitals).

Using this methodology, an initial MSAT analysis for this project indicated that it would have a low potential for MSAT effects (i.e., Tier 2) and would require only a qualitative analysis (Parsons Brinkerhoff 2010).

However, a quantitative MSAT analysis based on the methodology described in the research report “Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process” prepared for the American Association of State Highway and Transportation Officials (AASHTO) (ICF International 2007) was performed for the EIS given the unusual scale of the proposed relocation as compared to other Navy actions, and to accommodate USEPA’s request as part of the NEPA disclosure process. This additional MSAT analysis (Parsons Brinkerhoff 2010) is summarized in Attachment B.

Based on the AASHTO report, a microscale MSAT analysis was performed at the worst-case congested intersections, as requested by USEPA. This analysis consists of:

- Local microscale sites (congested intersections)
- MSAT emission factors estimated using USEPA's Mobile6 program (Input parameters to accurately model MSATs were determined through consultation with FHWA and USEPA)
- CAL3QHC dispersion modeling conducted using maximum potential adverse effect meteorology to estimate 1-hour concentrations of each MSAT, which were then used to estimate acute (short-term) impacts. One-hour values were converted, using conservative traffic and meteorological persistence factors, to annual values in order to estimate annual impacts.
- Additional MSAT analysis also assessed traffic volumes, particularly at intersections, and vehicle-hours for idling heavy duty diesel trucks during peak construction. Diesel particulate matter was not considered because hot-spot modeling of particulate matter is not recommended, per USEPA's 2006 Conformity Rule.

2.5 Greenhouse Gas Emissions

Greenhouse gases (GHGs) are compounds that contribute to the greenhouse effect. The greenhouse effect is a natural phenomenon where gases trap heat within the surface-troposphere (lowest portion of the earth's atmosphere) system, causing heating (radiative forcing) at the surface of the earth. The primary long-lived GHGs directly emitted by human activities are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Although CO_2, CH_4, and N_2O occur naturally in the atmosphere, their concentrations have increased by 38, 149, 23 %, respectively, from the preindustrial era (1750) to 2007/2008 (USEPA 2009a). These gases influence the global climate by trapping heat in the atmosphere that would otherwise escape to space. The heating effect from these gases is considered the probable cause of the global warming observed over the last 50 years (USEPA 2009a). Global warming and climate change can affect many aspects of the environment. Not all effects of GHGs are related to climate, for example, elevated concentrations of CO_2 can lead to ocean acidification and stimulate terrestrial plant growth, and CH_4 emissions can contribute to ozone levels.

The USEPA Administrator has recognized potential risks to public health or welfare and on December 7, 2009 (USEPA 2009b) signed an endangerment finding regarding greenhouse gases under Section 202(a) of the Clean Air Act (CAA), which finds that the current and projected concentrations of the six key well-mixed greenhouse gases – CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 in the atmosphere threaten the public health and welfare of current and future generations.

The primary GHG emitted by human activities in the U.S. is CO_2, representing approximately 85% of total GHG emissions. The largest source of CO2, and of overall GHG emissions, is fossil fuel combustion. CH_4 emissions, which have declined from 1990 levels, result primarily from enteric fermentation (digestion) associated with domestic livestock, decomposition of wastes in landfills, and natural gas systems. Agricultural soil management and mobile source fuel combustion are the major sources of N_2O emissions in the U.S. Because CO_2 emissions comprise approximately more than 85% of GHGs and CO_2 emission factors are readily available for many stationary and mobile sources, this study considers CO2 as an indicator of GHG emissions. Accordingly, this study provides estimates of CO_2 emissions predicted in a similar way to those predicted for criteria pollutants. Unlike criteria pollutants, there is no established impact significance threshold for GHG, inclusive of CO_2, therefore, the predicted GHG emissions levels provided in this study only fulfill National Environmental Policy Act (NEPA) disclosure purposes, whereas predicted criteria pollutant emissions are regulated under the NAAQS.

The USEPA final rule on Mandatory Reporting of Greenhouse Gases (October 30, 2009) applies to fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric TPY of GHG emissions are required to submit annual reports to USEPA. The rule provides various methodologies to estimate CO_2 equivalencies based on fuel test and consumption data, but is essentially designed for specific stationary facility reporting purposes and cannot be directly used to calculate the CO_2 equivalencies of the proposed action. Most of the USEPA tools that are widely used for NEPA study purposes (e.g., AP-42, NONROAD and Mobile6 emissions factor models) do not provide emission factors for CO_2 equivalencies other than CO_2. Therefore, given the lack of regulatory tools to provide reasonable estimates of CO_2 equivalency, this study utilized the inventory ratios among CO_2, CH_4 and N_2O summarized in the most recent USEPA inventory report (USEPA 2009c) as the basis to approximately prorate CH_4 and N_2O emission levels.

In 2007, the U.S. generated about 7,150 Tg (million metric tons) CO_2 Eq (USEPA 2009c). This total includes emissions from Guam and Tinian, as after 2002 the United Nations no longer reports energy statistics for Guam separately (Marland et al. 2008) and emissions from Tinian were never reported separately. As the U.S. inventory does not provide a baseline for Guam, using the U.S. baseline condition for a comparison is considered appropriate for current conditions. The most recent year 2007 inventory data (USEPA 2009b) shows that CO_2, CH_4 and N_2O contributed from fossil fuel combustion process from mobile and stationary sources include approximately:

- 5,736 teragrams (Tg) (or million metric tons) of CO_2.
- 9 Tg CH_4.
- 45 Tg N_2O.

Since the estimates of CO_2 emissions for fossil fuel combustion sources and landfill were estimated in this study, the ratios among CO_2, CH_4 and N_2O based on above inventory levels were used to further predict CH_4 and N_2O equivalencies from combustion sources:

- CH_4 = (tons per year [TPY] of CO_2) * (9 / 5,736) = 0.16 % TPY of CO_2.
- N_2O = (TPY of CO_2) * (45/ 5,736) = 0.78 % TPY of CO_2.

Based on these ratios, the GHG contribution from CH_4 and N_2O is less than 1% of the total CO_2 equivalency for fossil fuel combustion sources. The total CO_2 Eq level was determined by combining CH_4 and N_2O equivalencies with CO_2 emissions. Additionally the Navy landfill resulting CH_4 emission was predicted directly through using the Landfill Gas Emission model (LandGEM) (USEPA 2005) and then further converted to the CO_2 Eq by multiplying CH_4 Global Warming Potential (GWP) value of 21.

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3. Air Impact Analysis

The air impact analysis is divided into the following sections:

- Major sources and major stationary sources.
- Minor stationary sources.
- Mobile sources.
- Construction activity emissions.
- Regional emissions under preferred alternatives.
- CAA general conformity applicability analysis.

3.1 MAJOR SOURCES AND MAJOR STATIONARY SOURCES

According to CAA regulations, a facility is considered to be a major stationary source when annual emissions exceed 250 tons per year (TPY) of any criteria pollutants (with the exception of a list of 28 source categories including fossil-fuel–fired steam electric plants with more than 250 British thermal unit per hour heat input for which 100 TPY will apply) in an attainment area or 100 TPY in a nonattainment area. Some existing major stationary sources are associated with the major power generation facilities described in EIS under the following alternatives:

- Major power generation facilities under Basic Alternative 1.

3.1.1 Stationary Source Regulations

Table I.3-1 summarizes the applicable emissions thresholds for air pollutants for a major source and a major source modification. For sources with annual emission levels exceeding the threshold of a major stationary source or major modification of the existing major stationary source, microscale ambient concentration levels from these sources are predicted and compared with the applicable standards and thresholds. The analysis is conducted in accordance with NEPA requirements, and the air permitting requirements describedon Guam's Environmental Protection Agency (GEPA's) Air Pollution Control Standards and Regulations (APCSR) Section 1104.6 (c) (12) (ix) (GEPA 2004) and applicable USEPA regulations on major sources. As noted, a facility is considered to be a major stationary source when annual emissions exceed 250 TPY of any criteria pollutants in an attainment area (with the exception of a list of 28 source categories including fossil-fuel–fired steam electric plants with more than 250 British thermal unit per hour heat input for which 100 TPY will apply) and 100 TPY in a nonattainment area. For an existing major stationary source, the net emission increase of each attainment pollutant that exceeds a specified significant emission increase level is considered to be a major modification that is subject to the provisions of the major modification regulations and New Source Review (NSR) regulations.

Table I.3-1: Applicable Major Source and Major Modification Thresholds

Pollutant	*Major Source Threshold (TPY)*	*Major PSD Source Threshold (TPY)*	*Major Modification Threshold (TPY)*
Sulfur dioxide (SO_2)	100	250/100[a]	40
Carbon monoxide (CO)	100	250/100[a]	100
Particulate matter (PM_{10})[b]	100	250/100[a]	15
Particulate matter ($PM_{2.5}$)[b]	100	250/100[a]	10
Nitrogen oxide (NOx)	100	250/100[a]	40
Volatile organic compounds (VOCs)	100	250/100[a]	40

Notes: PSD = Prevention of Significant Deterioration
[a] 100 TPY applies to certain sources such as fossil-fuel–fired steam electric plants with more than 250 British thermal unit per hour heat input
[b] PM_{10} is particulate matter with a diameter of 10 microns. $PM_{2.5}$ is particulate matter with a diameter of 2.5 microns.
Source: USEPA (40 CFR)

The USEPA also established Prevention of Significant Deterioration (PSD) regulations, last modified under the 1990 CAA Amendments (42 USC §§7470-7479), to ensure that air quality in attainment areas does not significantly deteriorate as a result of construction and operation of major stationary sources, and to allow future industrial growth to occur. New PSD major sources or major modifications to existing PSD major sources that are located in attainment areas are required to obtain a PSD permit prior to initiation of construction. Major new sources or major modifications to existing major sources located in non-attainment areas must meet the more stringent nonattainment NSR requirements as established in both USEPA and GEPA programs.

A PSD major source is classified as a stationary source with the potential to emit 250 TPY of any regulated pollutant in an attainment area. However, for several types of major source operations, including fossil fuel–fired steam electric plants of more than 250 million British thermal units (Btu) per hour heat input, 100 TPY is the PSD major source threshold. For an existing PSD major source, the net emission increase of each attainment pollutant that exceeds a specified significant emission increase level is considered to be a major modification that is subject to the provisions of the PSD regulations and PSD NSR. Table I.3-1 summarizes the applicable emissions thresholds for air pollutants for a PSD major source. Table I.3-2 provides the NAAQS for CO, NO_x, PM_{10} and $PM_{2.5}$ and SO_2 used in the analysis, if necessary.

Table I.3-2: National Ambient Air Quality Standards

Pollutant	*Averaging Period*	*NAAQS ($\mu g/m^3$)*
NO_2	Annual	100
SO_2	Annual 24-hour 3-hour	80 365 1,300
PM_{10}	24-hour	150
$PM_{2.5}$	Annual 24-hour	15 35
CO	8-hour 1-hour	10,000 40,000

Legend: $\mu g/m^3$ = microgram per cubic meter.

Because Guam has two nonattainment areas for SO_2, a nonattainment NSR under both USEPA and GEPA programs would be required by the project for SO_2 if an existing source major modification within the SO_2 nonattainment area would occur. However, since the power alternative would not construct a new power facility or modify any of existing GPA facilities within the two SO_2 nonattainment areas, the nonattainment NSR requirement would not apply.

3.1.2 Operating Permits

Stationary sources of air emissions at the various sites that could be affected by the proposed action include combustion turbines, boilers, generators, and fuel tanks. The CAAA set permit rules and emission standards for pollution sources of certain sizes. An air permit application is submitted by the operator of an emitting source in order to obtain approval of the source construction permit. A construction permit generally specifies a time period within which the source must be constructed. Permits should be reviewed for any modifications to the site or the air emissions sources to determine permit applicability. The USEPA oversees the programs that grant stationary source operating permits (Title V) and new or modified major stationary source construction and operation permits (NSR). The New Source Performance Standards (NSPS) apply to sources emitting criteria pollutants, while the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to sources emitting hazardous air pollutants (HAPs). HAPs, also known as toxic air pollutants, are chemicals that can cause adverse effects to human health or the environment. The 1990 CAAA directed USEPA to set standards for all major sources of toxic air pollutants. The Title V major source thresholds for pollutant emissions that are applicable to Guam are:

- 100 tons per year (TPY) for any criteria pollutant
- 25 TPY total HAPs
- 10 TPY for any one HAP.

The GEPA has adopted the USEPA-established stationary source regulations and acts as the administrator to enforce these stationary source air pollution control regulations on Guam. This is accomplished by requiring major emission sources and major modifications to employ the best available control technology (BACT) to curb air pollutant emissions (GEPA, Guam Code Annotated [GCA] Chapter 49, Title 10) in attainment areas. Therefore, the GEPA standards and permitting requirements may impose design constraints on modified major stationary sources. Further, the GEPA standards and stationary source regulations in conjunction with USEPA standards and regulations establish the basis for the assessment of the potential impacts on ambient air quality of the modified emission sources.

3.1.3 Power Basic Alternative 1

In 2008, the power requirements for proposed facilities were evaluated under the various planning alternatives (NAVFAC 2008). This study determined the electrical generation capacity needs, evaluated the interconnection options with existing GPA infrastructure, and evaluated alternative energy generation options that are viable on Guam. The air quality modeling for stationary sources assesses the air impacts from the power alternative, considering the specific equipment operating scenario for the alternative. The power alternative evaluated for the proposed action is described as follows:

- *Basic Alternative 1 (Preferred Alternative).* Basic Alternative 1 would recondition up to five existing combustion turbines and upgrade T&D systems and would not require new construction or enlargement of the existing footprint of the facilities. These reconditioned units would have the necessary reliability to serve as reserve capacity to ensure reliable operation of the IWPS. They would serve as peaking and reserve units.

This work would be undertaken by the GPA on its existing permitted facilities, and potentially utilize a private entity (PE) to obtain funds, recondition the CTs, install the T&D upgrades, and operate the CTs for a fee to enable repayment of the financing. Reconditioning would be made to existing permitted facilities at the Marbo, Yigo, Dededo (two CTs), and Macheche combustion turbines. These combustion turbines are not currently being used up to permit limits. T&D system upgrades would be on existing above ground and underground transmission lines. This alternative supports Main Cantonment Alternatives 1 and 2 and Main Cantonment Alternatives 3 and 8 would require additional upgrades to the T&D system.

Potential increases of air emissions, as compared to the actual affected operational conditions of the existing CTs, are anticipated from the proposed action. For NEPA disclosure purposes, the annual emissions above the current actual condition were estimated based on the anticipated total number of hours in power output required at each affected CT under the peaking condition and are summarized in Table I.3-3. The operation of reconditioned CTs (at Marbo, Dededo, Yigo, Macheche) are anticipated to require up to a total of 2,500 hours increase (maximum) from the baseline. The air emission impact analysis calculations assume an average of 500 hours per CT.

Since each affected CT facility is currently operated with the permitted annual emissions levels defined in the Title V permit issued by GEPA on March 2, 2009, the emissions associated with an average of 500 hours above the currently actual emission levels for each CT were prorated based on: 1) the permitted annual emissions levels and 2) the ratio of 500 hours and the permitted annual operating hours. The prorated emissions levels are summarized in Table I.3-3..

Table I.3-3: Net Increase in Annual Emissions Above Existing Condition – Basic Alternative 1

Affected Source	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*NO_x*	*VOC*	*CO_2*	*HAP*
Dededo CT#1	54.5	5.3	5.0	20.8	1.0	7,695.9	0.12
Dededo CT#2	54.5	5.35	5.0	20.8	1.0	7,695.9	0.12
Yigo	31.3	5.5	5.0	14.05	1.0	7,361.3	0.07
Marbo	16.2	5.5	1.6	9.1	2.6	5,353.7	0.08
Macheche	31.3	5.5	5.0	14.0	1.0	7,361.3	0.07
Combined Sources	187.7	26.9	21.5	78.5	6.6	35,468.3	0.46

It is anticipated that the limited increase in power required under the proposed action would be well below the permitted capacity at each affected CT for which the compliance of any applicable CAA air quality standards should have already been demonstrated during the air permitting process when GPA obtained the air permit for each affected source. Based on record searches, it was found that GPA conducted a health-based NAAQS compliance analysis for the Dededo, Macheche, and Yigo power facilities as listed below:

- PSD Air Quality Impact Analysis for Dededo Facility (R. W. Beck and Associates, June 11, 1992).
- Environmental Impact Assessment for Proposed Macheche Generating Facility (R.W. Beck and Associates, August 1992).
- Environmental Impact Assessment for Proposed Yigo Generating Facility (R.W. Beck and Associates, January 1993).

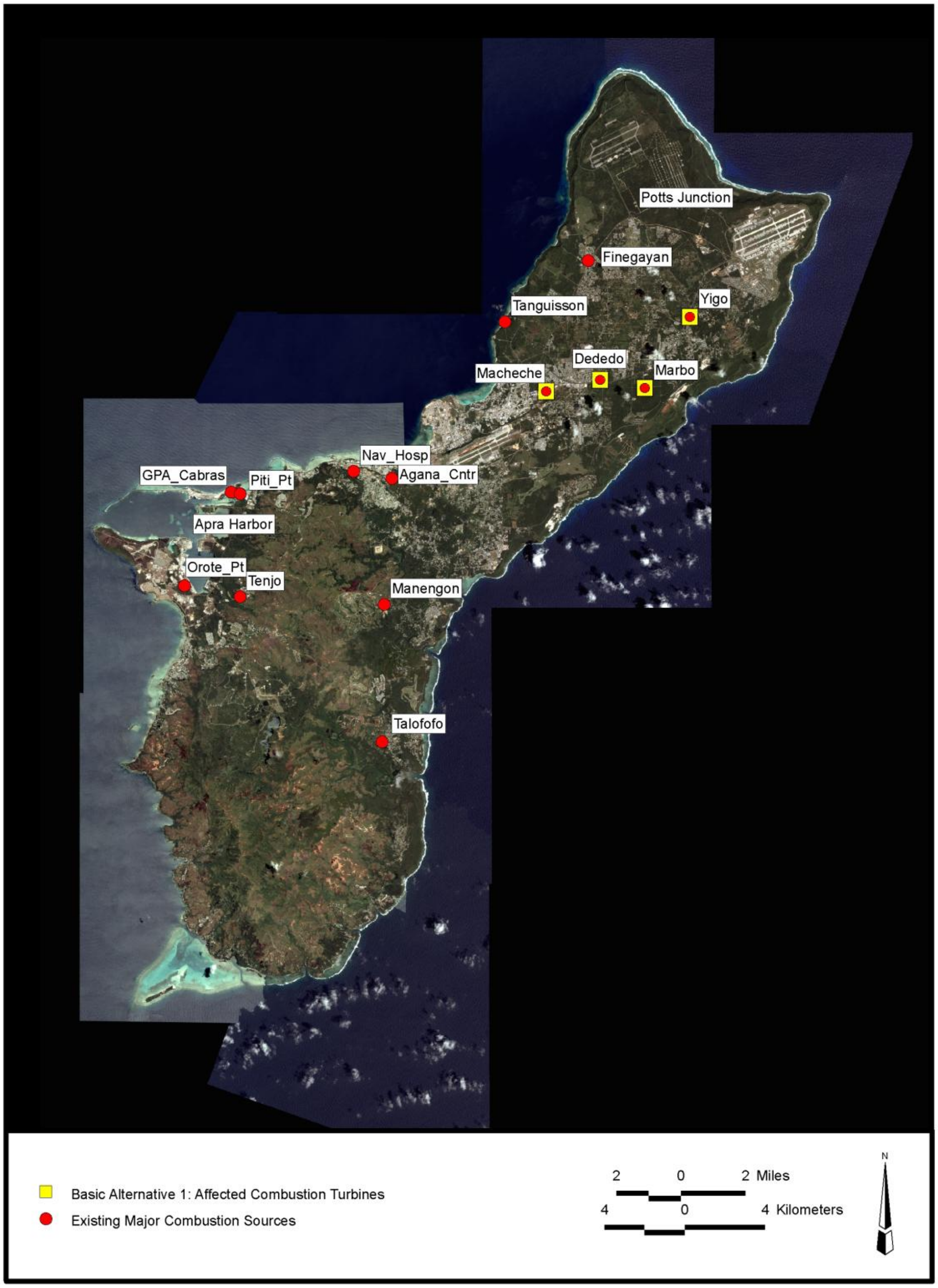


Figure I.3-1: Locations of Affected Major Existing EGU Sources on Guam

According to these documents, the CTs that would be potentially affected by the proposed action in Dededo, Macheche, and Yigo facilities, were modeled operating under the permitted conditions and the results are in compliance with the NAAQS.

However, a health-based NAAQS compliance analysis was not found at this time for the Marbo CT facility. DoD in coordination with GPA conducted an ambient concentration dispersion modeling analysis, using the methodology described below in Section 3.1.4, for the Marbo CT facility operating under its permitted capacity.

3.1.4 Impact Modeling for Power Plants

This section discusses the air quality impacts resulting from the proposed power alternative. The goal of the power plant impact study was to determine whether the proposed reconditioning of the existing CTs would exceed the NAAQS.

3.1.4.1 Technical Approach for Modeling

The air quality dispersion modeling was used to estimate air concentrations based on the available information for existing sources. The components of the modeling include, but are not limited to, choice of models and model options, assumptions and caveats regarding the emissions limits established in the affected GPA existing source Title V permit, development of model inputs, and analysis of the modeling results to quantify changes in air emission concentrations resulting from Basic Alternative 1. Air dispersion modeling was conducted for the emissions arising from the combustion of fossil fuels by existing major EGUs that would be utilized under the alternative GPA EGUs. This approach was only used for the Marbo CT, as the results of the GPA-conducted health-based NAAQS compliance analysis for the Dededo, Macheche, and Yigo power facilities described in the previous section were available for these CTs.

The dispersion modeling approach is designed to estimate near-field impacts, defined as within a 50-km (31-mile) transport radius (USEPA 2005), which covers the Region of Influence (ROI) of the proposed alternative. The modeling approach was developed in accordance with the following USEPA guidance:

- Guideline on Air Quality Models (Revised), incorporated as Appendix W of 40 CFR Part 51, Code of Federal Register (FR) Revision to the Guideline on Air Quality Models (USEPA November 2005)
- Draft New Source Review Workshop Manual (USEPA 1990)

The USEPA recommended regulatory dispersion model for near-field applications, American Meteorological Society (AMS)/USEPA Regulatory Model (AERMOD), was used. AERMOD is a steady-state plume dispersion model that simulates transport and dispersion from multiple point, area, or volume sources based on an up-to-date characterization of the atmospheric boundary layer. The model employs hourly sequential pre-processed meteorological data to estimate concentrations for selected averaging times from 1 hour to 1 year.

Because the existing sources to be impacted under the alternative are located inland in areas remote from coastal effects and under the influence of the relatively constant nature of the trade winds, the near-source steady-state regulatory model, AERMOD, is an appropriate tool for estimating air impacts from these sources.

Geography and Climate

Guam is the largest and southernmost island in the Marianas Archipelago, bounded by the Philippine Sea to the west and the Western Pacific Ocean to the east. The island is divided into a northern coralline limestone plateau and a southern chain of volcanic hills. It is 25 km by 45 km (15.5 miles by 28 miles) and has a population approximately of 176,000 people, with a number of significant population centers concentrated in the central of the island, near areas of interest covered by this study.

The southwestern portion of Guam has a sharp ridge of hills terminating at, the highest point on Guam. The topography is significant enough to often induce rows of cumulus or cumulus-type clouds that align parallel to the low-level wind, downwind of the island. The northern portion of the island has a raised plateau where Andersen Air Force Base (AFB) is located. The terrain of the island in many places rises steeply near the shore.

The climate is characterized as tropical marine. The weather is generally hot and very humid with little seasonal temperature variation. Guam has two seasons, the wet season (July - December) and the dry season (January - June). During the dry season the prevailing winds (trades winds) from the east intensify. Figure I.3-2 (Annual Surface Wind Rose at Guam International Airport (PGUM) – 2005) displays the wind rose from PGUM. The figure illustrates the peak in the trade wind direction (east to northeast). When a cool lake or sea breeze blows inland, it gradually warms through heating and mixing. At the shoreline this layer of cool air is generally rather thin, but as it moves inland the surface heating creates an increasingly thicker layer of well mixed air. When the plume from a power plant near the shore initially enters the atmosphere it experiences relatively stable air in the marine layer or in the air above it. The power plant plume rapidly rises and reaches a constant height above the ground and moves inland. In the stable air the plume initially grows in size at a moderate pace. When the plume encounters the increasing well-mixed layer, an abrupt and rapid mixing occurs, known as fumigation.

Shoreline sea breeze circulations can modify a dominant trade wind from the east northeast on Guam and bluffs along the shoreline can also influence local wind patterns. Onshore wind flow from either the trade winds or from a sea breeze may result in the possibility of shoreline fumigation for the EGUs located along the coast. As all affected existing EGUs under the alternative are all located in inland areas, the use of AERMOD, which assumes that the atmosphere has the same degree of mixing everywhere outside of a building wake, is applicable.

Meteorological Model Input Selection and Preparation

AERMOD meteorological inputs consist of hourly surface observations from the airport over five years (2003 through 2007), and twice-daily upper air soundings collected at the airport (WBAN No. 91212). Data was processed using AERMET software, with surface parameters derived from land use around the PGUM anemometer site (see discussion of land use below.)

Geophysical Data Preparation

Topographic digital elevation model (DEM) data was extracted from the Shuttle Radial Topography Mission (SRTM) database provided by the U.S. Geological Survey USGS at approximately 100 m (328 feet [ft]) resolution. The DEM data was reprojected from longitude – latitude to UTM zone 55 using the WGS-84 datum.

The U.S. Department of Agriculture (USDA) has created a 28 m (92 ft) high resolution ground cover data set for Guam (Liu and Fischer 2000) using satellite imagery, a spectral classification scheme, and an extensive ground level calibration effort. This data set was processed to develop fractional land cover information for the CALSYSTEM Makegeo Program. USDA land cover categories represent specific landscapes unique to Guam. Twenty-one land cover categories were mapped using a supplied weighting system for a set of reference classes for which values are assigned for roughness, albedo (surface reflectivity of sun's radiation), Bowen ratio (the ratio of sensible heat to latent heat -in arid zones, values are much greater than unity; in humid zones they are much less than unity), and other variables. These values were then averaged for each grid. For each receptor around a typical radial AERMOD extending out to 1 km (0.6 mile) the roughness length, albedo, and Bowen ratio were found and averaged to a 30 degree sector. A single season was used since snow and deciduous tree variations are not present on Guam. The 28 m (92 ft) ground cover classification information was also analyzed to provide a matrix of the land cover by type around PGUM.

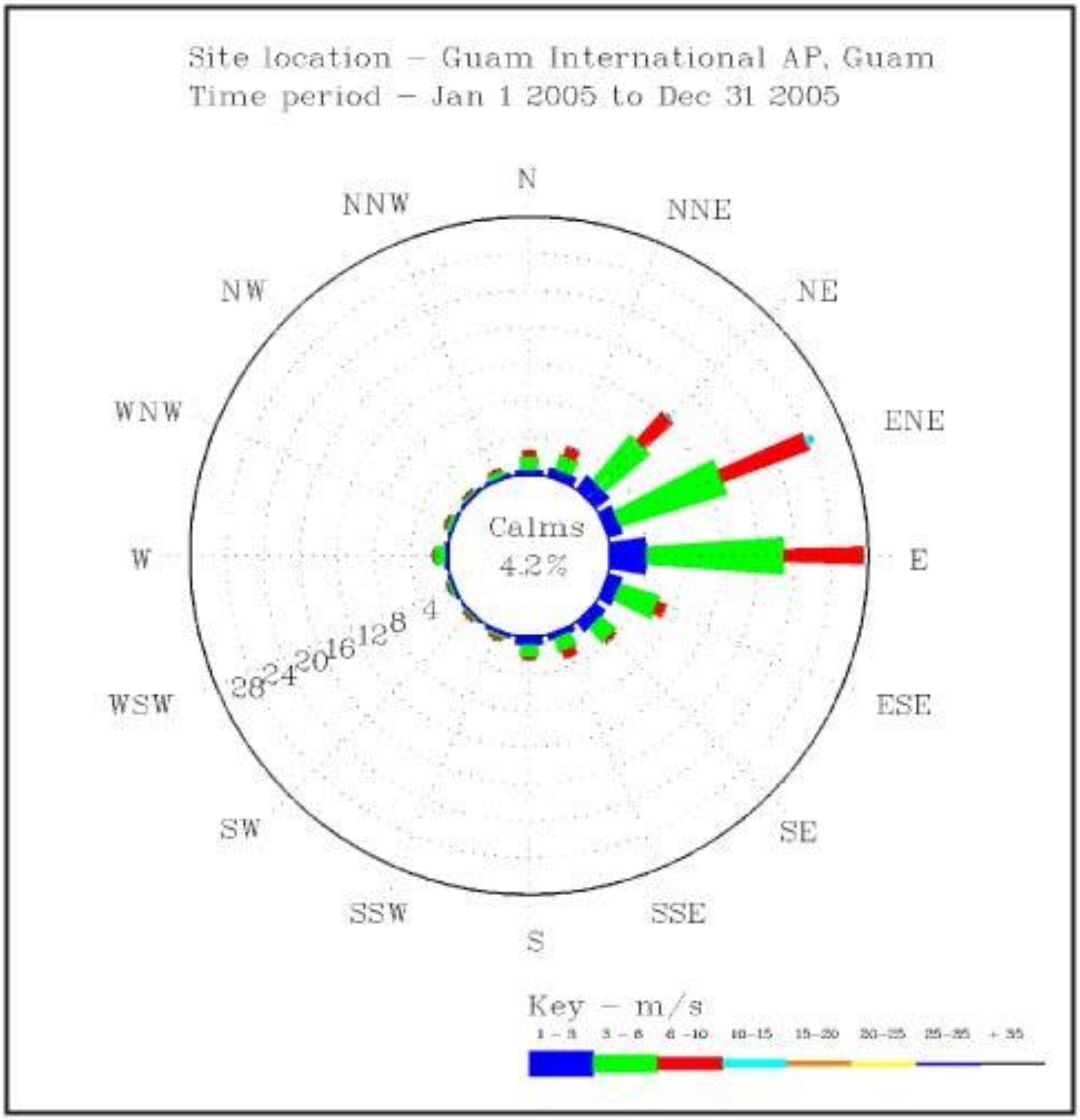


Figure I.3-2: Annual Surface Wind Rose at Guam's International Airport (PGUM) - 2005

Modeling System Configuration

The receptor network that was used for AERMOD modeling is described below along with the AERMOD control input settings and the output concentration metrics that were used to assess the concentrations for existing sources, and the changes in concentrations under Basic Alternative 1.

Receptor Configuration

A common receptor grid was utilized for AERMOD modeling. The grid includes a near source field of receptors around each source, and a coarse grid of receptors extending across the modeling domain.

The near source receptor grids are centered on the major sources that will be utilized under Basic Alternative 1 at Marbo. The polar grid consists of receptors along 36 radials that are spaced at 10 degree arcs (10 through 360 degrees). For each radial, receptors are located at 100 m (328 ft) increments from 100 m to 2,000 m (6,560 ft) from the center of the receptor grid, and at 200 m (656 ft) increments from 2,000 m to 5,000 m (16,400 ft) from the center of the grid. The near field polar grid is overlaid on a rectangle grid which covers the entire island of Guam, with receptors spaced 500 m (1,640 m) apart. The rectangular receptor network is truncated over water.

Development of Source Stack Parameters and Model Emissions

Source information, including emission rates and stack parameters, is discussed for existing sources in the Section 3.1.4.3. For stacks that do not follow good engineering practice (GEP) (e.g. less than 2.5 times highest wake generating building height), the physical height and footprint of nearby buildings were established from available drawings, satellite images, onsite photographs, and information confirmed by the GPA. Stack locations were determined from drawings, satellite images and onsite photographs. Model emission estimates SO_2, NO_x, CO, and PM were based on the emissions limits available from current Title V permits.

Options for AERMOD

AERMOD was run with the rural dispersion option and no dry or wet deposition. The model used stack tip downwash and elevated terrain effects. Predicted concentration averaging times used were:

- 3-hour, 24-hour, and annual for SO_2
- Annual for NO_x
- 1-hour and 8-hour for CO
- 24-hour and annual for PM_{10}
- 24-hour and annual for $PM_{2.5.}$ Given the lack of established emission factors, it is conservatively assumed that the $PM_{2.5}$ emission rate is the same as the PM_{10} emission rate for modeling purposes.

3.1.4.2 Historical Monitoring Observations and Existing Background Conditions

The government of Guam has not collected ambient air quality data since 1991. Therefore, no existing ambient air quality data are available to represent current air quality conditions with respect to the criteria pollutants for which the NAAQS were established. Historical data are available from 1972 through 1991, when ambient air quality data were collected at a number of sites through a USEPA-sponsored monitoring program. The monitored pollutants were total suspended particles (TSP), SO_2, NO_2, and nitrogen monoxide (NO). In 1991, PM_{10} was monitored in addition to TSP.

Prior to 1991, TSP were monitored at 20 sites, SO_2 at 14 sites, NO_2 at five sites, and NO at one site. In 1991, PM_{10} was monitored at four sites. In addition to the historical monitoring identified above, the GPA established a network of five stations to measure SO_2 at locations that are not downwind or close to any major EGUs during normal trade wind conditions from the fall of 1999 through the summer of 2000. Measured data for these monitoring stations, whose locations are shown in Figure I.3-3, indicate that the Apra Heights site has the highest concentrations, occurring in spring. The Dededo site recorded the highest concentrations during the unstable low wind conditions in summer. The Orote Point monitor concentrations were the highest during the fall and winter months. All of the observed SO_2 concentrations were below the 24-hour NAAQS.

Because there are no comprehensive ambient background air quality levels from recent monitoring available for Guam, the existing background air quality conditions around Guam are based on the current ambient air quality attainment status condition applicable for Guam:

- Attainment for all criteria pollutants, except for SO_2.
- Two SO_2 nonattainment areas with a 3.5 km radius around Piti and Tanguisson power plants.

The areas around affected existing sources under the power alternative are in attainment areas. Ambient air quality conditions are expected to be affected by existing stationary source operations and other minor source operations such as vehicular traffic.

Given the lack of existing ambient background levels, the applicable modeling results for each affected CT under its permitted capacity were compared directly with the NAAQS (Table I.3-2) to determine potential impact significance.

3.1.4.3 Affected Existing Source Emission Rates and Stack Parameters

Data used for the AERMOD modeling analysis for Marbo CT were based on information available from various sources including air permits and GPA-provided information. To predict NO_2 concentration levels, the USEPA-recommended default conversion factor of 0.75 (40 CFR 51-Appendix W USEPA November 2005) was used to convert predicted NO_x concentration levels to NO_2 concentration levels.

The stack parameters and emissions for Marbo Station Power Plant that were used in the short-term and annual permitted conditions are summarized in Table I.3-4 and Table I.3-5, respectively. Annual emissions were scaled based on permitted 2,654 hours of operation.

Table I.3-4: Permitted Condition Short-Term Modeling – GPA Marbo Station

Unit Name	Capacity MW	Stack Exhaust Temp. °K	Stack Height m	Stack Exit Velocity m/sec	Stack Diameter m	Emissions (g/sec)			
						CO	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
CT-1	16	688	11.8	18.87	3.44	3.6	23.69	1.17	1.17

Source: Emissions based on Guam EPA Title V Permit No. FO-009

Table I.3-5: Permitted Condition Used for Annual Modeling – GPA Marbo Station

Unit Name	Capacity MW	Stack Exhaust Temp. °K	Stack Height m	Stack Exit Velocity m/sec	Stack Diameter m	Emissions (g/sec)		
						NOx	SO_2	PM_{10}
CT-1	16	688	11.8	18.87	3.44	3.75	7.18	0.35

Source: Emissions based on Guam EPA Title V Permit No. FO-009

Figure I.3-3: Guam Power Authority Air Monitoring Stations

3.1.4.4 BASIC ALTERNATIVE 1 CRITERIA POLLUTANT IMPACT ANALYSIS

As indicated previously, health-based NAAQS compliance analyses were completed by GPA for the Dededo, Macheche, and Yigo CT facilities, which demonstrated compliance with the NAAQS. For the Marbo CT facility, a health-based NAAQS compliance analysis was not found at this time; however, this does not indicate that an analysis was not conducted. DoD in coordination with GPA conducted an ambient concentration dispersion modeling analysis using the modeling methodologies described above for the Marbo CT facility under its permitted capacity. The modeling results indicate that the facility is in compliance with the NAAQS. The baseline modeling results for predicted criteria pollutant concentrations at Marbo are summarized in Table I.3-6.

Table I.3-6: Predicted Criteria Pollutant Concentrations – GPA Marbo Station

Pollutant	Station Name	Averaging Period	Concentration ($\mu g/m^3$)	Distance (m)	Direction	NAAQS ($\mu g/m^3$)
SO_2	Marbo	3-hour	447.9	99	E	1,300
	Marbo	24-hour	145.3	99	E	365
	Marbo	Annual	2.3	301	WSW	80
NO_2	Marbo	Annual	0.9	301	WSW	100
CO	Marbo	1-hour	92.6	99	E	40,000
	Marbo	8-hour	57.4	99	E	10,000
PM_{10}	Marbo	24-hour	3.1	201	W	150
$PM_{2.5}$	Marbo	24-hour	1.2	401	WSW	35
	Marbo	Annual	0.1	301	WSW	15

Although it is concluded that the operation of affected CTs would not result in a significant health-based air quality impact, whether a major permit modification is required at any of these CTs remain to be determined. There is an ongoing DoD CT study to determine the specific repairs needed to recondition the CTs. Based on the study, if it is determined that Title V modifications (including PSD modifications for PSD sources) are required for one or more of the combustion turbine facilities, then modifications to the respective Title V permits would be obtained prior to the commencement of any reconditioning activities to ensure that potential air quality impact from these affected CTs would not be significant.

Summary of Impacts

Table I.3-7 summarizes the potential air quality impacts associated with Basic Alternative 1 for major sources. Operational activities for Basic Alternative 1 would result in less than significant impacts to air quality resources.

Table I.3-7: Summary of Potential Air Quality Impacts – Major Sources

	Basic Alternative 1
Power	LSI

Legend: LSI = Less than significant impact.

3.2 MINOR STATIONARY SOURCES

New or modified minor stationary sources that are associated with the utility development include the wastewater treatment plant and the solid waste landfill facility. Air emissions under each of these alternatives were modeled, as described in the following sections.

In addition to the minor stationary sources noted above, the proposed Marine Corps Main Cantonment build-up will require various minor stationary sources such as heating boilers, emergency generators, etc. At this stage, most of these anticipated minor sources are unknown because the proposed action is still in the EIS planning stage. These minor stationary sources are typically of a small scale, and would potentially produce only negligible emissions. As such, operation of these sources is unlikely to require air permitting. However, if an air permit is required for a specific minor source, the permit application will be prepared during the final design stage. Nevertheless, as these sources are identified during the design stage for each proposed facility, these minor stationary source emissions will be quantified to ensure that their operation is in compliance with applicable regulations.

3.2.1 Annual Operational Emissions for Wastewater Treatment

The proposed alternative (Basic Alternatives 1a and 1b) combines upgrade to the existing primary treatment facilities and expansion to secondary treatment at the Northern District Wastewater Treatment Plant (NDWWTP). The difference between Alternatives 1a and 1b is a requirement for a new sewer line from Barrigada housing to NDWWTP for Alternative 1b. Because this alternative would utilize existing primary and secondary treatment facilities within their operational capacity and these facilities consist of only limited combustion sources, it is anticipated that this alternative would not result in significant air quality impacts with respect to criteria pollutants. Although potential odor emissions associated with wastewater treatment would likely increase above the existing level, the odor impact evaluated over the short-term average condition (e.g., one hour) around existing facilities would remain the same and would result in no significant odor impact.

Given the incomplete design data provided for the programmatic long-term alternative, potential air quality impacts resulting from the alternative are not analyzed in this study and, if required, may be addressed in a future NEPA document. However, potential odor emissions from the new long-term wastewater treatment facility are expected to be significant particularly within the neighborhoods located around the new facility, and given the relatively high temperature on Guam. Odor control measures are anticipated to be required for the new facility under the long-term alternative.

3.2.2 Annual Operational Emissions for Solid Waste Disposal

Basic Alternative 1 was evaluated for solid waste disposal, as follows:

The Preferred Alternative for solid waste would be the continued use of Navy Landfill at Apra Harbor until Layon Landfill is opened, which is scheduled for July 2011. Operation of solid waste disposal facilities to handle additional solid waste generated as a result of the Proposed Action would increase air emissions. The USEPA LandGEM model (USEPA December 2005) was used to predict the increase in landfill-associated emissions resulting from the additional solid waste disposal.

3.2.2.1 Landfill Gas Emissions Model (LandGEM) and Predicted Emissions

The LandGEM model (Version 3.02) is a screening tool used to estimate emission rates from municipal solid waste landfills of total landfill gas, methane (CH_4), carbon dioxide (CO_2), non-methane organic compounds (NMOC equivalent to non-methane VOC), and individual air pollutants (USEPA May 2005). The model uses a first order decay equation and estimates annual emissions over a period specified by the user. LandGEM provides two sets of default parameters to use if site-specific data are not available and CAA defaults and inventory defaults. The CAA defaults are based on federal regulations pertaining to municipal solid waste (MSW) landfills as specified in the CAA, and may be used to determine whether the proposed landfill would be subject to control requirements associated with the regulations. The inventory defaults are based on emission factors in the USEPA *Compilation of Air Pollution Emission Factors (AP-42)* (USEPA 1995 and after) and may be used to generate emission estimates for use in emission inventories and air permits.

Control requirements could include a gas flare or flare stack to vent and/or burn waste gas resulting from the decomposition of waste. Flaring is a VOC combustion control process in which the VOCs are piped to a remote, usually elevated location, and burned in an open flame in the open air using auxiliary fuel, steam, air, or a specially designed burner tip, to promote mixing for nearly complete (>98%) VOC destruction. In this evaluation, 98 % destruction efficiency was assumed for VOC including CH_4 and NMOC.

LANDGEM Model Parameters and Data Inputs

The CAA default parameters were used in this analysis to determine whether the proposed landfill would be subject to control requirements associated with the regulations. The CAA defaults incorporate the federal NSPS requirements for new MSW landfills, the federal Emission Guidelines (EG) for existing MSW landfills, and the NESHAP for MSW landfills. The emission estimates generated from the model reflect maximum expected emissions and are used to determine whether a potential landfill would be subject to NSPS/EG and/or NESHAP regulatory controls.

The applicability of the NSPS to a particular landfill is determined in tiers. Landfills under 2.5 million tons (or 2.5 million cubic meters of waste) are not subject to the rule. After the size cutoff, the first tier of the applicability determination is to assess whether estimated emissions of NMOCs exceed a cutoff value of 50 megagrams (Mg), or metric tons, of NMOCs a year (USEPA May 2005). Landfills with emissions exceeding the cutoff value can install emission controls or move to the second tier of the applicability determination, which consists of testing the landfill for landfill gas NMOC concentrations. If testing shows NMOC emissions that exceed 50 Mg of NMOCs/yr, the landfill can choose to install emission controls or move to the third tier of the applicability determination, which is to perform another test to obtain a site-specific methane generation rate constant.

LandGEM relies on four model parameters to estimate landfill emissions, as follows:

- CH_4 generation rate (k).
- Potential CH_4 generation capacity (L_o).
- NMOC concentration.
- CH_4 content.

The CH_4 generation rate constant, or k value, is a constant that determines the rate of CH_4 generation for the mass of waste in the landfill. The higher the value of k, the faster the CH_4 generation rate increases and then decays over time. The value of k is a function of: the moisture content of the waste mass; the availability of nutrients for the microorganisms that break down the waste and form CH_4 and CO_2; the pH of the waste mass; and the temperature of the waste mass. The default CAA value is 0.05/ year.

The potential CH_4 generation capacity (L_o) is a constant that represents the potential capacity of a landfill to generate CH_4. This value depends only on the type and composition of waste placed in the landfill. The higher the cellulose content of the waste, the higher the value of *Lo*. The default CAA value is 170 m^3/Mg.

The NMOC concentration in landfill gas is a function of the type of waste in the landfill and the extent of the reactions that produce various compounds from the anaerobic decomposition of waste. The default CAA value is 4,000 parts per million by volume (ppmv) as hexane. Finally, in the LandGEM model, emissions resulting from a MSW landfill are estimated to be approximately 50% methane.

The LandGEM model also requires waste acceptance data. Characteristics to be entered in the model include the landfill name, opening date, closure date, design capacity (the total amount of refuse that can be disposed of in the landfill), and the amount of refuse in place in the landfill, or the annual refuse acceptance rate for the landfill.

Under the Basic Alternative for solid waste treatment, solid waste disposal would occur at the Navy Sanitary Landfill at Apra Harbor, until the GovGuam Landfill in Layon is completed. At that time, the solid waste will be diverted to the GovGuam Landfill per the Memorandum of Understanding between the DoD and GovGuam. This action would potentially result in increased NMOC (non-methane VOC), CO_2, and CH_4 emissions. To estimate this potential increase, the landfill throughput (input) was based on a waste generation rate of 7.4 lbs (3.4 kg) per capita per day. The future additional waste throughput associated with the Basic Alternative was considered to begin in 2010 and the resulting net annual increases in air emissions, shown in Table I.3-8, were predicted up to 2011.

Table I.3-8: Total Annual Operation Emissions – Basic Alternative 1

Year	*Pollutant (TPY)*				
	Uncontrolled NMOC	*Controlled NMOC*	*Uncontrolled CH_4*	*Controlled CH_4*	*CO_2*
2011	2.6	NANA	59.9	NANA	164

Legend: NANA = Not Applicable.

Once the new Layon Landfill is opened, DoD will divert solid waste from the Navy Sanitary Landfill to Layon per the Memorandum of Understanding between the DoD and GovGuam. The new landfill is assumed to open in 2011 and close in 2051 (with 80th year limit and without limit).

The same methodology described above was used to predict the increase in VOC, CO_2, and CH_4 emissions associated with the added solid waste disposal at the proposed GovGuam landfill beyond 2011. Table I.3-9 summarizes the predicted emissions for each year after the interim period. According to the *Revised Final Report: Guam Solid Waste Utility Study for Proposed Marine Corps Relocation* (HDR/Hawaii Pacific Engineers 2008), a flare system to control VOC emissions would be installed in 2013. Therefore, the controlled VOC including CH_4 component emissions increase shown in Table I.3-9 for 2014 reflects the presence of a flare controlling VOC including CH_4 component emissions with a destruction rate of 98% or greater (USEPA August 2003).

The waste acceptance rates used in the model for the GovGuam option presented in Table I.3-10 are based on the waste generation rate of 7.4 lbs/cy provided in the Guam Solid Waste Utility Study (HDR/Hawaii Pacific Engineers 2008). The model applies the final (or most current) acceptance rate over the baseline entered for 2010 to 2050, the year prior to the estimated closure date.

Table I.3-9: Total Annual Operation Emissions – Basic Alternative 1 / Layon

Year	*Uncontrolled NMOC*	*Controlled NMOC*	*Pollutant (TPY)*		
			Uncontrolled CH_4	*Controlled CH_4*	*CO_2*
2011	2.6	NANA	59.9	NANA	164
2012	9.0	NANA	208.4	NANA	572
2013	18.7	NA	435.5	NA	1195
2014	NA	0.6	NA	13.9	1903
2015	NA	0.9	NA	21.1	2900
2016	NA	1.1	NA	26.7	3665
2017	NA	1.3	NA	29.6	4055
2018	NA	1.3	NA	31.4	4302
2019	NA	1.4	NA	33.1	4537
2020	NA	1.5	NA	34.7	4763
2021	NA	1.6	NA	36.3	4978
2022	NA	1.6	NA	37.8	5182
2023	NA	1.7	NA	39.2	5377
2024	NA	1.7	NA	40.5	5562
2025	NA	1.8	NA	41.8	5738
2026	NA	1.9	NA	43.0	5905

Year	Uncontrolled NMOC	Controlled NMOC	Pollutant (TPY)		
			Uncontrolled CH_4	Controlled CH_4	CO_2
2027	NA	1.9	NA	44.2	6065
2028	NA	1.9	NA	45.3	6216
2029	NA	2.0	NA	46.4	6360
2030	NA	2.0	NA	47.4	6497
2031	NA	2.1	NA	48.3	6628
2032	NA	2.1	NA	49.2	6752
2033	NA	2.2	NA	50.1	6870
2034	NA	2.2	NA	50.9	6982
2035	NA	2.2	NA	51.7	7089
2036	NA	2.3	NA	52.4	7190
2037	NA	2.3	NA	53.1	7287
2038	NA	2.3	NA	53.8	7379
2039	NA	2.3	NA	54.4	7466
2040	NA	2.4	NA	55.0	7549
2041	NA	2.4	NA	55.6	7628
2042	NA	2.4	NA	56.2	7703
2043	NA	2.4	NA	56.7	7775
2044	NA	2.5	NA	57.2	7843
2045	NA	2.5	NA	57.6	7908
2046	NA	2.5	NA	58.1	7969
2047	NA	2.5	NA	58.5	8028
2048	NA	2.5	NA	58.9	8084
2049	NA	2.5	NA	59.3	8137
2050	NA	2.6	NA	59.7	8187
2051	NA	2.6	NA	60.0	8235

Legend: NA = Not Applicable.

Table I.3-10: Waste Acceptance Rates for Basic Alternative 1 / Layon

Year	Waste Acceptance Rate ((tons/yr)
2010	10,803
2011	27,303
2012	42,785
2013	50,373
2014	71,631
2015	59,568
2016	37,406
2017	29,227
2018	29,227
2019	29,396
2020	29,396
2021	29,396
2022	29,396
2023	29,396
2024	29,396
2025	29,396
2026	29,396
2027	29,396
2028	29,396
2029	29,396

Year	Waste Acceptance Rate ((tons/yr)
2030	29,396
2031	29,396
2032	29,396
2033	29,396
2034	29,396
2035	29,396
2036	29,396
2037	29,396
2038	29,396
2039	29,396
2040	29,396
2041	29,396
2042	29,396
2043	29,396
2044	29,396
2045	29,396
2046	29,396
2047	29,396
2048	29,396
2049	29,396
2050	29.396

Summary of Minor Stationary Source Impacts

Table I.3-11 summarizes the potential impacts associated with the alternatives for minor stationary sources, consisting of wastewater treatment and solid waste disposal. The operation activities associated with wastewater facilities would be well below the significance criterion of 250 TPY.

Table I.3-11: Summary of Potential Air Quality Impacts – Minor Stationary Sources

Component	Basic Alternative 1	Long-Term Alt. 1
Wastewater	LSI	SI-M [1]
Solid waste	LSI/ SI-M [2]	NA

[1] Refers to odor

: Refers to VOC emissions

Legend: NA = Not Applicable; LSI = Less than Significant Impacts: SI-M = significant and mitigable to less than significant impacts.

Potential air quality impacts associated with the solid waste alternative are also shown in Table I.3-11. Operational emissions associated with solid waste facilities were well below the significance criterion of 250 TPY for criteria pollutants for all alternatives. Therefore, the Basic Alternative 1 would result in less than significant impacts to air quality resources with respect to criteria pollutants but the planned new GovGuam Landfill in Layon would result in significant odor impacts that are mitigable to less than significant impacts.

It should be noted that CO_2 is not a criteria pollutant and therefore is not compared to criteria pollutant thresholds. The potential effects of CO_2 and other greenhouse gas emissions are by nature global and are based on cumulative impacts. Individual sources are not large enough to have an appreciable effect on climate change. Hence, the impact of proposed CO_2 and other greenhouse gas emissions is discussed in the context of summary of preferred alternatives impacts later in this report.

3.3 MOBILE SOURCES

Typical mobile sources include aircraft, aircraft ground support equipment, on-road and non-road vehicles, and construction equipment. Air quality impacts would result from the following four functional components of the proposed action:

1. *Main Cantonment Area functions*. Main cantonment military support functions (also known as base operations and support) include headquarters and administrative support, bachelor housing, family housing, supply, maintenance, open storage, community support (*e.g.*, retail, education, recreation, medical, day care, etc.), some site-specific training functions, and open space (e.g. parade grounds, open training areas, open green space in communities, etc), as well as the utilities and infrastructure required to support the cantonment area.
2. *Training functions.* There are three subclasses of training support functions required by Marine Corps units that would be stationed on Guam: *Firing ranges* are required for live and inert munitions practice, which generates the need for safety buffers called Surface Danger Zones (SDZs), and special use airspace (SUA) for certain weapons. *Non-fire maneuver ranges* are required for vehicle and foot maneuver training, including urban warfare training. Urban warfare training is conducted in buildings that simulate an urban environment. These buildings would be arranged close together where Marines can practice entering and maneuvering in tight spaces. *Aviation training ranges* are either improved (paved runway) or unimproved (unpaved landing sites) used to practice landing/takeoff and air field support (including loading/unloading of fuel, munitions, cargo, and personnel).
3. *Airfield functions*. The proposed Marine Corps relocation would include aviation units and aviation support units that require runway and hangar space and maintenance, supply and administrative facilities. There is also a need for air embarkation operations that are comparable to and compatible with the existing AFB embarkation operations that they would be co-located. Air embarkation operations refer to loading and unloading cargo and passengers to and from aircraft, comparable to a civilian airport terminal.
4. *Waterfront functions*. The ships and assault craft associated with the proposed Marine Corps relocation are transient (visiting) vessels. The transient vessels support Marine Corps operations and transient forces that presently train on Guam and in the CNMI.These ships would continue to support Marine Corps requirements in the Western Pacific after the proposed relocation, and would continue to require transient vessels support facilities on Guam. The planning criteria for harbors, regardless of usage, differ from those for land-based facilities and are therefore discussed as distinct from other training actions.

The following four action alternatives were carried forward for the proposed development of Marine Corps Main Cantonment Area functions (including housing/community support). All four of these alternatives also include areas to accommodate certain selected training functions.

- Alternative 1 represents one contiguous location for cantonment area functions and family housing/community support functions. It would include portions of NCTS Finegayan and South Finegayan, as well as acquisition or long term leasing of non- DOD lands at the former Federal Aviation Administration (FAA) parcel and the Harmon Annex parcel. A portion of the development would be constructed in the undeveloped overlay refuge.
- Alternative 2 (Preferred Alternative) also represents one contiguous land area for the cantonment and family housing /community support functions. It would include portions of NCTS Finegayan, portions of South Finegayan, and the acquisition or long term leasing of portions of privately-held lands in the former FAA parcel. A portion of the development would be constructed in the undeveloped overlay refuge.

- Alternative 3 plans for the main cantonment to include portions of NCTS Finegayan, and housing would be located on three geographically separated DoD parcels, including South Finegayan, Air Force Barrigada, and Navy Barrigada. No privately held lands would be acquired under Alternative 3. Under this alternative, the housing would be located non-contiguous to the main cantonment functions. A portion of the main cantonment would be constructed in the undeveloped overlay refuge.
- Alternative 8 would include portions of NCTS Finegayan, a portion of South Finegayan, the former FAA parcel, and a portion of the housing would be located on the geographically separated Air Force Barrigada parcel. A portion of privately held lands would be acquired by purchase or long term lease under Alternative 8. A portion of the main cantonment would be constructed in the undeveloped overlay refuge. Under Alternative 8, a portion of the required housing would be non-contiguous to the Main Cantonment Area.

The emissions from these mobile sources are regulated under the CAA Title II Emission Standards for Moving Sources that establishes emission standards that manufacturers must achieve. Therefore, unlike stationary sources, no permitting requirements exist for operating mobile sources.

3.3.1 Aircraft Operational Emissions

Aircraft and helicopter engines emit criteria pollutants during all phases of operation whether climb out, approach, touch and go, GCA Box, or cruise. Based on the estimated number of additional sorties on an annual basis (Czech and Kester 2008) and on base maintenance for the addition of new aircraft at Andersen AFB North Ramp field, the annual aircraft operational emissions at Andersen AFB were estimated using the emission factors provided by Aircraft Environmental Support Office (AESO).

The proposed action for the Marine Corps Relocation to Guam would result in a change to aircraft operations at Andersen AFB. Specific changes to aircraft operations would include the following:

- Transfer of four CH-53E, six AH-1Z, and three UH-1N aircraft in support of the Marine Corps relocation to Guam.
- Transfer of a Marine F/A-18D squadron in support of the Marine Corps relocation to Guam.
- Basing of two new MV-22 squadrons.
- Increased visits by aircraft carrier airwings to Andersen AFB, resulting in a four-fold increase of transient F/A-18C, F/A-18F, SH-60B/F, EA-18G, and E-2C airfield operations.

The airfield operations associated with the proposed action would primarily take place at Andersen AFB. Air pollutants would be emitted during all phases of these operations, including on-ground parking and engine idling, maintenance testing, and flight. Future annual emissions of criteria pollutants were estimated using:

- The USEPA Mobile Sources methodology laid out in *Procedures of Emission Inventory Preparation, Volume IV: Mobile Sources* (USEPA December 1992).
- Aircraft engine emission factors developed by the Navy's Aircraft Environmental Support Office (AESO,1999, 2000, 2001, and 2002 [multiple references for each year]) and
- The anticipated number of new aircraft sorties presented in the *Aircraft Noise Study for Guam Joint Military Master Plan at Andersen AFB* (Wyle 2008).

The airfield operations types for the no-action and proposed action scenarios include departures, straight-in (non-break) arrivals, overhead break arrivals, touch-and-go patterns, and ground controlled approach patterns.

Procedures to calculate emissions for each aircraft type typically include the following steps:

- Obtain emission factors for each aircraft engine type.
- Consider the range of operation types for each aircraft.
- Apply the applicable aircraft operating mode associated with annual flight operations.
- Calculate the emission rates for each aircrafts' type and operating mode by multiplying the respective emissions rates by annual flight operation numbers.
- Determine the total annual emissions by combining the emissions from all operations for all aircraft types.

Although air pollutant emissions occur during all phases of aircraft operation (parking, idling, and in-flight), only those emissions emitted in the lower atmosphere's mixing layer have the potential to result in ground-level ambient air quality impacts. The mixing layer is the air layer extending from ground level up to the point at which the vertical mixing of pollutants decreases significantly. The USEPA recommends that a default mixing layer of 3,000 ft (914 m) be used in aircraft emission calculations (USEPA December 1992). Consistent with this recommendation, aircraft emissions released above 3,000 ft were not included in this study. Emissions results for each aircraft type are presented in Table I.3-12 through Table I.3-13, and include two summary tables that present combined aircraft emissions as described below:

- Table I.3-17: Net emissions for aircraft Associated with Aircraft Carrier Airwings (EA-18G, F-18A/C, F-18E/F, E-2C, SK70 [UH-60A]) associated with baseline conditions and alternatives.
- Table I.3-23: Total Net Emissions for Aircraft (CH-53E, AH-1Z, UH-1N, MV-22B, F/A-18D) associated with the based addition to the alternatives only.

The emissions from aircraft sorties and maintenance were calculated by aircraft type on an annual basis and are also presented in Table I.3-24. The aircraft sortie emissions estimates are summarized in Table I.3-14.

Table I.3-1: Net Emissions for EA-18G

Pollutant	*LTO Emission Rate (lbs/LTO)*	*# of LTOs (LTOs/yr)*	*LTO Emissions (lbs/yr)*	*Total Emissions (TPY)*
SORTIE EMISSIONS FROM EA-18G Straight In Arrival AIRCRAFT				
NO_x	23.04	3	69.12	0.03
HC	66.14	3	198.42	0.10
CO	264.34	3	793.02	0.40
SO_2	0.98	3	2.94	0.00
PM_{10}	18.35	3	55.05	0.03
SORTIE EMISSIONS FROM EA-18G Break at Arrival AIRCRAFT				
NO_x	23.31	48	1188.88	0.56
HC	66.66	48	3199.68	1.60
CO	265.78	48	12757.44	6.38
SO_2	0.96	48	46.08	0.02
PM_{10}	17.94	48	861.12	0.43

Note: Emission factors are obtained from AESO Report No. 9815, Revision E, November 2002 and Report No. 9933 Revision B, November 2002.

Table I.3-2: Net Emissions for F-18AC

Pollutant	*LTO Emission Rate (lbs/LTO)*	*# of LTOs (LTOs/yr)*	*LTO Emissions (lbs/yr)*	*Total Emissions (TPY)*
SORTIE EMISSIONS FROM F-18AC Straight In Arrival AIRCRAFT				
NO_x	13.09	36	471.24	0.24
HC	53.74	36	1934.64	0.97
CO	139.40	36	5018.40	2.51
SO_2	0.82	36	29.52	0.01
PM_{10}	16.17	36	58.56	0.03
SORTIE EMISSIONS FROM F-18AC Break at Arrival AIRCRAFT				
NO_x	13.49	330	4451.70	2.23
HC	54.35	330	17935.50	8.97
CO	141.32	330	46635.60	23.32
SO_2	0.82	330	270.60	0.14
PM_{10}	15.98	330	58.56	0.03

Note: Emission factors are obtained from AESO Report No. 9815, Revision E, November 2002 and Report No. 9933 Revision B, November 2002.

Table I.3-3: Net Emissions for F-18EF

Pollutant	*LTO Emission Rate (lbs/LTO)*	*# of LTOs (LTOs/yr)*	*LTO Emissions (lbs/yr)*	*Total Emissions (TPY)*
SORTIE EMISSIONS FROM F-18EF Straight In Arrival AIRCRAFT				
NO_x	23.04	42	967.68	0.48
HC	66.14	42	2777.88	1.39
CO	264.34	42	11102.28	5.55
SO_2	0.98	42	41.16	0.02
PM_{10}	18.35	42	770.70	0.39
SORTIE EMISSIONS FROM F-18EF Break at Arrival AIRCRAFT				
NO_x	23.31	393	9160.83	4.58
HC	66.66	393	26197.38	13.10
CO	265.78	393	104451.54	52.23
SO_2	0.96	393	377.28	0.19
PM_{10}	17.94	393	7050.42	3.53

Note: Emission factors are obtained from AESO Report No. 9815, Revision E, November 2002 and Report No. 9933 Revision B, November 2002.

Table I.3-4: Net Emissions for E-2C

Pollutant	LTO Emission Rate (lbs/LTO)	# of LTOs (LTOs/yr)	LTO Emissions (lbs/yr)	Total Emissions (TPY)
SORTIE EMISSIONS FROM E-2C Straight In Arrival AIRCRAFT				
NO_x	6.61	9	59.49	0.03
HC	9.37	9	84.33	0.04
CO	13.91	9	125.19	0.06
SO_2	0.41	9	3.69	0.00
PM_{10}	4.11	9	36.99	0.02
SORTIE EMISSIONS FROM E-2C Break at Arrival AIRCRAFT				
NO_x	7.92	69	546.48	0.27
HC	9.39	69	647.91	0.32
CO	13.96	69	963.24	0.48
SO_2	0.46	69	31.74	0.02
PM_{10}	4.61	69	318.09	0.16

Note: Emission factors are obtained from AESO Report No. 9920B, Revision C, April 2000 and Report No. 9943 Revision B, April 2000.

Table I.3-5: Net Emissions for SK 70 (UH-60A)

Pollutant	LTO Emission Rate (lbs/LTO)	# of LTOs (LTOs/yr)	LTO Emissions (lbs/yr)	Total Emissions (TPY)
SORTIE EMISSIONS FROM SK 70 (UH-60A) Break at Arrival AIRCRAFT				
NO_x	3.40	117	397.80	0.20
HC	1.40	117	163.80	0.08
CO	12.30	117	1439.10	0.72
SO_2	0.30	117	35.10	0.02
PM_{10}	2.30	117	269.10	0.13

Note: Emission factors are obtained from AESO Report No. 9929, February 1999 and Report No. 9933, June 1999 for Aircraft UH-60A.

Table I.3-6: Total Net Emissions for Aircraft Associated with Aircraft Carrier Airwings

Aircraft	*Sortie Emissions (tons/yr)*											
	SO_2		*CO*		*PM_{10}*		*NO_x*		*HC*		*CO_2*	
	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival
Sortie Emissions												
EA-18G	0.02	0.00	6.38	0.40	0.43	0.03	0.56	0.03	1.60	0.10	-	-
F-18A/C	0.14	0.01	23.32	2.51	0.03	0.03	2.23	0.24	8.97	0.97	-	-
F-18E/F	0.19	0.02	52.23	5.55	3.53	0.39	4.58	0.48	13.10	1.39	-	-
E-2C	0.02	0.00	0.48	0.06	0.16	0.02	0.27	0.03	0.32	0.04	-	-
SK70 (UH-60A) BLACKH	0.02		0.72		0.13		0.20		0.08		-	
Total Emissions	0.42		91.64		4.74		8.62		26.57		-	

Table I.3-7 CH-53E Based Addition Aircraft Emissions

Pollutant	*Sortie Emissions*													*Maintenance Emissions*			*Total CH-53E Emissions*	
	LTO Emission Rate (lbs/LTO)	# of LTO (LTOs/yr)	LTO Emissions (lbs/yr)	T&G Emissions Rate (lbs/T&G)	# of T&G (T&Gs/yr)	T&G Emissions (lbs/yr)	GCA Box Emission Rate (lbs/GCAs)	# of GCA Box (GCAs/yr)	GCA Box Emissions (lbs/yr)	FCLP Emission Rate (lbs/yr)	# of FCLP (FCLPs/yr)	FCLP Emissions (lbs/yr)	Total Sortie Emissions (lbs/yr)	# of Aircrafts	Maintenance Emissions lbs/AC/yr	Total Maintenance Emissions (lbs/yr)	Lbs/yr	Tons/year
NO_x	8.90	472	4200.8	2.11	600	1266.0	4.44	120.00	532.8	2.11	20	42.2	6041.8	4	258.4	1033.60	7,075.40	3.54
HC	11.20	472	5286.4	0.13	600	78.0	0.19	120.00	22.8	0.13	20	2.6	5389.8	4	195.9	783.60	6,173.40	3.09
CO	22.90	472	10808.8	0.77	600	462.0	1.44	120.00	172.8	0.77	20	15.4	11459.0	4	402.6	1610.40	13,069.40	6.53
SO_2	0.70	472	330.4	0.11	600	66.0	0.23	120.00	27.6	0.11	20	2.2	426.2	4	20.0	80.00	506.20	0.25
PM_{10}	3.80	472	58.6	0.61	600	366.0	1.25	120.00	150.0	0.61	20	12.2	586.8	4	78.0	312.00	898.76	0.45

Note: Emission factors are obtained from AESO Report No. 9922, Revision C, February 2000 and Report No. 9960 Revision B, April 2000.

Table I.3-8: AH-1N Based Addition Aircraft Emissions

	Sortie Emissions													*Maintenance Emissions*			*Total CH-53E Emissions*	
Pollutant	LTO Emission Rate (lbs/LTO)	# of LTO (LTOs/yr)	LTO Emissions (lbs/yr)	T&G Emissions Rate (lbs/T&G)	# of T&G (T&Gs/yr)	T&G Emissions (lbs/yr)	GCA Box Emission Rate (lbs/GCAs)	# of GCA Box (GCAs/yr)	GCA Box Emissions (lbs/yr)	FCLP Emission Rate (lbs/yr)	# of FCLP (FCLPs/yr)	FCLP Emissions (lbs/yr)	Total Sortie Emissions (lbs/yr)	# of Aircrafts	Maintenance Emissions lbs/AC/yr	Total Maintenance Emissions (lbs/yr)	Lbs/yr	Tons/year
NO_x	2.09	2281	4767.3	0.25	3000	750.0	1.12	1500.00	1680.0	0.32	30.0	9.6	7206.9	6	15.88	95.28	7,302.17	3.65
HC	0.33	2281	752.7	0.03	3000	90.0	0.12	1500.00	180.0	0.04	30.0	1.2	1023.9	6	4.23	25.38	1,049.31	0.52
CO	7.08	2281	16149.5	0.54	3000	1620.0	2.5	1500.00	3690.0	0.79	30.0	23.7	21483.2	6	76.33	457.98	21,941.16	10.97
SO_2	0.17	2281	387.8	0.02	3000	60.0	0.08	1500.00	120.0	0.02	30.0	0.6	568.4	6	1.4	8.40	576.77	0.29
PM_{10}	1.80	2281	58.6	0.19	3000	570.0	0.88	1500.00	1320.0	0.26	30.0	7.8	1956.4	6	14.67	88.02	2,044.38	1.02

Note: Emission factors are obtained from AESO Report No. 9922, Revision C, February 2000 and Report No. 9960 Revision B, April 2000.

Table I.3-9: UH-1N Based Addition Aircraft Emissions

	Sortie Emissions													*Maintenance Emissions*			*Total CH-53E Emissions*	
Pollutant	LTO Emission Rate (lbs/LTO)	# of LTO (LTOs/yr)	LTO Emissions (lbs/yr)	T&G Emissions Rate (lbs/T&G)	# of T&G (T&Gs/yr)	T&G Emissions (lbs/yr)	GCA Box Emission Rate (lbs/GCAs)	# of GCA Box (GCAs/yr)	GCA Box Emissions (lbs/yr)	FCLP Emission Rate (lbs/yr)	# of FCLP (FCLPs/yr)	FCLP Emissions (lbs/yr)	Total Sortie Emissions (lbs/yr)	# of Aircrafts	Maintenance Emissions lbs/AC/yr	Total Maintenance Emissions (lbs/yr)	Lbs/yr	Tons/year
NO_x	1.28	768	983.0	0.19	1000	190.0	0.52	500.0	260.0	0.25	15.0	3.8	1436.8	3	20.86	62.58	1,499.37	0.75
HC	0.67	768	514.6	0.01	1000	10.0	0.02	500.0	10.0	0.02	15.0	0.3	534.9	3	21.74	65.22	600.08	0.30
CO	3.32	768	2549.8	0.13	1000	130.0	0.36	500.0	180.0	0.25	15.0	3.8	2863.5	3	99.86	299.58	3,163.09	1.58
SO_2	0.11	768	84.5	0.02	1000	20.0	0.04	500.0	20.0	0.02	15.0	0.3	124.8	3	2.09	6.27	131.05	0.07
PM_{10}	1.18	768	906.2	0.16	1000	160.0	0.45	500.0	225.0	0.22	15.0	3.3	1291.2	3	21.92	65.76	1,357.00	0.68

Note: Emission factors are obtained from AESO Report No. 9922, Revision C, February 2000 and Report No. 9960 Revision B, April 2000.

Table I.3-10: MV-22 Based Additions Aircraft Emissions

Pollutant	*Sortie Emissions*													*Maintenance Emissions*			*Total CH-53E Emissions*	
	LTO Emission Rate (lbs/LTO)	# of LTO (LTOs/yr)	LTO Emissions (lbs/yr)	T&G Emissions Rate (lbs/T&G)	# of T&G (T&Gs/yr)	T&G Emissions (lbs/yr)	GCA Box Emission Rate (lbs/GCAs)	# of GCA Box (GCAs/yr)	GCA Box Emissions (lbs/yr)	FCLP Emission Rate (lbs/yr)	# of FCLP (FCLPs/yr)	FCLP Emissions (lbs/yr)	Total Sortie Emissions (lbs/yr)	# of Aircrafts	Maintenance Emissions lbs/AC/yr	Total Maintenance Emissions (lbs/yr)	Lbs/yr	Tons/year
MV-22 Break at Arrival AIRCRAFT																		
NO_x	6.13	1781	10917.5	3.57	566	2020.6	5.20	707.0	3676.4	4.61	60.0	276.6	16891.2	12	525.68	6307.68	23,198.83	11.60
HC	0.05	1781	89.1	0.003	566	1.7	0.004	707.0	2.8	0.003	60.0	0.2	93.8	12	4.59	55.08	148.84	0.07
CO	3.07	1781	5467.7	0.19	566	107.5	0.260	707.0	183.8	0.22	60.0	13.2	5772.2	12	296.32	3553.32	9,325.55	4.66
SO_2	0.31	1781	552.1	0.11	566	62.3	0.16	707.0	113.1	0.14	60.0	8.4	735.9	12	26.05	312.60	1,048.49	0.52
PM_{10}	1.06	1781	1887.9	0.44	566	249.0	0.63	707.0	445.4	0.55	60.0	33.0	2615.3	12	87.27	1,047.24	3,662.55	1.83
CO_2	2498.70	1781	4450184.7	899	566	508834.0	1283	707.0	907081.0	1119.0	60.0	67140.0	5933239.7	12	209662	2,515,944.0	8,449,183.7	4,224.59
MV-22 B Straight In Arrival AIRCRAFT																		
NO_x	3087	261	1010.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1010.1	NA	NA	NA	1010.1	0.51
HC	0.05	261	13.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.1	NA	NA	NA	13.1	0.01
CO	2.96	261	772.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	772.6	NA	NA	NA	772.6	0.39
SO_2	0.24	261	62.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	62.6	NA	NA	NA	62.6	0.03
PM_{10}	0.78	261	203.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	203.6	NA	NA	NA	203.6	0.10
CO_2	1934.80	261	504982.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	504982.8	NA	NA	NA	504982.8	252.49

Note: Emission factors are obtained from AESO Report No. 9922, Revision C, February 2000 and Report No. 9960 Revision B, April 2000.

Table I.3-11: FA-18D Based Additions Aircraft Emissions

Pollutant	*Sortie Emissions*										*Maintenance Emissions*			*Total FA-18D Emissions*	
	LTO Emission Rate (lbs/LTO)	# of LTO (LTOs/yr)	LTO Emissions (lbs/yr)	T&G Emissions Rate (lbs/T&G)	# of T&G (T&Gs/yr)	T&G Emissions (lbs/yr)	GCA Box Emission Rate (lbs/GCAs)	# of GCA Box (GCAs/yr)	GCA Box Emissions (lbs/yr)	Total Sortie Emissions (lbs/yr)	# of Aircrafts	Maintenance Emissions lbs/AC/yr	Total Maintenance Emissions (lbs/yr)	Lbs/yr	Tons/year
MV-22 Break at Arrival AIRCRAFT															
NO_x	15.95	995	15870.3	5.86	1825	10694.5	11.71	398.0	4660.6	31225.3	12	513.9	6166.80	37392.13	18.70
HC	54.43	995	54157.9	0.22	1825	401.5	0.450	398.0	179.1	54738.5	12	1622.4	19468.80	74207.25	37.10
CO	143.03	995	142314.9	1.14	1825	2080.5	2.27	398.0	903.5	145298.8	12	4460.5	53526.00	198824.81	99.41
SO_2	0.89	995	885.6	0.22	1825	401.5	0.45	398.0	179.1	1466.2	12	27.6	331.20	1797.35	0.90
PM_{10}	16.61	995	16527.0	3.05	1825	5566.3	6.11	398.0	2421.8	24525.0	12	457.4	5488.80	30013.78	15.01
MV-22 B Straight In Arrival AIRCRAFT															
NO_x	15.40	176	2710.40	NA	NA	NA	NA	NA	NA	2710.40	NA	NA	NA	2710.40	1.36
HC	53.82	176	9472.32	NA	NA	NA	NA	NA	NA	9472.32	NA	NA	NA	9472.32	4.74
CO	141.10	176	24833.60	NA	NA	NA	NA	NA	NA	24833.60	NA	NA	NA	24833.60	12.42
SO_2	0.90	176	158.40	NA	NA	NA	NA	NA	NA	158.40	NA	NA	NA	158.40	0.08
PM_{10}	16.86	176	2967.36	NA	NA	NA	NA	NA	NA	2967.36	NA	NA	NA	2967.36	1.48

Note: Emission factors are obtained from AESO Report No. 9815, Revision E, November 2002, and Report No. 9933, Revision B, November 2002.

Table I.3-12: Total Net Emissions for Aircraft Associated with the Based Addition

Aircraft	*Sortie Emissions (tons/yr)*											
	SO_2		*CO*		*PM_{10}*		*NO_x*		*HC*		*CO_2*	
	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival	Break at Arrival	Straight In Arrival
Sortie Emissions												
MV-22B	0.37	0.03	2.89	0.39	1.31	0.10	8.45	0.51	0.05	0.01	2966.62	252.49
F/A-18D	0.73	0.08	72.65	12.27	12.26	1.48	15.61	1.36	27.37	4.74	-	-
CH-53E	0.21		5.73		0.29		3.02		2.69		-	
AH-1N	0.28		10.74		0.98		3.60		0.51		-	
UH-1N	0.06		1.43		0.65		0.72		0.27		-	
Total Sortie Emissions	1.77		106.09		17.07		33.26		35.63		3219.11	
Maintenance Emissions												
MV-22B	0.16	-	1.78	-	0.52	-	3.15	-	0.03	-	1257.97	-
F/A-18D	0.17	-	26.76	-	2.74	-	3.08	-	9.73	-	-	-
CH-53E	0.04		0.81		0.16		0.52		0.39		-	
AH-1N	0.00		0.23		0.04		0.05		0.01		-	
UH-1N	0.00		0.15		0.03		0.03		0.03		-	
Total Maintenance Emissions	0.37		29.72		3.50		6.83		10.20		1257.97	
Total Emissions	2.14		135.82		20.57		40.09		45.83		4,477.08	

Table I.3-13: Annual Increase in Aircraft Sortie Emissions at Andersen AFB

Activity	*Pollutant (TPY)*						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Aircraft carrier Airwings	0.4	91.6	4.7	4.7	8.6	26.6	NA
Based Aircraft LTO, touch and go, FCLP and GCA Box	1.8	106.1	17.1	17.1	33.3	35.6	3219.1
Based Aircraft Maintenance	0.4	29.7	3.5	3.5	6.8	10.2	1258.0
Total Operation	2.6	227.4	25.3	25.3	48.7	72.4	4,477.1

Note: CO_2 emissions are only available for MV-22 aircraft.

Table I.3-14: Aircraft Carrier Berthing Operational Emissions

Operational Activities 2016 and after	Pollutant (TPY)						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	CO_2
Aircraft Carrier Berthing	0.1	0.2	0.1	NA	1.1	1.3	NA
Transient Aircraft	0.4	91.1	4.6	8.4	26.2	0.4	NA
Total Operation	0.5	91.3	4.7	8.4	27.3	1.7	NA

3.3.2 Aircraft Operational Emissions from Aircraft Carrier Berthing

The Navy proposes to construct a new deep-draft wharf with shoreside infrastructure improvements in Apra Harbor, Guam to provide for a transient nuclear powered aircraft carrier. Up to 59 aircraft including strike, surveillance, control, and other logistic and combat aircraft, would either remain onboard the ship or fly to Andersen AFB. Two locations for siting the new wharf are considered under the proposed action: 1) Polaris Point (preferred), and 2) the Former Ship Repair Facility (SRF).

The Aircraft Carrier Berthing component of the proposed action requires operational activities that have the potential to generate air emissions. Specifically, operational emissions would result from the following activities:

- Operation of the aircraft carriers' on-board diesel generators.
- Aircraft carrier routine maintenance.
- Transient aircraft operations.
- Escort vessels operations.
- Operation of the tugboats that assist in navigating the aircraft carrier through the harbor.
- Operation of the on-road vehicles transporting the aircraft carrier crew.
- Operations of the on-road trucks transporting materials to and from aircraft carriers.

The emissions inventory for one aircraft carrier homeporting for six months was taken from a U.S. Navy study (U.S. Navy July 1999). This inventory was used to prorate the aircraft carrier berthing emissions based on an increase in aircraft carrier berthing days at Apra Harbor of 49 days.

Accompanying vessel and tugboat emissions were not considered in this analysis because these operations are a function of the number of aircraft carrier visits rather than of the number of berthing days. Because the number of aircraft carrier visits at Apra Harbor would not increase, no additional emissions from vessel and tugboat operations are anticipated.

The aircraft carrier berthing-related vehicle operations would be increased due to an increase in berthing days. However, the impacts from increased on-road vehicular trips are covered in the traffic-related air quality impact analysis discussed later in this study. Aircraft carrier berthing-related emissions from operations in 2014 and beyond are shown in Table I.3-25.

3.3.3 Aircraft Training Emissions

Five sites were considered on Guam for aviation training: Andersen AFB airfield, Northwest Field at Andersen AFB, Orote Airfield at Navy Main Base, Andersen South (including two improved helicopter landing pads), and the Naval Munitions Site. The types of aviation training and facility requirements associated with Marine Corps units that would relocate to Guam are listed in Table I.3-26. The minimum requirement for most training would be twice annually; however, the minimum Field carrier landing practice (FCLP) training requirement is 12 times annually. The majority of this training requirement would be met at Guam and surrounding airspace.

Table I.3-15: Aviation Training Types

Training Type		*Facility/Airspace Requirements*
FAM	Familiarization and Instrument Flight	Improved airfield with air rescue available. FAM is a daylight operation. Instrument flight is day and night.
FORM	Formation Flights	Flying in formation, often in Air Traffic Controlled Assigned Airspace (ATCAA) assigned by FAA. Also includes helicopter flying Visual Flight Rules (VFR) information. Day and night use.
CAL	Confined Area Landing	Ground space, helicopter landing zones in approx. 10 locations. Day and night.
TERF	Terrain Flights	1 or more routes in ATCAA assigned by FAA over varying terrain for day and night flights at 50 to 200 ft (15 to 61 m) above ground level.
EXT	External Loads	Both unimproved and improved LZs for day and night use. Unimproved LZs at remote sites. Ground access needed to pre-position external loads that cannot be carried across public roads or populated areas.
GTR	Ground Threat Reaction	Tactical flight maneuver area or route where ground based threat simulators can be placed. Air routes similar to TERF. Day and night. Includes training on Tinian that is addressed in Volume 3.
FCLP	Field Carrier Landing Practice	Simulated ship deck paved area. Day and night.
TAC	Tactics	Routes over water or land of at least 50 nm (93 km), for chaff, flares, and .50 cal machine gun engagement. Day and night. Includes training in CNMI that is addressed in the MIRC EIS/OEIS.
AG	Aerial Gunnery	Air-to-Ground gun munitions against ground targets. Day and night. Includes training in CNMI that is addressed in the MIRC EIS/OEIS.
HIE	Helicopter Insertion and Extraction	Fast rope, rappelling, helo-casting, and parachute operations in improved fields, drop zones, and water operating areas. Day and night
DM	Defensive Maneuvers	Airspace routes similar to TERF, but at higher altitude. Day and night.

Source: NAVFAC Pacific 2009.

The aircraft squadrons are proposed for basing at Andersen AFB North Ramp, in a separately constructed air facility. To reduce the operationally undesirable, simultaneous mix of fixed wing and rotary wing operations at Andersen AFB, proposed Marine Corps aviation training would primarily occur at the following sites rather than North Ramp: Northwest Field at Andersen AFB, Orote Airfield at Navy Main Base, Andersen South, and Naval Munitions Site.

In addition, aviation training would occur along proposed flight corridors and SUA within and offshore Guam and integrated with MIRC training operations. Specific aviation training proposals for Guam and surrounding airspace are as follows:

Marine Air Control Group Training (MACG). MACG training involves coordination of air command and control and air defense within the Marine Aircraft Wing.

Improved Airfield Training. FCLP and familiarization and instrument flight (FAM) training require improved airfields. Approximately training operations are conducted with each FAM sortie and five training operations with each FCLP sortie. Both are conducted during both day and night. On Guam, options for aviation training at an improved airfield are North Ramp and NWF, both at Andersen AFB.

Table I.3-27 provides an estimate of aviation training that would occur at each of these sites under the proposed action based on the minimum bi-annual training requirement for FAM and monthly training requirement for FCLP for aircrews associated with the proposed action.

Table I.3-16: Estimated Annual Training Sortie Activities at Improved Airfields

Location and Training Type	*Sortie-Ops by Aircraft Type*				*Total Annual Sortie-Ops*	*Duration/Sortie-Op(Minutes)*	*Duration of Sortie-Ops by Aircraft Type (Minutes)*				*Total Annual Sortie-Op Minutes*	*% Night*	*% Below 3,000ft AGL*	*Annual Freq. Training/Location(Days)*
	CH-53	*MV-22*	*AH-1*	*UH-1*			*CH-53*	*MV-22*	*AH-1*	*UH-1*				
Andersen AFB North Ramp														
FCLP	160	480	240	120	1,000	2	320	960	480	240	2,000	50%	100%	12-18
FAM	11	48	16	4	79	3	33	144	48	12	237	10%	100%	4-6
NWF														
FCLP	160	480	240	120	1,000	2	320	960	480	240	2,000	50%	100%	12-18
FAM	11	48	16	4	79	3	33	144	48	12	237	10%	100%	4-6

Training in Military Flight Corridors, Routes, or Tactical Navigation Area. Aviation training requirements requiring military flight corridors or routes include Terrain Flight (TERF), Ground Threat Reaction (GTR), and Defensive Maneuvering (DM). All four aircraft types associated with the proposed action conduct TERF, GTR, and DM training. Table I.3-28 provides an estimate of aviation training that would occur in designated airspace on Guam based on the minimum bi-annual training requirement for TERF, GTR, and DM for aircrews associated with the proposed action. In addition, sorties associated with the transport personnel from Andersen South North Ramp to NMS or Andersen South for maneuver training is also estimated in Table I.3-28 (as MAN-LFT).

Table I.3-17: Estimated Annual Training Sortie Activity in Military Flight Corridors, Routes, or Tactical Navigation Area on Guam Based on Minimum Training Requirements

Location and Training Type	*Sortie-Ops by Aircraft Type*				*Total Annual Sortie-Ops*	*Duration/Sortie-Op(Minutes)*	*Duration of Sortie-Ops by Aircraft Type (Minutes)*				*Total Annual Sortie-Op Minutes*	*% Night*	*% Below 3,000ft AGL*
	CH-53	*MV-22*	*AH-1*	*UH-1*			*CH-53*	*MV-22*	*AH-1*	*UH-1*			
TERF	16	48	24	12	100	90	1,440	4,320	2,160	1,080	9,000	10%	90%
GTR	16	48	24	6	94	90	1,440	4,320	2,160	540	8,460	10%	80%
DM	16	48	24	6	94	90	1,440	4,320	2,160	540	8,460	10%	80%
MAN-LFT	912	0	0	0	912	10	9,120	0	0	0	9,120	10%	80%

Landing zone training. Both improved and unimproved LZs are required to support training in Confined Area Landing (CAL), External Loads (EXT), and Helicopter Insertion Extraction (HIE). CAL training is required for all four aircraft types associated with the proposed action. EXT and HIE training is required for CH-53, UH-1, and MV-22, but not AH-1 aircraft. CAL requires approximately 10 LZs in various locations. All three types of training would include both day and night operations.

Table I.3-29 provides an estimate of aviation training that would occur at NWF, Andersen South, NMS, and Orote Airfield LZs based on the minimum bi-annual training requirement for CAL, EXT, and HIE for aircrews associated with the proposed action. In addition, sorties associated with the lifts for access to Andersen South and NMS for maneuver training are also estimated in Table I.3-29 (as MAN-LFT).

The emissions from aircraft training at existing airfields were estimated using the same methods and emission factors guidance described previously for Andersen AFB Aircraft Basing Operations. Annual emission rates are shown in Table I.3-30. The training flight sorties, as shown in Table I.3-31, and flight hours defined around each airfield were based on information provided above.

Table I.3-18: Estimated Annual Training Sortie Activity at Guam LZ Sites

Location and Training Type	Sortie-Ops by Aircraft Type				Total Annual Sortie-Ops	Duration/Sortie-Op(Minutes)	Duration of Sortie-Ops by Aircraft Type (Minutes)				Total Annual Sortie-Op Minutes	% Night	% Below 3,000ft AGL	Annual Freq. Training/Location(Days)
	CH-53	MV-22	AH-1	UH-1			CH-53	MV-22	AH-1	UH-1				
NWF														
CAL	20	60	30	15	125	2	40	120	60	30	250	10%	100%	2-3
EXT	20	60	0	15	95	2	40	120	0	30	190	10%	100%	2-3
HIE	24	72	0	18	114	2	48	144	0	36	228	10%	100%	2-3
Orote Airfield														
EXT	20	60	0	15	95	2	40	120	0	30	190	10%	100%	1-2
Andersen South														
CAL	20	60	30	15	125	2	40	120	60	30	250	10%	100%	2-3
EXT	13	40	0	10	63	2	27	80	0	20	127	10%	100%	2-3
HIE	24	72	0	18	114	2	48	144	0	36	228	10%	100%	2-3
MAN-LFT	720	0	0	0	720	2	1,440	0	0	0	1,440	10%	80%	90
NMS														
CAL	20	60	30	15	125	2	40	120	60	30	250	10%	100%	
EXT	13	40	0	10	63	2	27	80	0	20	127	10%	100%	1-2
MAN-LFT	192				192	2	384	0	0	0	384	10%	100%	12-18

Table I.3-19: Aircraft Training Emissions Rates

Aircraft	*Operation*	*Training Type*	*Emission Rates (lb/Op)**					
			CO	*CO2*	*NOx*	*HC*	*SO2*	*PM10*
H-53	Cruise	FAM, FORM, TERF, GTR, TAC, AG, DM	9.5	-	36.1	0.67	1.8	9.9
	Rocks-and-Block	EXT	1.97	-	7.52	0.24	0.36	1
	Carrier-Controlled Approach	FCLP	2.67	-	5.33	0.74	0.29	1.59
	Special Personnel Insertion and Extraction Rig	HIE	1.28	-	3.81	0.18	0.2	1.08
	Pad Landing	CAL	1.94	-	4.03	0.52	0.22	1.19
V-22	Cruise - Airplane mode (nacellas horizontal)	FAM, FORM, TERF, GTR, TAC, AG, DM	1.99	12258.4	53.82	0.04	1.53	6.04
	Field Carrier Landing Practice	FCLP	0.22	1119	4.61	0.003	0.14	0.55
	Rocks-and-Blocks	EXT	0.63	3081	12.25	0.01	0.38	1.52
	Confined Area Landing	HIE	0.29	1899	8.87	0.01	0.24	0.94
	Special Personnel Insertion and Extraction Rig	CAL	0.32	1693	6.93	0.01	0.21	0.83
AH-1	Cruise	FAM, FORM, TERF, GTR, TAC, AG, DM	8.96	-	4.72	0.48	0.34	3.57
	Touch-and-Go	EXT	0.54	-	0.25	0.03	0.02	0.19
	Pad Landing	CAL	0.69	-	0.32	0.03	0.02	0.25
	Mountain Pad	HIE	0.76	-	0.36	0.04	0.03	0.28
	Field Carrier Landing Practice	FCLP	0.79	-	0.32	0.04	0.02	0.26
UH-1	Cruise	FAM, FORM, TERF, GTR, TAC, AG, DM	0.7	-	4.01	0.09	0.28	2.91
	Rocks-and-Block	EXT	0.39	-	0.71	0.03	0.06	0.58
	Special Personnel Insertion and Extraction Rig	HIE	0.15	-	0.4	0.01	0.03	0.31
	Pad Landing	CAL	0.13	-	0.25	0.01	0.02	0.21
	Field Carrier Landing Practice	FCLP	0.25	-	0.25	0.02	0.02	0.22

Notes: Emission Rates are lb/hr for Cruise operations.
Source: AESO Memorandum Report Nos. 9822, Revision C, February 2000; 9824, Revision A, April 30, 1999; 9904, Revision A, May 3, 1999; 9946, Revision E, January 2001; 9960, Revision B, April 2000; 9961, July 1999; 9962, July 1999; 9965, Revision B, January 2001.

Table I.3-20: Annual Sortie-Ops by Training Airspace

Aircraft	Sortie -Ops	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft
FAM - Familiarization and Instrument Flight																					
		A AFB (North Ramp)				NWF				Tinian											
CH-53	32	33%	10.67	30	5%	33%	10.67	60	5%	33%	10.67	30	5%								
MV-22	144		48	30	5%		48	90	5%		48	30	5%								
AH-1	48		16	30	5%		16	60	5%		16	30	5%								
UH-1	12		4	30	5%		4	30	5%		4	30	5%								
FORM - Formation Flights																					
		Guam SUA				Tinian SUA															
CH-53	32	20%	6.4	30	5%	80%	25.6	60	5%												
MV-22	144		28.8	30	5%		115.2	90	5%												
AH-1	48		9.6	30	5%		38.4	60	5%												
UH-1	12		2.4	30	5%		9.6	30	5%												
CAL - Confined Area Landing																					
		NW FLD				ANDY S				NMS				TIN N							
CH-53	80	25%	20	90	75%	25%	20	90	75%	25%	20	90	75%	25%	20	90	75%				
MV-22	240		60	120	75%		60	120	75%		60	120	75%		60	120	75%				
AH-1	120		30	90	75%		30	90	75%		30	90	75%		30	90	75%				
UH-1	60		15	60	75%		15	60	75%		15	60	75%		15	60	75%				
TERF - Terrain Flights																					
		NMS				Tinian															
CH-53	32	50%	16	90	100%	50%	16	90	100%												
MV-22	96		48	120	100%		48	120	100%												
AH-1	48		24	90	100%		24	90	100%												
UH-1	24		12	60	100%		12	60	100%												
EXT - External Loads																					
		NW Field				Orote				ANDY S				NMS				Tinian			
CH-53	80	25%	20	90	100%	25%	20	90	100%	17%	13.33	90	100%	17%	13.33	90	100%	17%	13.33	90	100%
MV-22	240		60	120	100%		60	120	100%		40	120	100%		40	120	100%		40	120	100%
AH-1	120		30	90	100%		30	90	100%		20	90	100%		20	90	100%		20	90	100%
UH-1	60		15	60	100%		15	60	100%		10	60	100%		10	60	100%		10	60	100%
GTR - Ground Threat Reaction																					
		NMS				Rota/Tinian															
CH-53	32	50%	16	90	100%	50%	16	90	100%												
MV-22	96		48	120	100%		48	120	100%												

Aircraft	Sortie -Ops	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft	% Sortie -Ops	Sortie -Ops /Area	Min/ Sortie -Op	% < 3,000 ft
AH-1	48		24	90	100%		24	90	100%												
UH-1	12		6	60	100%		6	60	100%												
FFCLP - Field Carrier Landing Practice																					
		A AFB				NW Field				Orote											
CH-53	480	33%	160	90	100%	33%	160	90	100%	33%	160	90	100%								
MV-22	1440		480	120	100%		480	120	100%		480	120	100%								
AH-1	720		240	90	100%		240	90	100%		240	90	100%								
UH-1	360		120	60	100%		120	60	100%		120	60	100%								
TAC – Tactics																					
		GUAM MOA/Route				Tinian MOA/Route															
CH-53	32	50%	16	30	5%	50%	16	60	5%												
MV-22	144		72	30	5%		72	90	5%												
AH-1	48		24	30	5%		24	60	5%												
UH-1	12		6	30	5%		6	30	5%												
AG - Aerial Gunnery																					
		WA																			
CH-53	80	100%	80	30	5%																
MV-22	240		240	30	5%																
AH-1	120		120	30	5%																
UH-1	60		60	30	5%																
HIE - Helicopter Insertion and Extraction																					
		NWF				ANDY S															
CH-53	48	50%	24	30	5%	50%	24	60	5%												
MV-22	144		72	30	5%		72	90	5%												
AH-1	72		36	30	5%		36	60	5%												
UH-1	36		18	30	5%		18	30	5%												
DM - Defensive Maneuvers																					
		NMS				Tinian															
CH-53	32	50%	16	90	100%	50%	16	90	100%												
MV-22	96		48	120	100%		48	120	100%												
AH-1	48		24	90	100%		24	90	100%												
UH-1	12		6	60	100%		6	60	100%												

The annual aircraft training flight emissions are summarized in Table I.3-21.

Table I.3-21: Aircraft Training Flight Annual Emissions at Andersen AFB

Location	*Pollutant (TPY)*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	CO_2
North							
Northwest Field	0.1	0.5	0.4	0.4	2.4	0.1	920.2
Andersen AFB	0.1	1.1	0.6	0.6	3.2	0.3	479.5
Sub Total	0.2	1.6	1.0	1.0	5.6	0.4	1399.8
Central							
Andersen South	0.1	0.5	0.5	0.5	1.9	0.1	179.5
Apra Harbor							
Orote	0.1	0.4	0.4	0.4	2.0	0.1	361.0
South							
NMS	0.3	1.4	1.8	1.8	10.6	0.1	1883.8

Note: CO_2 emissions are only available for MV-22, CH-46, and C-130 aircraft and includes operations >3000 feet.

3.3.4 Marine Vessel Training Emissions

Marine vessel training operations at Apra Harbor and Tinian would result in an increase in pollutant emissions. These emissions were estimated using emission factors, load factors, and power levels obtained from:

- Final EIS/OEIS Southern California Range Complex (U.S. Navy 2008).
- Current Methodologies and Best Practices in Preparing Port Emission Inventories (USEPA January 2006)

Navy vessel criteria pollutant emissions were analyzed using the U.S. Navy (2008) emission factors for each power level. For emission factors given with multiple power levels, the average level was assumed. The vessels are assumed to operate at 100% capacity for each given power level emission factor. For greenhouse gas emissions in terms of CO_2 emissions from Navy vessel operations were estimated based on the fuel consumption related emission factors provided by the California Air Resources Board (CARB) (CARB, 2008). Fuel consumption for each ship was estimated first based on individual vessel's rated horsepower associated with each combustion source type and the forecasted running hours. Combustion source types include boilers used in the Amphibious Assault Ship and diesel engines used in all other vessels. The fuel to be consumed in gallons for each ship was then multiplied by the emission factor to determine the annual CO_2 level.

Barge emissions were analyzed using tugboat emission factors, load factor, and power levels presented in USEPA (January 2006). Based on the power levels presented, an average power level of 3,357 kW was assumed.

Estimated average traveling distances for each vessel were multiplied by the traveling speeds presented below to give a traveling running time.

- Open Ocean: 15.0 knots/hr
- Outer Apra Harbor: 10.0 knots/hr
- Inner Apra Harbor: 5.0 knots/hr
- Landing Craft: 6.0 knots/hr
- LCAC: 5.0 knots/hr

- Barge: 5.0 knots/hr

A total running time was calculated by adding any additional idling time that may occur. The marine vessel operational running times are presented in Table I.3-33. The total running time was then multiplied by the emission factor for each vessel. The marine vessel training operational emissions are presented in Table I.3-34. These emissions are considered to be the same for all action alternatives.

Table I.3-22: Marine Vessel Annual Operational Running Times

Marine Vessel Group	Ship Type	Annual Vessel Miles Traveled	One Way Trip Distance Breakdown		Annual Vessel Transit Distances			Ship/Boat Speeds				Ship/Boat Travel Running Time	Ship/Boat Idle Time	Total Running Time
			Outer Apra Harbor	Inner Apra Harbor	Open Ocean	Outer Apra Harbor	Inner Apra Harbor	Open Ocean	Outer Apra Harbor	Inner Apra Harbor	Landing Craft			
			Miles		Miles			Miles/hr				hr	hr	hr
Ships Carrying Amphibious Vehicles														
	Amphibious Assault Ship (LHD)	56	3	1.5	38	12	6	17.3	11.5	5.8	-	4.3	-	-
	Dock Landing Ship (LSD)	56	3	1.5	38	12	6	17.3	11.5	5.8	-	4.3	-	-
	Amphibious Transport Dock (LPD)	56	3	1.5	38	12	6	17.3	11.5	5.8	-	4.3	-	-
Amphibious Vehicles														
	Landing Craft, Air Cushion (LCAC)	1,280	-	-	-	-	-	5.8	-	-	-	222.46	0.18	222.6
	Amphibious Assault Vehicle (AAV)	64	-	-	-	-	-	-	-	-	6.9	9.3	-	-
Escort Combatant Ships														
	Guided Missile Cruiser (CG-47)	112	3	1.5	76	24	12	17.3	11.5	5.8	-	8.6	-	-
	Guided Missile Destroyer (DDG)	112	3	1.5	76	24	12	17.3	11.5	5.8	-	8.6	-	-
	Barge between Guam and Tinian	3,240	-	-	-	-	-	5.8	-	-	-	563.1	-	-

Table I.3-23: Marine Vessel Training Operational Emissions

Location	Marine Vessel Group	Ship Type	Annual Vessel Transits	Distance: Sea to Shore	Distance: Load-Unload	Annual Vessel Miles Traveled	Total Running Time (hr)	Emission Factors (lb/hr) SO_2	CO	PM	NO_x	VOC	CO_2	Emissions (tons/yr) SO_2	CO	PM	NO_x	VOC	CO_2
Apra Harbor	*Ships Carrying Amphibious Vehicles*																		
		Amphibious Assault Ship (LHD)	4	14	-	56	4.3	120.7	6.8	24.2	40.1	5.1	382469	0.26	0.01	0.05	0.09	0.01	820
		Dock Landing Ship (LSD)	4	14	-	56	4.3	32.8	1.8	6.6	10.9	1.4	13707	0.07	0.00	0.01	0.02	0.00	29
		Amphibious Transport Dock (LPD)	4	14	-	56	4.3	32.8	1.8	6.6	10.9	1.4	17279	0.07	0.00	0.01	0.02	0.00	37
	Amphibious Vehicles																		
		Landing Craft, Air Cushion (LCAC)	320	-	4	1,280	222.6	25.4	25.4	55.3	43.3	3.9	2910	2.83	2.83	6.16	4.82	0.43	324
		Amphibious Assault Vehicle (AAV)	16	-	4	64	9.3	0.1	0.6	0.3	3.8	0.2	166	0.00	0.00	0.00	0.02	0.00	1
	Escort Combatant Ships																		
		Guided Missile Cruiser (CG-47)	8	14	-	112	8.6	21.0	107.8	2.6	47.1	8.8	18955	0.09	0.46	0.01	0.20	0.04	81
		Guided Missile Destroyer (DDG)	8	14	-	112	8.6	17.9	104.0	2.5	48.9	8.0	23693	0.08	0.45	0.01	0.21	0.03	102
	Barge between Guam and Tinian																		
			24	-	135	3,240	563.1	0.6	2.5	0.3	13.0	0.3	208	0.20	0.81	0.10	4.20	0.09	29
Tinian	*Barge between Guam and Tinian*																		
			24	-	135	3,240	563.1	0.6	2.5	0.3	13.0	0.3	208	0.20	0.81	0.10	4.20	0.09	29
													Total	4.21	5.38	6.45	13.78	0.70	1452

The total annual vessel emissions during the training exercises around Apra Harbor are summarized in Table I.3-35.

Table I.3-24: Marine Vessel Training Annual Emissions

Type	*Pollutant (TPY)*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Ships Carrying Amphibious Vehicles	0.4	0.0	0.1	0.1	0.1	0.0	886
Amphibious Vehicles	2.8	2.8	6.2	6.2	4.8	0.4	325
Escort Combat Ships	0.2	0.9	0.0	0.0	0.4	0.1	183
Barges	0.2	0.8	0.1	0.1	4.2	0.1	29
Total	3.6	4.5	6.4	6.4	9.5	0.6	1423

Legend: NA = not available.

3.3.5 Training Vehicles Emissions

Training operations associated with the action alternative would generate emissions from ground vehicle training operations on both paved and unpaved roadways. Therefore, both vehicle exhaust emission and fugitive dust emission were estimated.

Vehicle Exhaust Emissions

Vehicle exhaust emissions were estimated using the USEPA Mobile6 emission factor model (USEPA August 2003) associated with each type of training vehicle, based on the fuel type, and at an assumed speed of 25 mph. Since Guam is exempt from using low sulfur fuel, the current typical diesel sulfur content (0.6%) was assumed in predicting both SO_2 and PM emissions from diesel-powered training vehicles. Emission factors for motor vehicles were determined for High Mobility Multipurpose Vehicle (HMMWV) that were modeled as light duty diesel trucks, light duty gasoline trucks, heavy duty diesel trucks, and diesel buses associated with default input parameters provided by the USEPA. Season sensitive emission factors were modeled for each given season (e.g., VOC and NO_x were analyzed for summer, and CO was analyzed for winter). The emission factors were then multiplied by the annual vehicle miles traveled for each type of vehicle during the training periods within specific training regions. Training vehicle operational exhaust emissions are shown in Table I.3-36 for activities on Guam and Tinian.

Vehicle Fugitive Dust Emissions

Fugitive dust emissions resulting from operations on unpaved roadways were estimated using the USEPA AP-42 (USEPA 1995) unpaved roads emission factor formula:

$$E = k(s/12)^a(S/30)^d - C$$

$$(M/0.5)^c$$

Table I.3-25: Training Vehicle Operational Exhaust Emissions

Activity Area	Activity	Vehicle Type	Annual VMT	Emission Factors (g/mi)							Vehicle Emissions (tons/yr)						
				SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Andersen South	AMVOC Course	HMMWV	2,700	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.006	0.002	0.001	0.000	0.002	0.001	1.776
	Convoy Course	HMMWV	28,125	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.058	0.025	0.006	0.005	0.020	0.015	18.50
	Vehicle-based Maneuver Training	HMMWV	25,313	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.052	0.023	0.005	0.005	0.018	0.014	16.65
	MOUT Maintenance	Heavy Truck	5,625	4.40	2.01	0.52	0.48	5.84	0.46	1417.8	0.027	0.012	0.003	0.003	0.036	0.003	8.791
		Light Truck	36,000	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.371	0.001	0.000	0.032	0.036	20.39
	Security Patrols	Light Truck	26,000	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.268	0.001	0.000	0.023	0.026	14.73
Guam Range Complex	Range Maintenance	Heavy Truck	11,250	4.40	2.01	0.52	0.48	5.84	0.46	1417.8	0.055	0.025	0.006	0.006	0.072	0.006	17.58
		Light Truck	72,000	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.001	0.741	0.002	0.001	0.065	0.073	40.79
	Security Patrols	Light Truck	11,250	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.116	0.000	0.000	0.010	0.011	6.373
Troop Transport	With increased MEU events - between Apra Harbor and Andersen South	Bus	1,800	7.28	2.96	0.73	0.70	10.87	0.34	2342.9	0.014	0.006	0.001	0.001	0.022	0.001	4.649
		HMMWV	300	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.001	0.000	0.000	0.000	0.000	0.000	0.197
		Light Truck	120	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.001	0.000	0.000	0.000	0.000	0.068
	Between NCTS Finegayan and Andersen South	HMMWV	7,425	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.015	0.007	0.001	0.001	0.005	0.004	4.885
		Bus	2,475	7.28	2.96	0.70.	0.73	10.87	0.34	2342.9	0.020	0.008	0.002	0.002	0.030	0.001	6.392
NMS Access	Maneuver Area Access Option 1	Heavy Truck	19	4.40	2.01	0.52	0.48	5.84	0.46	1417.8	0.000	0.000	0.000	0.000	0.000	0.000	0.030
		Light Truck	144	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.001	0.000	0.000	0.000	0.000	0.082
		HMMWV	192	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.000	0.000	0.000	0.000	0.000	0.000	0.126
	Maneuver Area Access Option 2	Heavy Truck	48	4.40	2.01	0.52	0.48	5.84	0.46	1417.8	0.000	0.000	0.000	0.000	0.000	0.000	0.075
		Light Truck	360	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.004	0.000	0.000	0.000	0.000	0.204
		HMMWV	480	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.000	0.000	0.000	0.000	0.000	0.000	0.316
	Maneuver Area Access Option 3	Heavy Truck	120	4.40	2.01	0.52	0.48	5.84	0.46	1417.8	0.000	0.000	0.000	0.000	0.001	0.000	0.188
		Light Truck	900	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.009	0.000	0.000	0.001	0.001	0.510
		HMMWV	1,200	1.86	0.81	0.18	0.16	0.63	0.49	596.8	0.000	0.001	0.000	0.000	0.001	0.001	0.789
Tinian	West Field to Bivouac Area	HMMWV	10	0.16	0.81	0.18	0.16	0.63	0.49	596.8	0.000	0.000	0.000	0.000	0.000	0.000	0.007
		Bus	40	0.70	2.96	0.73	0.70	10.87	0.34	2342.9	0.000	0.000	0.000	0.000	0.000	0.000	0.103
	Bivouac Area to Ranges	Bus	128	0.70	2.96	0.73	0.70	10.87	0.34	2342.9	0.001	0.000	0.000	0.000	0.002	0.000	0.331
	Bivouac Area to San Jose	Bus	256	0.70	2.96	0.73	0.70	10.87	0.34	2342.9	0.002	0.001	0.000	0.000	0.003	0.000	0.661
	Range Maintenance	Heavy Truck	125	0.48	2.01	0.52	0.48	5.84	0.46	1417.8	0.001	0.000	0.000	0.000	0.001	0.000	0.195
		Light Truck	400	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.004	0.000	0.000	0.000	0.000	0.227
	Security Patrols	Light Truck	800	0.01	9.34	0.03	0.01	0.81	0.92	513.9	0.000	0.008	0.000	0.000	0.001	0.001	0.453
	Total										0.258	1.627	0.031	0.026	0.345	0.195	165.62

Where:

k, a, c, and d are empirical constants

E = size specific emission factor (lb/VMT)

s = surface material silt content (%)

M = surface material moisture content (%)

S = mean vehicle speed (mph)

C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

A material silt content of 3.63% for shoreline soils in Salton Sea, CA, as presented in the AP-42 backup document Analysis of the Fine Fraction of Particulate Matter in Fugitive Dust, (WRAP October 2005), was used for this analysis because the type of soil is similar to what is found in the Guam training area roads. The analysis also assumed average moisture content for public roads of 6.52% and a vehicle speed of 25 mph. The emission factors were then multiplied by the annual vehicle miles traveled for each type of vehicle during the training periods within specific training regions. The training vehicle operational fugitive dust emissions are shown in Table I.3-37.

3.3.6 On Base Vehicle Operational Emissions

On base emissions will occur from commuter vehicles traveling onto each base. The on base vehicle emissions were estimated using the same method described for the training vehicle operational emissions. Only exhaust emissions were analyzed since all roadways will be paved.

Average daily traffic trips were analyzed at each gate for each base. To be conservative, at each base the gate with the maximum amount of daily trips was chosen. Average annual vehicle miles traveled for each type of vehicle were estimated based on a 365 day per year work schedule. The different vehicle types traveling through the gates were analyzed with the following vehicle class mix as summarized in Attachment A in the Guam Implementation Strategy document:

- Class 1, 2, 3 – Motorcycles, cars, pickups, cars/pickups with trailers: 91.4%
- Class 4, 5, 6, 7 – Single unit trucks including buses: 7.8%
- Class 8 – Multi unit truck with four axles: 0.5%
- Class 9 and larger – Multi unit trucks with five or more axles: 0.3%

The estimated on base vehicle emissions are shown in Table I.3-38. On base emissions will occur from commuter vehicles traveling onto each base. The on base vehicle emissions were estimated using the same method described for the training vehicle operational emissions. Only exhaust emissions were analyzed since all roadways will be paved.

Table I.3-26: Training Vehicle Fugitive Dust Operational Emissions

Activity Area	Activity	Vehicle Type	Annual VMT	Emission Factors (lb/VMT)		Emissions (tons/yr)	
				PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Andersen South	MOUT Maintenance	Heavy Truck	5,625	0.297	0.0294	0.835	0.083
		Light Truck	36,000	0.297	0.0294	5.346	0.529
	Security Patrols	Light Truck	26,000	0.297	0.0294	3.861	0.382
Guam Range Complex	Range Maintenance	Heavy Truck	11,250	0.297	0.0294	1.671	0.165
		Light Truck	72,000	0.297	0.0294	10.691	1.058
	Security Patrols	Light Truck	11,250	0.297	0.0294	1.671	0.165
NMS Access	Maneuver Area Access Option 1	Heavy Truck	19	0.297	0.0294	0.003	0.000
		Light Truck	144	0.297	0.0294	0.021	0.002
		HMMWV	192	0.297	0.0294	0.029	0.003
	Maneuver Area Access Option 2	Heavy Truck	48	0.297	0.0294	0.007	0.001
		Light Truck	360	0.297	0.0294	0.053	0.005
		HMMWV	480	0.297	0.0294	0.071	0.007
	Maneuver Area Access Option 3	Heavy Truck	120	0.297	0.0294	0.018	0.002
		Light Truck	900	0.297	0.0294	0.134	0.013
		HMMWV	1,200	0.297	0.0294	0.178	0.018
Tinian	West Field to Bivouac Area	HMMWV	10	0.297	0.0294	0.001	0.000
		Bus	40	0.297	0.0294	0.006	0.001
	Bivouac Area to Ranges	Bus	128	0.297	0.0294	0.019	0.002
	Range Maintenance	Heavy Truck	125	0.297	0.0294	0.019	0.002
		Light Truck	400	0.297	0.0294	0.059	0.006
	Security Patrols	Light Truck	800	0.297	0.0294	0.119	0.012
Total						24.812	2.455

Table I.3-27: On Base Vehicle Emissions

Activity Area	Gate	FHWA Vehicle Classification	Annual VMT	Emission Factors (g/mi)							Vehicle Emissions (tons/yr)						
				SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
North ROI Marine Base	C8	1, 2, 3	36,411,780	0.007	5.13	0.025	0.011	0.23	0.31	368.0	0.273	205.903	0.991	0.450	12.603	9.352	14770.46
		4, 5, 6, 7	3,107,351	1.869	0.37	0.127	0.113	0.11	0.13	598.6	6.401	1.257	0.436	0.388	0.438	0.384	2050.37
		8	199,189	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.962	0.061	0.079	0.073	0.062	0.117	309.81
		9 and larger	119,514	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.577	0.037	0.047	0.044	0.037	0.070	185.89
Andersen AFB	C1	1, 2, 3	8,241,168	0.007	5.13	0.025	0.011	0.23	0.31	368.0	0.062	46.603	0.224	0.102	2.852	2.117	3343.03
	C2	4, 5, 6, 7	703,294	1.869	0.37	0.127	0.113	0.11	0.13	598.6	1.449	0.285	0.099	0.088	0.099	0.087	464.06
	C3	8	45,083	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.218	0.014	0.018	0.017	0.014	0.027	70.12
	C8	9 and larger	27,050	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.131	0.008	0.011	0.010	0.008	0.016	42.07
Central ROI Andersen South	C1	1, 2, 3	2,245,863	0.007	5.13	0.025	0.011	0.23	0.31	368.0	0.017	12.700	0.061	0.028	0.777	0.577	911.04
	C2	4, 5, 6, 7	191,660	1.869	0.37	0.127	0.113	0.11	0.13	598.6	0.395	0.078	0.027	0.024	0.027	0.024	126.47
	C3	8	12,286	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.059	0.004	0.005	0.005	0.004	0.007	19.11
	C8	9 and larger	7,372	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.036	0.002	0.003	0.003	0.002	0.004	11.47
Barrigada	C1	1, 2, 3	10,215,138	0.007	5.13	0.025	0.011	0.23	0.31	368.0	0.077	57.765	0.278	0.126	3.536	2.624	4143.78
	C2	4, 5, 6, 7	871,751	1.869	0.37	0.127	0.113	0.11	0.13	598.6	1.796	0.353	0.122	0.109	0.123	0.108	575.22
	C3	8	55,882	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.270	0.017	0.022	0.020	0.017	0.033	86.92
	C8	9 and larger	33,529	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.162	0.010	0.013	0.012	0.010	0.020	52.15
Naval Base & Polaris Point	Total	1, 2, 3	1,506,249	0.007	5.13	0.025	0.011	0.23	0.31	368.0	0.011	8.518	0.041	0.019	0.521	0.387	611.01
		4, 5, 6, 7	128,542	1.869	0.37	0.127	0.113	0.11	0.13	598.6	0.265	0.052	0.018	0.016	0.018	0.016	84.82
		8	8,240	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.040	0.003	0.003	0.003	0.003	0.005	12.82
		9 and larger	4,944	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.024	0.002	0.002	0.002	0.002	0.003	7.69
South ROI Naval Ordnance	Total	1, 2, 3	145,120	0.007	5.13	0.025	0.011	0.23	0.31	368.0	0.001	0.821	0.004	0.002	0.050	0.037	58.87
		4, 5, 6, 7	20,641	1.869	0.37	0.127	0.113	0.11	0.13	598.6	0.043	0.008	0.003	0.003	0.003	0.003	13.62
		8	1,852	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.009	0.001	0.001	0.001	0.001	0.001	2.88
		9 and larger	1,429	4.382	0.28	0.360	0.332	0.53	0.28	1411.0	0.007	0.000	0.001	0.001	0.000	0.001	2.22

On base annual commuting vehicle emissions were estimated using the methodology presented above and are summarized in Table I.3-39.

Table I.3-28: On Base Vehicle Annual Emissions within Andersen AFB

Location	*Pollutant (TPY)*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	CO_2
On Base Commuting Vehicle Emissions							
North							
Finegayan	8.2	207.3	1.6	1.0	9.9	13.1	17,316.5
Andersen AFB	1.9	46.9	0.4	0.2	2.2	3.0	3,919.3
Sub Total	10.1	254.2	1.9	1.2	12.2	16.1	21,235.8
Central							
Andersen South	0.5	12.8	0.1	0.1	0.6	0.8	1,068.1
Barrigada	2.3	58.1	0.4	0.3	2.8	3.7	4,858.1
Sub Total	2.8	70.9	0.5	0.3	3.4	4.5	5,926.1
Apra Harbor							
Naval Base & Polaris Point	0.3	8.6	0.1	0.0	0.4	0.5	716.3
South							
NMS	0.1	0.8	0.0	0.0	0.0	0.1	77.6

3.3.7 Off Base On-road Vehicle Operational Emissions and Impact

Air quality impacts would also result from the provision of on-road vehicle operations and roadway constructions associated with the proposed action. Four alternatives, Alternatives 1, 2, 3, and 8, described previously are considered for the proposed development of Marine Corps Main Cantonment Area functions.

Potential air quality impacts associated with on-road vehicle and roadway constructions are analyzed through:

- Microscale carbon monoxide (CO) concentration modeling.
- Potential particulate matter (PM) evaluation.
- Roadway construction emissions forecasts for criteria pollutants.
- Vehicle air toxic pollutants evaluation.
- Mesoscale vehicular emissions forecast for criteria pollutants.

3.3.7.1 METHODOLOGY

Microscale CO Impact Modeling

Carbon monoxide (CO) exhaust is one of the major concerns associated with on-road vehicle operations. CO is considered a site-specific pollutant with higher concentrations found adjacent to roadways, especially near congested, signalized intersections. Mobile source CO air quality impacts are typically evaluated through a microscale analysis of traffic-related emissions at selected intersections. Procedures outlined by USEPA in *A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections* (USEPA September 1995) and *Mobile6 User's Guide* (USEPA August 2003) were used to perform a microscale analysis of localized traffic-related CO concentrations for this study.

The modeling analysis includes estimates of emission factors and predictions of CO concentrations for selected intersections. A screening evaluation was performed to identify which intersections within the project area are most congested and would be most affected by the build alternatives. Sites were considered to fail the screening evaluation if the level of service (LOS)[i] decreases below D in one of the build alternatives as compared to the no-action alternative, or if the delay and/or volume increase from the no-action to build alternatives scenario along with an LOS below D. CO impacts were estimated for receptor locations during weekday AM and PM peak periods.

Microscale air quality modeling was performed using the most recent version of the USEPA mobile source emission factor model (MOBILE6.2) (USEPA August 2003) and the USEPA's CAL3QHC (Version 2.0) (USEPA November 1992a). These air quality dispersion models were used to estimate future no-action (i.e., without the proposed project) and future build (i.e., with the proposed project) CO levels at selected locations in the project area. CO vehicular emissions were first estimated using the USEPA MOBILE 6.2 vehicular emission factor model (USEPA October 2002) that provides current and future estimates of emissions from highway motor vehicles by incorporating information on basic emission rates, realistic driving patterns, separation of start and running emissions, correction factors, and fleet.

These results were then input into CAL3QHC predict CO from motor vehicles at roadway intersections USEPA November 1992b). This model assumes that the dispersion of pollutants downwind of a pollution source follow a normal distribution from the center of the pollution source.

Different emission rates occur when vehicles are stopped (idling), accelerating, decelerating, and moving at different average speeds. CAL3QHC simplifies these different emission rates into two components:

- Emissions when vehicles are stopped (idling) during the red phase of a signalized intersection.
- Emissions when vehicles are in motion during the green phase of a signalized intersection.

The CAL3QHC air quality dispersion model has undergone extensive testing by USEPA and has been found to provide reliable estimates of inert (nonreactive) pollutant concentrations resulting from motor vehicle emissions.

Particulate Matter

On March 10, 2006, the USEPA issued a Final Rule regarding the localized or "hot-spot" analysis of particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and particulate matter less than 10 microns in diameter (PM_{10}) (CFR 2006). This rule requires that $PM_{2.5}$ hotspot analysis be performed only for transportation projects with significant diesel traffic in areas not meeting $PM_{2.5}$ air quality standards. The project area is classified as an attainment area for PM_{10} and $PM_{2.5.}$

The first step in this analysis is a determination as to whether the project is classified as one of air quality concern. A PM_{10} and/or $PM_{2.5}$ hot-spot analysis should be conducted if the project is determined to be a project of air quality concern, defined in 40 CFR 93.123(b)(1) as:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

(ii) Projects affecting intersections that are at Level-of-Service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Examples of projects of air quality concern that would be covered by 40 CFR 93.123(b)(1)(i) and (ii) include:

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) where 8% or more of such AADT is diesel truck traffic;
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal;
- Expansion of an existing highway or other facility that affects a congested intersection (operated at LOS D, E, or F) that has a significant increase in the number of diesel trucks; and
- Similar highway projects that involve a significant increase in the number of diesel transit buses and/or diesel trucks.

Roadway ADTs and truck percentage were used to determine if the project was one of air quality concern.

Roadway Construction Emissions

In contrast to vehicle operational activities, construction activities are usually of short duration and produce only temporary air quality effects. However, the cumulative impacts of large-scale construction activities occurring over many years could cause adverse localized and regional air quality effects. To determine the temporary air quality impacts arising from roadway construction, a detailed construction emissions analysis was conducted. Using the estimated project schedule, along with typical equipment requirements for specific tasks, emission burden from construction activities were estimated for CO, NOx, PM_{10}, $PM_{2.5}$, SO_2 and GHG emissions in terms of CO_2 Since construction emissions would also result from other proposed activities associated with the proposed action, roadway construction related emissions are addressed separately.

Mobile Source Air Toxics (MSATs)

The USEPA 2001 Mobile Source Air Toxic (MSAT) Rule identified 21 air toxic pollutants as MSATs. USEPA identified six of the 21 pollutants as of greatest concern due to their high relative emissions and risk and because state agencies have indicated that these pollutants are major mobile source pollutants of concern. These six pollutants became known as the “priority MSATs” as designated by the FHWA and include acetaldehyde, acrolein, benzene, 1-3 butadiene, formaldehyde, and diesel particulate matter plus diesel exhaust organic gases (DPM+DEOG). These priority MSATs are subject to change based on improved understanding of ambient levels and health effects (e.g., see the MSAT rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 71, No. 60, page 15813 and 15814, March 29, 2006).

In the 1999 National Air Toxics Assessment (NATA), released in 2006 (USEPA 1999), USEPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk. These are acrolein, benzene, 1,3- butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future USEPA rules.

Health effects data used in this assessment comes from the NATA, which is an ongoing comprehensive evaluation of air toxics in the U.S. NATA assessments use general information about sources to develop estimates of risks which are more likely to overestimate impacts than underestimates them (USEPA 2009d). NATA provides estimates of the risk of cancer and other serious health effects from breathing (inhaling) air toxics in order to inform both national and more localized efforts to identify and prioritize air toxics, emission source types and locations which are of greatest potential concern in terms of contributing to population risk. Assessments include estimates of cancer and non-cancer health effects based on chronic exposure from outdoor sources, including assessments of non-cancer health effects for diesel PM.

As part of the National Environmental Policy Act (NEPA) process, air toxics require review and evaluation as they could affect the quality of the human environment. The FHWA issued an Interim Guidance Update (FWHA 2009) regarding MSAT analysis for NEPA documentation. In this guidance the FHWA developed a tiered approach, which includes the following three levels:

- Tier 1 – No analysis for projects with no potential for meaningful MSAT effects. These projects include:
  - Projects qualifying as a categorical exclusion under 23 CFR 771.117(c)
  - Projects exempt under the CAA Conformity Rule under 40 CFR 93.126
  - Other projects with no meaningful impacts on traffic volumes or vehicle mix
- Tier 2 – Qualitative analysis for projects with low potential MSAT effects
- Tier 3 – Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. These projects include:
  - Projects that would create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel PM in a single location
  - Projects that would create new or add significant capacity to urban highways, such as interstates, urban arterials, or urban collector-distribution routes with traffic volumes where the average annual daily traffic (AADT) is projected to be in the range of 140,000 to 150,000 vehicles or greater by the design year
  - Projects located in proximity to populated areas or in rural areas, in proximity to concentrations of sensitive populations (i.e., schools, nursing homes, hospitals).

Using this approach, an initial MSAT analysis for this project indicated that it would have a low potential for MSAT effects (i.e., Tier 2) (Parsons Brinkerhoff 2010). However, USEPA requested that an MSAT analysis based on the methodology described in the research report "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" prepared for the American Association of State Highway and Transportation Officials (ASHTO) (ICF International 2007) be performed. Given the unusual scale of the proposed relocation as compared to other Navy actions and to accommodate USEPA's request as part of the NEPA disclosure process, this additional MSAT analysis was performed (Parsons Brinkerhoff 2010). As shown in Table I.3-40, the project is predicted to increase daily vehicle miles traveled (VMT) by 18% and associated regional emissions from 18% to 19% under Alternative 1. This is considered a significant increase in traffic for the project area.

Table I.3-29: Daily Regional Emission Burdens (TPY) for Alternative 1

Scenario	*VMT*	*Speed*	*Emission Burden (TPY)*						
			CO	**NOx**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**CO_2**
2030 No-Action Alternative	3,535,224	28.6	13,388	478	801	78	57	562	80,498,6
2030 Alternative 1	4,160,544	28.0	15,813	566	951	91	67	661	94,687,2
Percent Change from No-Action			18%	18%	19%	18%	18%	18%	18%

Legend: CO = carbon monoxide; VOC = volatile organic compounds; $PM_{2.5}$= particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; TPY = tons per year; NOx = nitrogen oxides; VMT = vehicle miles traveled.

FHWA requires quantitative emissions analysis for projects that involve new or additional capacity on roadways where the traffic volume will be 140,000 to 150,000 AADT. The 2030 average daily traffic (ADT) estimates for the three most traveled roadways under Alternative 1 are shown in Table I.3-41Table I.3-30. Since the ADTs are less than 140,000 for the design year, a quantitative MSAT analysis (Tier 3) is not required, but was nonetheless performed, as requested by USEPA (see Attachment B) and as described in this section.

Table I.3-30: Average Daily Traffic for Major Roadways, Alternative 1

Roadway	*Alternative 1 No Build*	*Alternative 1 Build*
Route 1	95,600	95,600
Route 8	58,500	58,600
Route 18	70,500	70,500

Information that is Unavailable or Incomplete

Evaluating the environmental and health impacts from MSATs on a proposed roadway project involves several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then a final determination of health impacts based on the estimated exposure. Each of these steps is associated with technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of the proposed action as follows:

- **Emissions**. The USEPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of roadway projects.
- **Dispersion**. The tools to predict how MSATs disperse are also limited. USEPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of CO to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific roadway project locations across an urban area to assess potential health risk.
- **Exposure Levels and Health Effects**. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year (lifetime or chronic) cancer assessments, particularly because

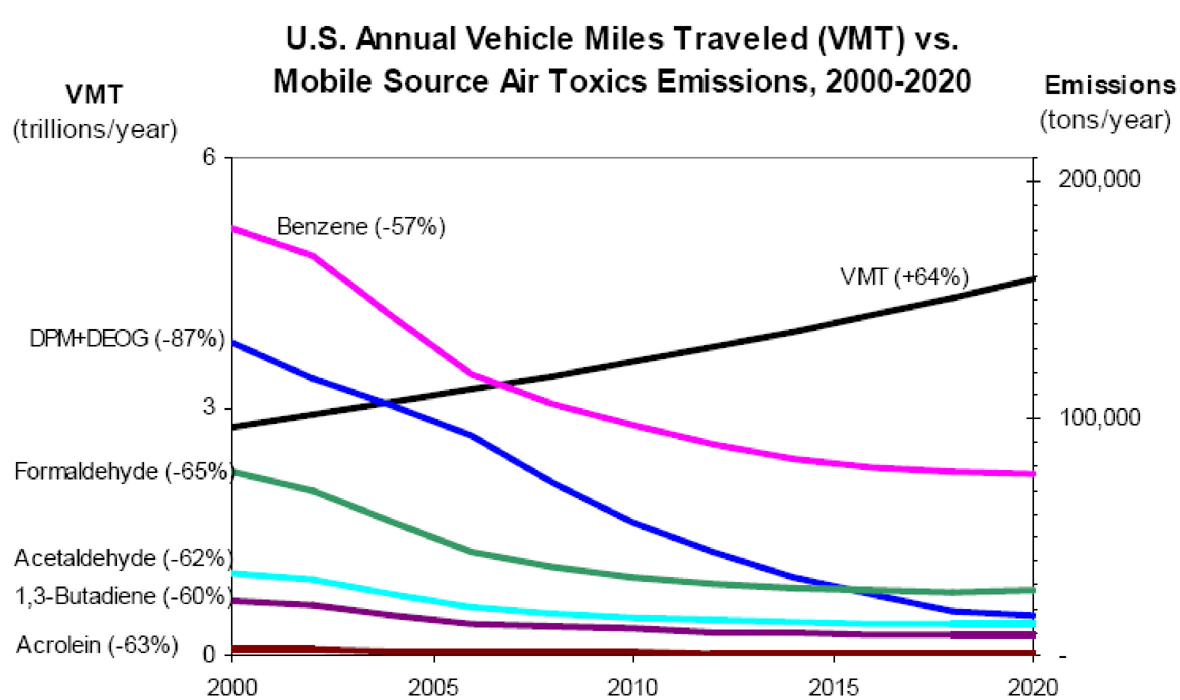
unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology, which affects emissions rates, over a 70-year period.

Emissions would likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57% to 87% between 2000 and 2020 (Figure I.3-4). Local conditions on Guam may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures; however, the magnitude of the USEPA-projected reductions is so great that MSAT emissions are likely to be lower in the future in nearly all cases.

Methodology

The methodology for MSAT analysis in the 2007 AASHTO report consists of a decision tree keyed to a set of policy-related questions to identify the appropriate level of analysis based on project information, potential community impact, and the public's level of concern. The policy-related questions are keyed to technical questions which identify the appropriate level of analysis based on health risk considerations. The following summarizes the levels of analysis in this alternate MSAT analysis.

- Level 1 – no review required (Projects that fall under a categorical exclusion)



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: *Highway Statistics 2000*, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM +DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

Figure I.3-2: Projected MSAT Emissions and Traffic Volumes (2000-2020)

- Level 2 – qualitative analysis recommended (Design activity less than 40,000 AADT for an intersection, or less than 100,000 AADT for an arterial, or less than 750 idling vehicle-hours per day for heavy duty diesel vehicles, or is a new or expanded intermodal facility)

- Level 3 – Level 2 plus quantitative emissions analysis (Design activity above those as listed in Level 2; MSAT exposure not identified as a concern during scoping process; no increase in sensitive population in proximity to MSAT emissions)
- Level 4 – Level 3 plus dispersion modeling to estimate concentration and risk from proposed action (Design activity above those as listed in Level 2; MSAT exposure identified as a concern during scoping process; increase in sensitive population in proximity to MSAT emissions; insufficient information on nearby population and human activity levels)
- Level 5 – Level 4 plus population activity pattern analysis to estimate exposure risk (Design activity above those as listed in Level 2; MSAT exposure identified as a concern during scoping process; increase in sensitive population in proximity to MSAT emissions; available information on nearby population and human activity levels)

To determine the level of analysis required for this project, a Level 4 analysis was performed based on the following decision points:

- The project is not a categorical exclusion (Level 1)
- Several intersections have AADTs over 40,000 under the alternatives (Level 2)
- MSATs were raised as a concern (Level 3).

The Level 4 analysis conducted estimated whether the incremental health-related risk associated with the proposed project would exceed the following cancer and non-cancer thresholds:

- A maximum total incremental carcinogenic risk from the exposure to all identified pollutants of 10 in a million (10^{-6}) and
- A maximum total incremental non-carcinogenic Hazard Index (HI) risk from the exposure to all identified pollutants of 1.

The analysis focused on operational emissions rather than construction phase emissions, because health-related risks for this analysis are based on long-term exposure. As the roadway construction phase of this project is temporary by nature and will be occurring at any given location for a relatively short period of time, the application of lifetime exposure rates are not justified (Parsons Brinkerhoff 2010).

It should be noted that the difference between the FHWA Interim Guidance and the method based on the AASHTO report is the criteria for when a quantitative analysis is required. The method based on the AASHTO report has a lower threshold in terms of traffic volumes and includes consideration of emissions from idling heavy duty diesel trucks.

The traffic forecasts discussed in the Final EIS, Volume 6, Chapter 4.2.2 and the future sensitive land use condition along the roadway network were used to determine the level of the analysis that would be applicable for the alternate analysis based on the AASHTO report as requested by the USEPA. Based on this data, it was determined that a Level 4 analysis would be conducted. As discussed with USEPA and FHWA, the maximum potential adverse effect intersections chosen for detailed CO analysis were analyzed to determine MSAT impacts along with the worst-case freeflow site. MSAT emission factors were estimated using USEPA's MOBILE6.2 emission factor program (USEPA October 2002). CAL3QHC dispersion modeling (USEPA November 1992a) was conducted using maximum potential adverse effect meteorology to estimate acute (short-term) impacts. These 1-hour values were then converted, using conservative traffic and meteorological persistence factors, to annual values in order to estimate annual impacts.

The MSAT analysis predicted the concentration levels at sidewalks near the most congested intersections. The actual neighborhood receptors would be substantially below the levels predicted at these hot spots. Cumulative localized effects from traffic-related mobile sources and power plants are typically negligible since stationary power plants are not usually located immediately adjacent to congested intersections where mobile source impact could be of concern. Therefore, the worst-case condition analyzed in this EIS for respective source categories is both source- and site-specific. The areas with potential exposure to multiple project sources would be unlikely to have impacts exceeding the worst-case levels already predicted around individual source category (i.e., a power plant or a heavily congested traffic intersection).

Human Health Risk Assessment Methodology

The procedures to estimate inhalation exposure concentration, hazard index, and cancer risk of toxic pollutants are outlined in the USEPA Human Health Risk Assessment Protocol (USEPA 2005), which is a guideline that can be used to perform health risk assessment for individual compounds with known health effects to determine the level of health risk posed by an increased ambient concentration of that compound at a potentially sensitive receptor. The derived health risk values from USEPA's Integrated Risk Information System (IRIS) (USEPA 2010) were used in this analysis to determine the total risk posed by the release of multiple MSATs.

Based on the analyses conducted for this project (Parsons Brinkerhoff 2010), none of the alternatives are anticipated to have significant MSAT impacts, as detailed in the following sections. There are several uncertainties associated with the analysis, but due to conservative assumptions, predicted risks are likely overestimated, but still well below target levels. The mesoscale vehicular and roadway construction emissions of criteria pollutants as well as GHG emissions in terms of CO_2 emissions were also considered through an estimate of vehicular emissions on the affected roadway system on Guam and construction equipment emissions during roadway construction. GHG emissions in terms of CO_2 Eq is presented in Volume 7 and in Section 4.4 of this appendix for all proposed alternatives, as these emissions are evaluated on a global or regional, rather than local level.

Mesoscale Emissions for Criteria Pollutants

Vehicular criteria emissions on a meso-scale (regional) basis were estimated using the USEPA MOBILE 6.2 vehicular emission factor model (USEPA October 2002) that provides current and future estimates of emissions from highway motor vehicles by incorporating information on basic emission rates, realistic driving patterns, separation of start and running emissions, correction factors, and fleet. The forecasted roadway traffic VMT under both conditions with and without the proposed action were used in association with Mobile 6.2 predicted emissions factors in order to determine the meso-scale emissions burden under the proposed action and are presented for the four alternatives.

3.3.7.2 ALTERNATIVE 1

Mesoscale Emissions Burden

For Alternative 1, the meso-scale regional emissions are predicted to increase in the range of 18% to 19%, as compared to the no-action alternative. This is primarily due to the estimated 18% increase in VMT under both alternatives as shown in Table I.3-41.

North - Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-42. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million (1 x 10^{-5}). Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-31: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 1, North Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/28	1.60 x10^{-6} / 0.41 x10^{-6}	1.00 x10^{-6} / 0.03 x10^{-6}	10 in a million (1 x 10^{-5})	0.19 / 0.05	0.12 / 0.00	1
Route 9/Andersen AFB North Gate	1.53 x10^{-6}	0.32 x10^{-6}		0.20	0.04	

[1] Indicates increase or decrease from No Build condition.

The criteria to determine if the project is one of air quality concern regarding particulate matter were applied and evaluated as follows:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.

  The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 1 are provided in Table I.3-43. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

  The largest increase in AADT for the roadways presented in Table I.3-43 is predicted to occur on Route 3 South of Route 28 in 2030. By applying a 2% truck percentage, the largest daily increase of 13,200 vehicles would result in a daily increase of 264 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-32: Average Daily Traffic for Major Roadways in North Project Section under Alternative 1

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 3 and North Commercial Gate	0	66,900	NA	0	45,900	NA
Route 3 South of Route 28	11,499	53,100	362 %	12,070	34,000	182%

- Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

  The proposed project is expected to affect intersections with a LOS of D, E or F. However, the effect on LOS due to the project options is due to an overall increase in volumes rather than a significant increase in diesel vehicles.

- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

  The project does not involve bus and rail terminals.

- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.

  The project does not involve bus and rail terminals.

- Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

  The area is classified as attainment.

Based on the above analysis, the project does not qualify as a project of air quality concern. A detailed discussion is provided in Attachment B.

Microscale CO Impact Analysis and Construction Emissions Estimate

North – Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project examining each ROI.As shown in Table I.3-44, 10 North ROI locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Five of these locations failed the screening criteria. The Route 1/28 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 9/Andersen Air Force Base (AFB) North Gate intersection was also chosen for analysis due to the extremely high delay predicted in the build scenario and the predicted high volumes at this location. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-33: Screening Analysis Locations – North, Alternative 1

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,485	C	22.5	3,525	D	52.2
Route 1/29	3,675	F	87.6	2,970	E	60.5	3,550	E	65.5	3,400	E	67.7
Route 1/28	**5,700**	**F**	**226.2**	**6,050**	**F**	**157.7**	**6,600**	**F**	**216.8**	**7,050**	**F**	**104.5**
Route 3/3A	875	A	9.5*	880	B	10.1*	910	B	11.6*	2,660	F	79.0*
Route 3/28	1,904	B	17.8	2,070	C	21.4	3,990	C	26.0	4,210	D	36.9
Route 15/29	1,760	F	****	1,575	F	683.5*	1,860	C	27.7	1,830	C	25.4
Route 3/ North (Commercial) Gate**	1,010	C	21.4*	970	C	15.7*	2,455	B	12.5	2,855	C	28.3
Route 3/ South (Main) Gate**	1,260	D	32.1*	1,200	C	20.7*	3,555	C	33.5	4,295	E	58.6
Route 3/ Control Tree Drive (Residential) Gate	1,300	C	22.1*	2,745	F	51.4*	4,085	C	26.7	4,510	B	18.5
Route 9/ Andersen AFB North Gate**	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	2,035	F	****	2,160	F	****

Notes: **** Delay exceeded maximum calculated value; * Unsignalized intersection.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-45 and Table I.3-46. The values in these tables represent the background CO concentration combined with the modeled results from USEPA's CAL3QHC microscale dispersion model using worst-case meteorological parameters, along with a.m. and p.m. peak traffic data. Emission factors were calculated using USEPA's MOBILE6.2 emission factor program. A background value must be added into the results of the dispersion analysis to account for others sources of CO that are not accounted for in the CAL3QHC modeling. Usually a value from a representative local ambient air quality monitor is used. Guam, however, does not have any local monitoring stations, as discussed earlier. Due to this, values from Hawaii were examined to determine their applicability to Guam. Using the 2006-2008 monitored data from the Punchbowl monitor, (rated as a middle scale monitor) located in Honolulu, Hawaii, the second highest maximum 1-hour reading was 1.7 parts ppm. This value was conservatively rounded to 2.0 ppm and represents the background CO concentration for this analysis. A persistence factor, that accounts for hourly variation of traffic and meteorological conditions, of 0.7, as recommended by USEPA was applied to the 1-hour CO concentrations to obtain 8-hour concentrations. As shown in Table I.3-45 and Table I.3-46, no violations of the applicable NAAQS are predicted.

Table I.3-34: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – North, Alternative 1

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 1*		*No-Action*		*Alternative 1*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/28	5.5	6.0	6.2	6.2	6.9	7.3	5.6	5.8	6.0	4.2
Route 9/Andersen AFB North Gate	3.8	4.5	4.2	4.5	3.6	4.5	3.8	4.5	4.2	4.5

Notes: 1-hour CO NAAQS = 35 ppm.
Includes a background concentration of 2 ppm.

Table I.3-35: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – North Alternative 1

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 1*	*No-Action*	*Alternative 1*
Route 1/28	4.2	4.3	5.1	4.1	4.2
Route 9/Andersen AFB North Gate	3.2	3.2	3.2	3.2	3.0

Notes: 8-hour CO NAAQS = 9 ppm
Includes a background concentration of 1.4 ppm

North – Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed emission construction analysis was conducted. Using the estimated project schedule, along with typical equipment requirements for specific tasks, emission burden estimates of CO, NO_x, PM_{10}, and $PM_{2.5}$ were calculated. Equipment emissions were presumed to be Tier3, with high sulfur fuel as confirmed by the construction management team. Based on the preliminary schedule, the highest emissions levels per year, per month, and the year that these emissions are predicted to occur in North are shown in Table I.3-47

Table I.3-36: Estimated Construction Emission Burden – North, Alternative 1

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
	2011	2011	2011	2011	2011	2011	2011

Central – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-48Table I.3-37. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-37: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 1, Central Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/8	1.64 $\times 10^{-6}$	0.78 $\times 10^{-6}$	10 in a million (1 $\times 10^{-5}$)	0.19	0.10	1
Route 4/7A	1.22 $\times 10^{-6}$/ 0.66 $\times 10^{-6}$	0.09 $\times 10^{-6}$/ 0.01 $\times 10^{-6}$		0.62/0.08	0.00/0.00	
Route 16/27	2.97 $\times 10^{-6}$	1.99 $\times 10^{-6}$		0.32	0.20	
Route 1 West of Route 30	0.26 $\times 10^{-6}$	0.06 $\times 10^{-6}$		0.03	0.01	

[1] Indicates increase or decrease from No Build condition.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The ADT on the highest volume roadways under the No Build and Build Alternative 1 are provided in Table I.3-49. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

Table I.3-38: Average Daily Traffic for Major Roadways in Central Project Section under Alternative 1

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1	79,337	100,300	26%	84,935	95,600	13%
Route 8	48,221	65,600	36 %	53,248	58,600	10 %
Route 18	49,196	74,000	50%	59,980	70,500	18%

The largest increase in AADT for the roadways is predicted to occur at Route 18 in 2014. By applying a 2% truck percentage, the largest daily increase of 20,963 vehicles would result in a daily increase of 4,193 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Central - Microscale CO Analysis

A screening analysis was performed to determine which Central ROI intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown Table I.3-50, 34 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Twenty-one (21) of these locations failed the screening criteria. The Route 1/8 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 4/7A intersection has the highest overall delay of any signalized intersection that failed the screening. This site was chosen for detailed analysis. The Route 16/27 intersection fails the screening criteria in other alternatives and was evaluated in this alternative for consistency. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-39: Screening Analysis Locations – Central, Alternative 1

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/26	5,910	E	75.8	6,060	F	229.8	6,865	E	75.8	7,295	F	156.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,860	F	137.4	7,605	F	374.3
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	3,925	D	44.4	4,340	E	75.7
Route 1/3	5,055	F	158.4	5,400	F	306.9	4,970	D	48.5	5,845	D	50.6
Route 1/16	5,905	D	52.2	6,410	F	305.5	6,950	E	65.3	7,490	F	87.5
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,900	E	68.0	6,535	F	82.0
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,985	F	112.2	6,790	F	131.5
Route 1/ 10A	6,935	F	82.9	7,055	F	117.2	7,485	F	118.1	7,695	F	102.0
Route 1/ 14B	6,120	E	60.5	6,485	F	91.8	6,485	F	83.9	6,775	E	78.2
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	182.5	8,455	F	275.1
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,825	F	134.7	7,385	F	267.2
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**8,360**	**F**	**97.6**	**8,970**	**F**	**127.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	32.4	8,775	F	140.2
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,255	D	40.6	6,240	E	61.8
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,765**	**F**	**607.3**	**5,515**	**F**	**534.1**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,665	F	199.5	4,705	E	65.1
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,810	D	39.6	1,790	E	57.7
Route 4/4A	740	D	27.9*	925	C	21.2*	1,030	E	49.7*	1,790	F	484.3*
Route 7/7A	1,985	F	77.7*	1,745	E	114.5*	1,935	D	29.2*	2,100	F	105.1*
Route 8/33 (East)	3,655	C	31.2	4,680	F	147.3	4,315	D	54.6	4,910	F	81.7
Route 8/10	6,410	F	122.0	6,295	F	116.5	6,435	F	96.9	7,010	F	172.7
Route 10/ 15	5,550	D	49.7	5,585	F	101.1	6,245	F	196.9	6,270	F	152.3
Route 16/ 27A	2,770	C	24.3	3,130	C	26.4	3,050	C	27.4	3,680	C	34.2
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**486.4**	**7,665**	**F**	**345.0**	**7,790**	**F**	**288.7**
Route 16/ 10A	6,178	F	874.2	4,880	F	208.7	5,035	F	123.1	5,725	F	123.5
Route 17/ 4A	720	C	17.0*	760	C	17.9*	700	B	13.6*	790	C	18.7*
Route 26/ 25	3,180	F	270.1	3,495	E	71.7	3,415	C	31.2	3,930	D	41.0
Route 26/ 15	1,680	F	134.8*	1,790	F	2494.6*	2,015	C	27.9	2,115	C	32.1
Route 28/ 27A	2,920	F	353.1*	2,565	F	437.8*	2,735	D	35.6	2,640	D	36.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	F	458.6*	4,780	C	32.4	5,105	E	79.1
Route 15/ Road 1.16 M east of Route 26 (Second Gate)**	1,040	NA	NA	1,010	NA	NA	1,320	C	22.1*	1,410	C	22.6*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	F	****	4,765	NA	NA	5,150	NA	NA

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	NA	NA	345	NA	NA

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.
Legend: NA = Not Applicable At The Time Of Analysis.

The results of the microscale analysis are shown in Table I.3-51 and Table I.3-52. The values in these tables, using the same analysis techniques and parameters as those applied in North, represent the predicted worst-case CO concentrations. As shown in Table I.3-51 and Table I.3-52, no violations of the applicable NAAQS are predicted.

Table I.3-40: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Central, Alternative 1

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 1*		*No-Action*		*Alternative 1*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/8	6.0	6.4	6.1	6.4	7.3	7.6	5.8	5.4	6.2	6.4
Route 4/7A	5.3	3.8	4.8	5.4	5.1	5.6	4.6	5.0	4.6	5.1
Route 16/27	8.4	9.4	7.0	7.3	8.1	9.0	6.4	6.8	7.0	7.9

Notes: 1-hour CO NAAQS = 35 ppm.
Includes a background concentration of 2 ppm.

Table I.3-41: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Central, Alternative 1

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 1*	*No-Action*	*Alternative 1*
Route 1/8	4.5	4.5	5.3	4.1	4.5
Route 4/7A	3.7	3.8	3.9	3.5	3.6
Route 16/27	6.6	5.1	6.3	4.8	5.5

Notes: 8-hour CO NAAQS = 9 ppm.
Includes a background concentration of 1.4 ppm.

Central - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed emission construction analysis was conducted using the same method as described for the North ROI.The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-53.

Table I.3-42: Estimated Construction Emission Burden – Central, Alternative 1

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Apra Harbor – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-54. Based on these results, the following conclusions can be made:

- Maximum estimated changes in cancer risk at these locations are expected to decrease at the receptors analyzed due to the project. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated changes in the total chronic hazard index are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-43: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 1, Apra Harbor

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Increase or Decrease[1] Chronic Hazard Index Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/2A	$-0.82\ 1 \times 10^{-6}$	$-0.06\ 1 \times 10^{-6}$	10 in a million (1×10^{-5})	-0.09	0.00	1

[1] Indicates increase or decrease from No Build condition.

PM impacts would be the same as those for the North Region, Alternative 1. The ADT on the highest volume roadways under the No Build and Build Alternative 1 are provided in Table I.3-55. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in Table I.3-55, the largest increase in AADT for the roadways presented is predicted to occur at Route 1 near Route 18 in 2030. By applying a 2% truck percentage, the largest daily increase of 7,158 vehicles would result in a daily increase of 143 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern with respect to $PM_{2.5}$.

Table I.3-44: Average Daily Traffic for Major Roadways in Apra Harbor Project Section under Alternative 1

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1 near Route 18	46,407	49,800	11%	41,142	48,300	17%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Apra Harbor - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-56, three locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. One of these locations failed the screening criteria. The Route 1/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in Table I.3-57 and Table I.3-58. The values in these tables, using the same analysis techniques and parameters as those applied in North, represent the predicted worst-case CO concentrations. As shown in Table I.3-57 and Table I.3-58, no violations of the applicable NAAQS are predicted.

Table I.3-45: Screening Analysis Locations – Apra Harbor, Alternative 1

Intersection	*No-Action*						*Build*					
	a.m.			*p.m.*			*a.m.*			*p.m.*		
	Volume	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,885	C	20.7	4,080	D	43.5
Route 1/ Polaris Point	3,655	A	4.3	4,680	A	6.2	3,420	A	8.2	3,900	A	7.4
Route 1/2a	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	4,275	E	66.8	4,780	E	57.2

Notes: * Unsignalized intersection;**** = Delay exceeded maximum calculated value

Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

Table I.3-46: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 1

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 1*		*No-Action*		*Alternative 1*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/2A	4.7	4.3	5.6	4.7	5.3	5.1	4.3	3.9	4.3	3.9

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-47: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 1

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 1*	*No-Action*	*Alternative 1*
Route 1/2A	3.3	3.9	3.7	3.0	3.0

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

Apra Harbor - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for the North. The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table 1.3-59.

Table I.3-48: Estimated Construction Emission Burden – Apra Harbor, Alternative 1

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

South – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-60. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-49: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 1, South Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 5/2A	0.46×10^{-6}	0.08×10^{-6}	10 in a million (1×10^{-5})	0.01	0.05	1

[1] Indicates increase or decrease from No Build condition.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

PM impacts would be the same as those for the North Region, Alternative 1. The AADT on the highest volume roadways under the No Build and Build Alternative 1 are provided in Table I.3-61 As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 4 in 2014. By applying a 2% truck percentage, the largest daily increase of 1,767 vehicles would result in a daily increase of 35 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-50: Average Daily Traffic for Major Roadways in South Project Section under Alternative 1

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 4	15,833	17,600	11%	21,504	20,100	-7%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

South - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-62, four locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Two of these locations failed the screening criteria. The Route 5/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

Table I.3-51: Screening Analysis Locations – South, Alternative 1

Intersection	*No-Action*						*Build*					
	a.m.			*p.m.*			*a.m.*			*p.m.*		
	Volume	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*
Route 5/ 2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**3,280**	**F**	**96.3**	**3,335**	**C**	**26.2**
Route 5/17	3,655	D	28.9*	4,680	E	47.8*	1,035	F	56.8*	1,105	F	149.6*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	27.8	2,350	C	27.1
Route 5/ Harmon Road	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.

Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-63 and Table I.3-64. The values in these tables, using the same analysis techniques and parameters as those applied in the North, represent the predicted worst-case CO concentrations. As shown in Table I.3-63 and Table I.3-64 no violations of the applicable NAAQS are predicted.

Table I.3-52: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – South, Alternative 1

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 1		No-Action		Alternative 1	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 5/2A	4.2	3.9	4.2	3.9	4.5	4.0	3.5	3.5	4.0	3.7

NOTES: 1-HOUR CO NAAQS = 35 PPM.
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-53: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – South, Alternative 1

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 1	No-Action	Alternative 1
Route 5/2A	2.9	2.9	3.2	2.5	2.8

Notes: 8-hour CO NAAQS = 9 ppm.

Includes a background concentration of 1.4 ppm.

South - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North. As shown in Table I.3-65, construction emissions are negligible.

Table I.3-54: Estimated Construction Emission Burden – South, Alternative 1

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Proposed Mitigation Measures

Because the alternative is not predicted to cause a significant impact on air quality levels, no mitigation is proposed.

3.3.7.3 ALTERNATIVE 2 (PREFERRED ALTERNATIVE)

Mesoscale Emissions Burden

As shown in Table I.3-66, regional emissions are predicted to increase in the range of 18% to 19% under Alternative 2, as compared to the no-action alternative. This is primarily due to the estimated 18% increase in VMT under Alternative 2.

Table I.3-55: Daily Regional Emission Burdens (TPY), Alternative 2

Scenario	*VMT*	*Speed*	*Emission Burden (TPY)*						
			CO	NOx	VOC	PM_{10}	$PM_{2.5}$	SO_2	CO_2
2030 No-Action Alternative	3,535,224	28.6	13,388	478	801	78	57	562	80,498,6
2030 Alternative 2	4,160,544	28.0	15,813	566	951	91	67	661	94,687,2
Percent Change from No-Action			18%	18%	19%	18%	18%	18%	18%

Legend: CO = carbon monoxide; VOC = volatile organic compounds; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; TPY = tons per year; NOx = nitrogen oxides; VMT = vehicle miles traveled.

North – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-67. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-56: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2, North Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/28	1.6×10^{-6}/ 0.41×10^{-6}	1.00×10^{-6} / 0.03×10^{-6}	10 in a million (1×10^{-5})	0.19 / 0.05	0.12 / 0.00	1
Route 9/Andersen AFB North Gate	0.97×10^{-6}	0.26×10^{-6}		0.18	0.07	

[1] Indicates increase or decrease from No Build condition.

In addition, based on proposed EPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 2 are provided in Table I.3-68. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

Table I.3-57: Average Daily Traffic for Major Roadways in North Project Section under Alternative 2

Roadway	2014			2030		
	No Build	Build	% Change	No Build	Build	% Change
Route 3 and North Commercial Gate	0	66,900	NA	0	45,900	NA
Route 3 South of Route 28	11,499	53,100	362 %	12,070	34,000	182%

The largest increase in AADT for the roadways presented in Table I.3-68 is predicted to occur on Route 3 and the North Commercial Gate in 2014. By applying a 2% truck percentage, the largest daily increase of 66,900 vehicles would result in a daily increase of 1,338 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Microscale CO Impact Analysis and Construction Emissions Estimate

North - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-69 10 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Five of these locations failed the screening criteria. The Route 1/28 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 9/Andersen AFB North Gate intersection was also chosen for analysis due to the extremely high delay predicted in the build scenario and the predicted high volumes at this location. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-58: Screening Analysis Locations – North, Alternative 2

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,485	C	22.5	3,525	D	52.2
Route 1/29	3,675	F	87.6	2,970	E	60.5	3,550	E	65.5	3,400	E	67.7
Route 1/28	**5,700**	**F**	**226.2**	**6,050**	**F**	**157.7**	**6,600**	**F**	**216.8**	**7,050**	**F**	**104.5**
Route 3/3A	875	A	9.5*	880	B	10.1*	910	B	11.6*	2,660	F	79.0*
Route 3/28	1,904	B	17.8	2,070	C	21.4	3,990	C	26.0	4,210	D	36.9
Route 15/29	1,760	F	****	1,575	F	683.5*	1,860	C	27.7	1,830	C	25.4
Route 3/ North (Commercial) Gate**	1,010	C	21.4*	970	C	15.7*	2,455	B	12.5	2,855	C	28.3
Route 3/ South (Main) Gate**	1,260	D	32.1*	1,200	C	20.7*	3,555	C	33.5	4,295	E	58.6
Route 3/ Control Tree Drive (Residential) Gate	1,300	C	22.1*	2,745	F	51.4*	4,085	C	26.7	4,510	B	18.5
Route 9/ Andersen AFB North Gate**	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	2,035	F	****	2,160	F	****

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-70 and Table I.3-71. The values in these tables, using the same analysis techniques and parameters as those applied in North under Alternative 1, represent the predicted worst-case CO concentrations. As shown in Table I.3-70 and Table I.3-71, no violations of the applicable NAAQS are predicted.

Table I.3-59: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – North, Alternative 2

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 2		No-Action		Alternative 2	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/28	5.5	6.0	6.2	6.2	6.9	7.3	5.6	5.8	6.0	4.2
Route 9/Andersen AFB North Gate	3.8	4.5	4.2	4.5	3.6	4.5	3.8	4.5	4.2	4.5

Notes: 1-hour CO NAAQS = 35 ppm.
Includes a background concentration of 2 ppm.

Table I.3-60: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – North Region, Alternative 2

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 2	No-Action	Alternative 2
Route 1/28	4.2	4.3	5.1	4.1	4.2
Route 9/Andersen AFB North Gate	3.2	3.2	3.2	3.2	3.2

Notes: 8-hour CO NAAQS = 9 ppm.
Includes a background concentration of 1.4 ppm.

North - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for the North (Alternative 1). The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-72. These emissions were further combined with those from other project components and discussed in Volume 7 to determine the potential impact significance.

Table I.3-61: Estimated Construction Emission Burden – North, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Central - Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-73. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-62: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2, Central Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/8	1.64×10^{-6}	0.78×10^{-6}	10 in a million (x 10^{-5})	0.19	0.10	1
Route 4/7A	1.22×10^{-6}/ 0.66×10^{-6}	-0.09×10^{-6}/ 0.01×10^{-6}		0.62/0.08	0.00/0.00	
Route 16/27	2.97×10^{-6}	1.99×10^{-6}		0.32	0.20	
Route 1 West of Route 30	0.26×10^{-6}	0.06×10^{-6}		0.03	0.01	

[1] Indicates increase or decrease from No Build condition.

In addition, based on proposed EPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 2 are provided in Table I.3-74. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

Table I.3-63: Average Daily Traffic for Major Roadways in Central Project Section under Alternative 2

Roadway	2014			2030		
	No Build	Build	% Change	No Build	Build	% Change
Route 1	79,337	100,300	26%	84,935	95,600	13%
Route 8	48,221	65,600	36 %	53,248	58,600	10 %
Route 18	49,196	74,000	50%	59,980	70,500	18%

The largest increase in AADT for the roadways presented in Table I.3-74 is predicted to occur under Route 8 in 2014. By applying a 2% truck percentage, the largest daily increase of 20,963 vehicles would result in a daily increase of 4,193 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Central - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-75, 34 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Twenty-one (21) of these locations failed the screening criteria. The Route 1/8 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 4/7A intersection has the highest overall delay of any signalized intersection that failed the screening. This site was chosen for detailed analysis. The Route 16/27 intersection fails the screening criteria in other alternatives and was evaluated in this alternative for consistency. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-64: Screening Analysis Locations – Central, Alternative 2

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/26	5,910	E	75.8	6,060	F	229.8	6,865	E	75.8	7,295	F	156.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,860	F	137.4	7,605	F	374.3
Route 1/27A	3,195	E	67.2	3,420	F	189.5	3,925	D	44.4	4,340	E	75.7
Route 1/3	5,055	F	158.4	5,400	F	306.9	4,970	D	48.5	5,845	D	50.6
Route 1/16	5,905	D	52.2	6,410	F	305.5	6,950	E	65.3	7,490	F	87.5
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,900	E	68.0	6,535	F	82.0
Route 1/14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,985	F	112.2	6,790	F	131.5
Route 1/10A	6,935	F	82.9	7,055	F	117.2	7,485	F	118.1	7,695	F	102.0
Route 1/14B	6,120	E	60.5	6,485	F	91.8	6,485	F	83.9	6,775	E	78.2
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	182.5	8,455	F	275.1
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,825	F	134.7	7,385	F	267.2

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**8,360**	**F**	**97.6**	**8,970**	**F**	**127.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	32.4	8,775	F	140.2
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,255	D	40.6	6,240	E	61.8
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,765**	**F**	**607.3**	**5,515**	**F**	**534.1**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,665	F	199.5	4,705	E	65.1
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,810	D	39.6	1,790	E	57.7
Route 4/4A	740	D	27.9*	925	C	21.2*	1,030	E	49.7*	1,790	F	484.3*
Route 7/7A	1,985	F	77.7*	1,745	E	114.5*	1,935	D	29.2*	2,100	F	105.1*
Route 8/33 (East)	3,655	C	31.2	4,680	F	147.3	4,315	D	54.6	4,910	F	81.7
Route 8/10	6,410	F	122.0	6,295	F	116.5	6,435	F	96.9	7,010	F	172.7
Route 10/15	5,550	D	49.7	5,585	F	101.1	6,245	F	196.9	6,270	F	152.3
Route 16/ 27A	2,770	C	24.3	3,130	C	26.4	3,050	C	27.4	3,680	C	34.2
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**486.4**	**7,665**	**F**	**345.0**	**7,790**	**F**	**288.7**
Route 16/ 10A	6,178	F	874.2	4,880	F	208.7	5,035	F	123.1	5,725	F	123.5
Route 17/ 4A	720	C	17.0*	760	C	17.9*	700	B	13.6*	790	C	18.7*
Route 26/25	3,180	F	270.1	3,495	E	71.7	3,415	C	31.2	3,930	D	41.0
Route 26/15	1,680	F	134.8*	1,790	F	2494.6*	2,015	C	27.9	2,115	C	32.1
Route 28/27A	2,920	F	353.1*	2,565	F	437.8*	2,735	D	35.6	2,640	D	36.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	F	458.6*	4,780	C	32.4	5,105	E	79.1
Route 15/ Road 1.16 M east of Route 26 (Second Gate)**	1,040	NA	NA	1,010	NA	NA	1,320	C	22.1*	1,410	C	22.6*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	F	****	4,765	NA	NA	5,150	NA	NA
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	NA	NA	345	NA	NA

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.
Legend: NA = Not Applicable At The Time Of Analysis.

The results of the microscale analysis are shown in Table I.3-76 and Table I.3-77. The values in these tables, using the same analysis techniques and parameters as those applied in the North Region (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-76 and Table I.3-77, no violations of the applicable NAAQS are predicted.

Table I.3-65: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Central, Alternative 2

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 2		No-Action		Alternative 2	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/8	6.0	6.4	6.1	6.4	7.3	7.6	5.8	5.4	6.2	6.4
Route 4/7A	5.3	3.8	4.8	5.4	5.1	5.6	4.6	5.0	4.6	5.1
Route 16/27	8.4	9.4	7.0	7.3	8.1	9.0	6.4	6.8	7.0	7.9

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-66: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Central, Alternative 2

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 2	No-Action	Alternative 2
Route 1/8	4.5	4.5	5.3	4.1	4.5
Route 4/7A	3.7	3.8	3.9	3.5	3.6
Route 16/27	6.6	5.1	6.3	4.8	5.5

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

Central - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed emission construction analysis was conducted using the same method as described for North (Alternative 1). The highest emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-78. These emissions were further combined with those from other project components and discussed in Volume 7 to determine the potential impact significance.

Table I.3-67: Estimated Construction Emission Burden – Central, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Apra Harbor – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-79Table I.3-68. Based on these results, the following conclusions can be made:

- Maximum estimated changes in cancer risk at these locations are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated changes in the total chronic hazard index are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed EPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-68: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2 Apra Harbor

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/2A	-0.82×10^{-6}	-0.16×10^{-6}	10 in a million (1×10^{-5})	-0.09	-0.02	1

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 2 are provided in Table I.3-80. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 1 near Route 18 in 2030. By applying a 2% truck percentage, the largest daily increase of 7,158 vehicles would result in a daily increase of 143 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-69: Average Daily Traffic for Major Roadways in Apra Harbor Project Section under Alternative 2

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1 near Route 18	46,407	49,800	11%	41,142	48,300	17%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Apra Harbor - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-81, three locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. One of these locations failed the screening criteria. The Route 1/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

Table I.3-70: Screening Analysis Locations – Apra Harbor, Alternative 2

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,885	C	20.7	4,080	D	43.5
Route 1/ Polaris Point	3,655	A	4.3	4,680	A	6.2	3,420	A	8.2	3,900	A	7.4
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	4,275	E	66.8	4,780	E	57.2

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-71 and Table I.3-72. The values in these tables, using the same analysis techniques and parameters as those applied in the North Region (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-71 and Table I.3-72, no violations of the applicable NAAQS are predicted.

Table I.3-71: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 2

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 2		No-Action		Alternative 2	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/2A	4.7	4.3	5.6	4.7	5.3	5.1	4.3	3.9	4.3	3.9

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-72: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 2

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 2	No-Action	Alternative 2
Route 1/2A	3.3	3.9	3.7	3.0	3.0

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

Apra Harbor - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-84. These emissions were further combined with those from other project components and discussed in Volume 7 to determine the potential impact significance.

Table I.3-73:Estimated Construction Emission Burden – Apra Region, Alternative 2

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

South – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-85. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed EPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-74: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2, South Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 5/2A	0.46×10^{-6}	0.08×10^{-6}	10 in a million (1×10^{-5})	0.05	0.01	1

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 2 are provided in Table I.3-86. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 4 in 2014. By applying a 2% truck percentage, the largest daily increase of 1,767 vehicles would result in a daily increase of 35 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Table I.3-75: Average Daily Traffic for Major Roadways in South Project Section under Alternative 2

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 4	15,833	17,600	11%	21,504	20,100	-7%

South -Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-87, four locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Two of these locations failed the screening criteria. The Route 5/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in Table I.3-88 and Table I.3-89. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-88 and Table I.3-89, no violations of the applicable NAAQS are predicted.

Table I.3-76: Screening Analysis Locations – South, Alternative 2

Intersection	*No-Action*						*Build*					
	a.m.			*p.m.*			*a.m.*			*p.m.*		
	Volume	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*
Route 5/ 2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**3,280**	**F**	**96.3**	**3,335**	**C**	**26.2**
Route 5/17	3,655	D	28.9*	4,680	E	47.8*	1,035	F	56.8*	1,105	F	149.6*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	27.8	2,350	C	27.1
Route 5/ Harmon Road	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value. Indicates sites that failed the screening evaluation. **Indicates site chosen for detailed CO microscale analysis.**

Table I.3-77: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – South, Alternative 2

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 2*		*No-Action*		*Alternative 2*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 5/2A	4.2	3.9	4.2	3.9	4.5	4.0	3.5	3.5	4.0	3.7

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-78: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – South, Alternative 2

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 2*	*No-Action*	*Alternative 2*
Route 5/2A	2.9	2.9	3.2	2.5	2.8

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

South - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). As shown in Table I.3-90, construction emissions are negligible.

Table I.3-79: Estimated Construction Emission Burden – South, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Proposed Mitigation Measures

Because the alternative is not predicted to cause a significant impact on air quality levels, no mitigation is proposed.

3.3.7.4 ALTERNATIVE 2 CONSTRAINED

As of February 2010, a limited number of off base roadway projects had been identified as having funding or reasonable expectation of being funded. Additional traffic analysis was completed for the 17 roadways and 42 intersections, assuming that only a limited number of projects would be funded. These projects are either DAR-certified or determined to be DAR-eligible at this time (see Volume 1, Section 1.1.4 Project Location, Funding, and Setting). The evaluation of the remaining road projects for DAR eligibility and certification is continuing. The additional analysis that was performed for Alternative 2 (the preferred alternative) included only the following off base roadway and intersection projects:

- Route 3, Route 28 to Route 9; widen to five lanes
- Route 9, Route 3 to AAFB North gate; widen to five lanes
- Route 9, AAFB to Route 1; widen to three lanes
- Route 1/3 Intersection
- Route 1/8 Intersection
- Route 1/11 Intersection
- Route 3/3A Intersection
- Access points as described for preferred alternative (Alternative 2)

The purpose of analyzing the impacts of only these roadway improvements is to determine the impact of the housing and additional military base traffic on air quality with only a select number of roadway improvement projects. Since the majority of the relocated military population will be residing in the Finegayan area, the roadways adjacent to this area, Routes 3 and 9, will receive the majority of the new traffic and consequent localized air quality impacts. The majority of the roadway projects that are expected to be funded are in the Finegayan area.

The methodology for assessing air quality impacts is the same as described in this Chapter for the off base roadway alternatives. Impacts for both 2014 and 2030 were analyzed in the models. The results are reported for all of the roadways included in the full Alternative 2 analysis, however, only the roadway improvements listed above were included in the modeling of the impacts.

Mesoscale Emissions Burden

The mesoscale emissions burden under Alternative 2 Constrained is shown in Table I.3-91 and the overall emissions predicted would increase in the range of 18% to 19% above No Build condition and they are the same as compared to Alternative 1and Alternative 2. This is primarily due to the estimated 18% increase in VMT under Alternative 2 Constrained.

Table I.3-80: Regional Annual Emission Burdens, Alternative 2 Constrained

			Emission Burden (TPY)						
Scenario	*VMT*	*Speed*	*CO*	*NO_x*	*VOC*	*PM_{10}*	*$PM_{2.5}$*	*SO_2*	*CO_2*
2030 Alternative 2 Constrained	4,160,544	28.0	15,813	566	951	91	67	661	94,687,2

Legend: CO = carbon monoxide; CO_2 = carbon dioxide; NOx = nitrogen oxides; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; SO_2 = sulfur dioxide; TPY = tons per year; VMT = vehicle miles traveled; VOC = volatile organic compound.

North

MSATs and PM

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-92. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk (Table I.3-92) at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-81: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2 Constrained, North Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease at Sidewalk Receptors/Actual Receptors ($x10^{-6}$)*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/28	1.14 / 0.29	1.00 / 0.14	10	0.15 / 0.04	0.07 / 0.02	1
Route 9/Andersen AFB North Gate	0.99	0.26		0.23	0.23	

Legend: AFB = Air Force Base; USEPA = United States Environmental Protection Agency.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build (i.e., no-action alternative) and Build (i.e., Alternative 2 Constrained) conditions are less than existing risks in most cases.

PM impacts would be the same as those for the North Region, Alternative 1. The ADT on the highest volume roadways under the No Build and Build Alternative 2 Constrained are provided in Table I.3-93. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

Table I.3-82: Average Daily Traffic for Major Roadways in North Project Section under Alternative 2 Constrained

Roadway	2014			2030		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 3 and North Commercial Gate	0	66,900	NA	0	45,900	NA
Route 3 South of Route 28	11,499	53,100	362 %	12,070	34,000	182%

The largest increase in AADT for the roadways presented in Table I.3-94 is predicted to occur on Route 3 and the North Commercial Gate in 2014. By applying a 2% truck percentage, the largest daily increase of 66,900 vehicles would result in a daily increase of 1,338 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern with respect to $PM_{2.5}$.

Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. 10 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Five of these locations failed the screening criteria. The Route 1/28 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 9/Andersen AFB North Gate intersection was also chosen for analysis due to the extremely high delay predicted in the build scenario and the predicted high volumes at this location. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in Table I.3-94 and Table I.3-95. The values in these tables, using the same analysis techniques and parameters as those applied in the North Region under Alternative 1, represent the predicted worst-case CO concentrations and no violations of the applicable NAAQS are predicted.

Construction Emissions Analysis. Alternative 2 Constrained would involve less construction activity than proposed for Alternative 2. As such, construction emissions for this alternative are expected to lower than those predicted for Alternative 2.

Table I.3-83: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – North, Alternative 2 Constrained

Analysis Site	*Existing*		*2014*		*2030*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/28	5.5	6.0	7.0	7.5	5.8	6.2
Route 9/Andersen AFB North Gate	3.8	4.5	4.2	4.4	3.6	4.5

Notes: 1-hour CO NAAQS = 35 ppm. Includes a background concentration of 2 ppm.
Legend: AFB = Air Force Base; CO = carbon monoxide; NAAQS - National Ambient Air Quality Standards, ppm = parts per million.

Table I.3-84: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – North Region, Alternative 2 Constrained

Analysis Site	*Existing*	*2014*	*2030*
Route 1/28	4.2	5.3	4.3
Route 9/Andersen AFB North Gate	3.2	3.1	3.2

Notes: 8-hour CO NAAQS = 9 ppm. Includes a background concentration of 1.4 ppm.
Legend: AFB = Air Force Base; CO = carbon monoxide; NAAQS - National Ambient Air Quality Standards, ppm = parts per million.

Central

MSATs and PM

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-96. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-85: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2 Constrained, Central Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease at Sidewalk Receptors/Actual Receptors ($x10^{-6}$)*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease at Sidewalk Receptors /Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/8	2.60	1.21	10	0.27	0.11	1
Route 4/7A	1.56/0.81	1.21/0.27		0.66/0.10	0.01/0.01	
Route 16/27	1.58	0.69		0.20	0.09	
Route 1 West of Route 30	0.26	0.06		0.03	0.01	

Legend: USEPA = United States Environmental Protection Agency.

PM impacts would be the same as those for the North Region, Alternative 1. The ADT on the highest volume roadways under the No Build and Build Alternative 2 Constrained are provided in Table I.3-97. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

The largest increase in AADT for the roadways presented in Table I.3-97 is predicted to occur under Route 8 in 2014. By applying a 2% truck percentage, the largest daily increase of 20,963 vehicles would result in a daily increase of 4,193 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-86: Average Daily Traffic for Major Roadways in Central Project Section under Alternative 2 Constrained

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1	79,337	100,300	26%	84,935	95,600	13%
Route 8	48,221	65,600	36 %	53,248	58,600	10 %
Route 18	49,196	74,000	50%	59,980	70,500	18%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern with respect to $PM_{2.5}$.

Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. 34 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Twenty-one (21) of these locations failed the screening criteria. The Route 1/8 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 4/7A intersection has the highest overall delay of any signalized intersection that failed the screening. This site was chosen for detailed analysis. The Route 16/27 intersection fails the screening criteria in other alternatives and was evaluated in this alternative for consistency. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in Table I.3-98 and Table I.3-99Table I.3-88. The values in these tables, using the same analysis techniques and parameters as those applied in the North Region (Alternative 1), represent the predicted worst-case CO concentrations and no violations of the applicable NAAQS are predicted.

Table I.3-87: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Central, Alternative 2 Constrained

Analysis Site	Existing		2014		2030	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/8	6.0	6.4	6.7	7.6	5.6	6.2
Route 4/7A	5.3	3.8	6.0	6.1	5.4	5.3
Route 16/27	8.4	9.4	7.9	8.4	6.7	7.3

Notes: 1-hour CO NAAQS = 35 ppm. Includes a background concentration of 2 ppm.
Legend: CO = carbon monoxide; NAAQS - National Ambient Air Quality Standards, ppm = parts per million.

Table I.3-88: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Central, Alternative 2 Constrained

Analysis Site	*Existing*	*2014*	*2030*
Route 1/8	4.5	5.3	4.3
Route 4/7A	3.7	4.3	3.8
Route 16/27	6.6	5.9	5.1

NOTES: 8-HOUR CO NAAQS = 9 PPM. INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.
LEGEND: CO = CARBON MONOXIDE; NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARDS, PPM = PARTS PER MILLION.

Construction Emissions Analysis

Alternative 2 Constrained would involve less construction activity than proposed for Alternative 2. As such, construction emissions for this alternative are expected to lower than those predicted for Alternative 2.

Apra Harbor

MSATs and PM

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-100. Based on these results, the following conclusions can be made:

- Maximum estimated changes in cancer risk at these locations are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated changes in the total chronic hazard index are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-89: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2 Constrained Apra Harbor

Analysis Site	*Estimated Cancer Risk Increase or Decrease at Sidewalk Receptors/Actual Receptors ($x10^{-6}$)*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/2A	-0.82	-0.06	10	-0.09	-0.00	1

Legend: USEPA = United States Environmental Protection Agency.

PM impacts would be the same as those for the North Region, Alternative 1. The ADT on the highest volume roadways under the No Build and Build Alternative 2 Constrained are provided in Table I.3-101 As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 1 near Route 18 in 2030. By applying a 2% truck percentage, the largest daily increase of 7,158 vehicles would result in a daily increase of 143 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-90: Average Daily Traffic for Major Roadways in Apra Harbor Project Section under Alternative 2 Constrained

Roadway	2014			2030		
	No Build	Build	% Change	No Build	Build	% Change
Route 1 near Route 18	46,407	49,800	11%	41,142	48,300	0.0%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern with respect to $PM_{2.5}$.

Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. Three locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. One of these locations failed the screening criteria. The Route 1/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in Table I.3-102 and Table I.3-103. The values in these tables, using the same analysis techniques and parameters as those applied in the North Region (Alternative 1), represent the predicted worst-case CO concentrations and no violations of the applicable NAAQS are predicted.

Table I.3-91: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 2 Constrained

Analysis Site	Existing		2014		2030	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/2A	4.7	4.3	5.3	5.1	4.3	3.9

NOTES: 1-HOUR CO NAAQS = 35 PPM. INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.
LEGEND: CO = CARBON MONOXIDE; NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARDS, PPM = PARTS PER MILLION.

Table I.3-92: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 2 Constrained

Analysis Site	Existing	2014	2030
Route 1/2A	3.3	3.7	3.0

NOTES: 8-HOUR CO NAAQS = 9 PPM. INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.
LEGEND: CO = CARBON MONOXIDE; NAAQS - NATIONAL AMBIENT AIR QUALITY STANDARDS, PPM = PARTS PER MILLION.

Construction Emissions Analysis

Alternative 2 Constrained would involve less construction activity than proposed for Alternative 2. As such, construction emissions for this alternative are expected to lower than those predicted for Alternative 2.

South

MSATs and PM

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-104. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-93: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 2 Constrained, South Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease at Sidewalk Receptors/Actual Receptors ($x10^{-6}$)*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 5/2A	0.46	0.08	10	0.05	0.01	1

Legend: USEPA = United States Environmental Protection Agency.

PM impacts would be the same as those for the North Region, Alternative 1. The ADT on the highest volume roadways under the No Build and Build Alternative 2 Constrained are provided in Table I.3-105. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 4 in 2014. By applying a 2% truck percentage, the largest daily increase of 1,767 vehicles would result in a daily increase of 35 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-94: Average Daily Traffic for Major Roadways in South Project Section under Alternative 2 Constrained

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 4	15,833	17,600	11%	21,504	20,100	-7%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern with respect to $PM_{2.5}$.

Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. Four locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Two of these locations failed the screening criteria. The Route 5/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in Table I.3-106 and Table I.3-107. The values in these tables, using the same analysis techniques and parameters as those applied for the North Region (Alternative 1), represent the predicted worst-case CO concentrations and no violations of the applicable NAAQS are predicted.

Table I.3-95 Predicted Worst-Case 1-Hour CO Concentrations (ppm) – South, Alternative 2 Constrained

Analysis Site	*Existing*		*2014*		*2030*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 5/2A	4.2	3.9	4.5	4.0	4.0	3.7

Notes: 1-hour CO NAAQS = 35 ppm. Includes a background concentration of 2 ppm.
Legend: CO = carbon monoxide; NAAQS - National Ambient Air Quality Standards, ppm = parts per million.

Table I.3-96: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – South, Alternative 2 Constrained

Analysis Site	*Existing*	*2014*	*2030*
Route 5/2A	2.9	3.2	2.8

Notes: 8-hour CO NAAQS = 9 ppm. Includes a background concentration of 1.4 ppm.
Legend: CO = carbon monoxide; NAAQS - National Ambient Air Quality Standards, ppm = parts per million.

Construction Emissions Analysis

Alternative 2 Constrained would involve less construction activity than proposed for Alternative 2. As such, construction emissions for this alternative are expected to lower than those predicted for Alternative 2.

Proposed Mitigation Measures

Because the alternative is not predicted to cause a significant impact on air quality levels, no mitigation is proposed.

3.3.7.5 Alternative 3

Mesoscale Emissions Burden

As shown in Table I.3-108, regional emissions are predicted to increase in the range of 20% to 23% under Alternative 3, as compared to the no-action alternative. This is primarily due to the estimated 20% increase in VMT under Alternative 3.

Table I.3-97: Daily Regional Emission Burdens (TPY), Alternative 3

Scenario	*VMT*	*Speed*	*Emission Burden (**TPY**)*						
			CO	NOx	VOC	PM_{10}	$PM_{2.5}$	SO_2	CO_2
2030 No-Action Alternative	3,535,224	28.6	13,388	478	801	78	57	562	80,498,6
2030 Alternative 2	4,249,190	27.4	16,211	580	982	93	68	675	96,704,7
Percent Change from No-Action			21%	21%	23%	20%	20%	20%	20%

Legend: CO = carbon monoxide; VOC = volatile organic compounds; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; TPY = tons per year; NOx = nitrogen oxides; VMT = vehicle miles traveled.

North – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-109. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-98: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 3, North Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors ($x10^{-6}$)*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/28	2.36×10^{-6} / 0.46×10^{-6}	0.89×10^{-6} / 0.09×10^{-6}	10 in a million (1×10^{-5})	0.27 /0.06	0.11 / 0.01	1
Route 9/Andersen AFB North Gate	0.97×10^{-6}	0.26×10^{-6}		0.18	0.07	

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 3 are provided in Table I.3-99. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

Table I.3-99: Average Daily Traffic for Major Roadways in North Project Section under Alternative 3

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 3 and North Commercial Gate	0	24,300	NA%	0	18,800	2.7%
Route 3 South of Route 28	11,499	56,600	392%	12,070	43,000	13%

The largest increase in AADT for the roadways presented in Table I.3-93 is predicted to occur on Route 3 South of Route 28 in 2030. By applying a 2% truck percentage, the largest daily increase of 45,101 vehicles would result in a daily increase of 902 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Microscale CO Impact Analysis and Construction Emissions Estimate

North – Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-111 10 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Nine of these locations failed the screening criteria. The Route 1/28 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 9/Andersen AFB North Gate intersection was also chosen for analysis due to the extremely high delay predicted in the build scenario and the predicted high volumes at this location. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-100: Screening Analysis Locations – North, Alternative 3

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,540	C	24.4	3,525	D	53.0
Route 1/29	3,675	F	87.6	2,970	E	60.5	4,025	F	85.3	3,895	F	90.5
Route 1/28	5,700	F	226.2	6,050	F	157.7	6,885	F	198.5	7,390	F	139.5
Route 3/3A	875	A	9.5*	880	B	10.1*	2,225	E	47.2*	2,340	F	100.7*
Route 3/28	1,904	B	17.8	2,070	C	21.4	5,680	F	90.2	6,025	D	53.9
Route 15/ 29*	1,760	F	****	1,575	F	683.5*	1,945	F	161.4	1,985	C	26.2
Route 3/ North (Commercial) Gate	1,010	C	21.4*	970	C	15.7*	3,935	F	91.6	3,375	D	39.9
Route 3/ South (Main) Gate	1,260	D	32.1*	1,200	C	20.7*	5,945	D	51.6	6,275	F	149.6
Route 3/ Control Tree Drive (Residential) Gate	1,300	C	22.1*	2,745	F	51.4*	5,525	F	114.6	5,680	F	87.3
Route 9/ Andersen AFB North Gate	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	**2,035**	**F**	**1031.0***	**2,160**	**F**	**9051.1***

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-112 and Table I.3-10213. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-112 and Table I.3-113, no violations of the applicable NAAQS are predicted.

Table I.3-101: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – North, Alternative 3

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 3		No-Action		Alternative 3	
	a.m.	p.m	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/28	5.5	6.0	6.2	6.2	7.1	7.5	5.6	5.8	5.6	5.9
Route 9/Andersen AFB North Gate	3.8	4.5	3.8	4.5	4.2	4.5	3.8	4.5	3.6	4.5

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-102 Predicted Worst-Case 8-Hour CO Concentrations (ppm) – North, Alternative 3

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 3	No-Action	Alternative 3
Route 1/28	4.2	4.3	5.3	4.1	4.1
Route 9/Andersen AFB North Gate	3.2	3.2	3.2	3.2	3.2

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

North - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North under Alternative 1. The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-114.

Table I.3-103: Estimated Construction Emission Burden – North, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Central – Mobile Source Air Toxics

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-115. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-104: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 3, Central Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/8	3.54×10^{-6}	1.01×10^{-6}	10 in a million (1×10^{-5})	0.38	0.09	1
Route 4/7A	1.24×10^{-6}/1.49×10^{-6}	0.15×10^{-6}/0.64×10^{-6}		0.62/0.17	0.02/0.09	
Route 16/27	4.31×10^{-6}	2.12×10^{-6}		0.46	0.22	
Route 1 West of Route 30	0.24×10^{-6}	0.04×10^{-6}		0.03	0.01	

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 3 are provided in Table I.3-116. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

Table I.3-105: Average Daily Traffic for Major Roadways in Central Project Section under Alternative 3

	2014			*2030*		
Roadway	*No Build*	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1	79,337	97,400	23%	84,935	93,100	10%
Route 8	48,221	68,000	41%	53,248	60,400	13%
Route 18	49,196	92,800	89%	59,980	89,200	49%

The largest increase in AADT for the roadways presented in Table I.3-117 is predicted to occur under Route 18 in 2014. By applying a 2% truck percentage, the largest daily increase of 43,604 vehicles would result in a daily increase of 872 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Central - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-117, 34 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Twenty-eight (28) of these locations failed the screening criteria. The Route 16/27 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 4/7A intersection has the highest overall delay of any signalized intersection that failed the screening. This site was chosen for detailed analysis. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

The results of the microscale analysis are shown in. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-118 and Table I.3-119 no violations of the applicable NAAQS are predicted.

Table I.3-106: Screening Analysis Locations – Central, Alternative 3

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/26	5,910	E	75.8	6,060	F	229.8	7,120	F	89.4	7,615	F	209.1
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,705	F	151.1	7,625	F	399.6
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	4,160	F	120.2	4,435	F	157.1
Route 1/3	5,055	F	158.4	5,400	F	306.9	7,815	F	341.3	8,030	F	474.4
Route 1/16	5,905	D	52.2	6,410	F	305.5	8,270	F	232.2	8,540	F	340.3
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,775	E	66.6	6,355	E	71.5
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,860	E	71.0	6,435	F	112.3
Route 1/ 10A	6,935	F	82.9	7,055	F	117.2	7,515	F	129.6	8,170	F	193.6
Route 1/ 14B	6,120	E	60.5	6,485	F	91.8	6,480	E	79.8	6,965	E	78.5
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	176.8	8,635	F	315.8
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,795	F	148.5	7,475	F	253.3
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**7,835**	**F**	**102.7**	**8,965**	**F**	**155.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,565	C	30.5	7,440	F	107.2
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,265	C	29.7	7,850	F	958.7

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,945	C	27.4	3,910	C	23.0
Route 4/ 7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,830**	**F**	**586.7**	**5,240**	**F**	**339.2**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,705	F	199.7	4,700	E	65.9
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,785	D	39.6	1,785	E	55.9
Route 4/ 4A*	740	D	27.9*	925	C	21.2*	1,005	E	44.3*	960	C	21.9*
Route 7/ 7A*	1,985	F	77.7*	1,745	D	28.3*	1,920	D	28.3*	2,085	F	87.7*
Route 8/33 (East)	3,655	C	31.2	4,680	E	64.3	4,335	D	52.9	2,250	C	29.1
Route 8/10	6,410	F	122.0	6,295	F	265.3	6,495	F	137.9	7,090	F	171.9
Route 10/ 15	5,550	D	49.7	5,585	F	197.9	6,230	F	197.9	6,245	F	147.2
Route 16/ 27A	2,770	C	24.3	3,130	F	99.9	4,905	D	44.9	5,405	F	80.6
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**587.3**	**9,380**	**F**	**455.3**	**9,825**	**F**	**470.0**
Route 16/ 10A	6,178	F	874.2	4,880	F	459.9	5,570	F	210.3	7,710	F	524.0
Route 17/ 4A*	720	C	17.0*	760	C	16.5*	710	C	16.5*	785	C	18.5*
Route 26/ 25*	3,180	F	270.1	3,495	F	369.5	4,125	F	85.4	4,365	E	62.3
Route 26/ 15	1,680	F	134.8*	1,790	F	3450.7*	2,235	C	30.2	2,375	C	25.4
Route 28/ 27A	2,920	F	353.1*	2,565	F	528.0*	3,075	D	41.4	3,390	E	65.2
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	C	32.4	4,780	C	32.4	5,105	E	79.5
Route 15/ Road 1.16 M east of Route 26 (Second Gate)	1,040	NA	NA	1,010	C	22.1*	1,320	C	22.1*	1,410	C	21.1*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	D	48.1	7,230	D	48.1	7,740	F	94.2
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,795	E	73.5	2,125	F	209.1

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.

Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.
*Legend***:** NA = Not Applicable At The Time Of Analysis.

Table I.3-107: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Central, Alternative 3

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 3		No-Action		Alternative 3	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/8	6.0	6.4	6.1	6.4	7.3	7.6	5.8	5.4	6.2	6.4
Route 4/7A	5.3	3.8	4.8	5.4	5.1	5.6	4.6	5.0	4.6	5.1
Route 16/27	8.4	9.4	7.0	7.3	8.1	9.0	6.4	6.8	7.0	7.9

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-108: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Central, Alternative 3

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 3	No-Action	Alternative 3
Route 1/8	4.5	4.5	5.3	4.1	4.5
Route 4/7A	3.7	3.8	3.9	3.5	3.6
Route 16/27	6.6	5.1	6.3	4.8	5.5

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

Central - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-120.

Table I.3-109: Estimated Construction Emission Burden – Central, Alternative 3

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Apra Harbor – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-121. Based on these results, the following conclusions can be made:

- Maximum estimated changes in cancer risk at these locations are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and

- Maximum estimated changes in the total chronic hazard index are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-110: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 3 Apra Harbor

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/2A	-0.88×10^{-6}	-0.06×10^{-6}	10 in a million (1×10^{-5})	-0.09	-0.00	1

[1] Indicates increase or decrease from No Build condition.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 3 are provided in Table I.3-122 As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 1 near Route 18 in 2030. By applying a 2% truck percentage, the largest daily increase of 7,258 vehicles would result in a daily increase of 145 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-111: Average Daily Traffic for Major Roadways in Apra Harbor Project Section under Alternative 3

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1 near Route 18	46,407	49,800	7%	41,142	48,400	18%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Apra Harbor - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-123, three locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. One of these locations failed the screening criteria. The Route 1/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

Table I.3-112: Screening Analysis Locations – Apra Harbor, Alternative 3

Intersection	*No-Action*						*Build*					
	a.m.			*p.m.*			*a.m.*			*p.m.*		
	Volume	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,710	B	18.4	4,080	D	40.1
Route 1/ Polaris Pt	3,655	A	4.3	4,680	A	6.2	3,530	A	5.8	3,900	A	7.4
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	**4,270**	**E**	**67.5**	**4,755**	**D**	**54.1**

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.

Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-124 and Table I.3-125. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-124 and Table I.3-125 no violations of the applicable NAAQS are predicted.

Table I.3-113: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 3

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 3*		*No-Action*		*Alternative 3*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/2A	4.7	4.3	5.6	4.7	5.3	5.1	4.3	3.9	4.3	3.8

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-114: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 3

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 3*	*No-Action*	*Alternative 3*
Route 1/2A	3.3	3.9	3.7	3.0	3.0

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

Apra Harbor - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-126.

Table I.3-115: Estimated Construction Emission Burden – Apra Harbor, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

South – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-127. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-116: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 3, South Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 5/2A	0.39×10^{-6}	0.00×10^{-6}	10 in a million (1×10^{-5})	0.05	0.00	1

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 3 are provided in Table I.3-128. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 4 in 2014. By applying a 2% truck percentage, the largest daily increase of 1,767 vehicles would result in a daily increase of 35 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Table I.3-117: Average Daily Traffic for Major Roadways in South Project Section under Alternative 3

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 4	15,833	17,600	11%	21,504	20,000	-7%

South - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-129, four locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Two of these locations failed the screening criteria. The Route 5/2A intersection has the highest overall volume of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

Table I.3-118: Screening Analysis Locations – South, Alternative 3

Intersection	*No-Action*						*Build*					
	a.m.			*p.m.*			*a.m.*			*p.m.*		
	Volume	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*	*Volume*	*LOS*	*Delay*
Route 5/2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**2,960**	**E**	**55.1**	**3,235**	**C**	**22.8**
Route 5/17*	3,655	D	28.9*	4,680	E	47.8*	1,045	E	42.5*	1,080	F	128.5*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,385	C	30.6	2,355	C	24.9
Route 5/ Harmon Road*	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; NA = Not Applicable At The Time Of Analysis; **** = Delay exceeded maximum calculated value.

Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-130 and Table I.3-131. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations As shown in Table I.3-130 and Table I.3-131, no violations of the applicable NAAQS are predicted.

Table I.3-119: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – South, Alternative 3

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 3*		*No-Action*		*Alternative 3*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 5/2A	4.2	3.9	4.2	3.9	4.5	3.9	3.5	3.5	3.8	3.5

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-120: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – South, Alternative 3

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 3*	*No-Action*	*Alternative 3*
Route 5/2A	2.9	2.9	3.2	2.5	2.7

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

South - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). As shown in Table I.3-133 construction emissions are negligible.

Table I.3-121: Estimated Construction Emission Burden – South, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Proposed Mitigation Measures

Because the alternative is not predicted to cause a significant impact on air quality levels, no mitigation is proposed.

3.3.7.6 Alternative 8

Mesoscale Emissions Burden

As shown in Table I.3-133 regional emissions are predicted to increase in the range of 20% to 21% under Alternative 8, as compared to the no-action alternative. This is primarily due to the estimated 20% increase in VMT under Alternative 8.

Table I.3-122: Daily Regional Emission Burdens (TPY), Alternative 8

Scenario	*VMT*	*Speed*	*Emission Burden (**TPY**)*						
			CO	NOx	VOC	PM_{10}	$PM_{2.5}$	SO_2	CO_2
2030 No-Action Alternative	3,535,224	28.6	13,388	478	801	78	57	562	80,498,6
2030 Alternative 8	4,247,334	28.0	16,143	578	971	93	68	675	96,662,4
Percent Change from No-Action			21%	21%	21%	20%	20%	20%	20%

Legend: CO = carbon monoxide; VOC = volatile organic compounds; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; TPY = tons per year; NOx = nitrogen oxides; VMT = vehicle miles traveled.

North – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-123. Based on these results, the following conclusions can be made:

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.
- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

Table I.3-123: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 8, North Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors (x10^{-6})*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/28	2.50 x 10^{-6} / 0.39 x 10^{-6}	0.32 x 10^{-6} / 0.11 x 10^{-6}	10 in a million (1 x 10^{-5})	0.28 /0.05	0.05 / 0.01	1
Route 9/Andersen AFB North Gate	0.96 x 10^{-6}	0.26 x 10^{-6}		0.17	0.047	

[1] Indicates increase or decrease from No Build condition.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 8 are provided in Table I.3-136. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

The largest increase in AADT for the roadways presented in Table I.3-135 is predicted to occur on Route 3 South of Route 28 in 2030. By applying a 2% truck percentage, the largest daily increase of 65,500 vehicles would result in a daily increase of 1,310 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Table I.3-124: Average Daily Traffic for Major Roadways in North Project Section under Alternative 8

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 3 and North Commercial Gate	0	65,500	NA	0	45,200	NA
Route 3 South of Route 28	11,499	57,000	15.9%	12,070	25,000	107%

Microscale CO Impact Analysis and Construction Emissions Estimate

North - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-136, 10 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Five of these locations failed the screening criteria. The Route 1/28 intersection has the highest overall volume of all the intersections that failed the screening. This site was chosen for detailed analysis. The Route 9/Andersen AFB North Gate intersection was also chosen for analysis due to the extremely high delay predicted in the build scenario and the predicted high volumes at this location. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-125: Screening Analysis Locations – North, Alternative 8

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,540	C	24.4	3,525	D	53.0
Route 1/29	3,675	F	87.6	2,970	E	60.5	4,025	F	85.3	3,895	F	90.5
Route 1/28	5,700	F	226.2	6,050	F	157.7	6,885	F	198.5	7,390	F	139.5
Route 3/3A	875	A	9.5*	880	B	10.1*	2,020	D	27.0*	2,550	F	140.7*
Route 3/28	1,904	B	17.8	2,070	C	21.4	4,635	C	33.2	4,595	D	47.5
Route 15/29*	1,760	F	****	1,575	F	683.5*	1,915	C	32.9	1,880	C	30.0
Route 3/ North (Commercial) Gate	1,010	C	21.4*	970	C	15.7*	3,310	C	31.3	3,090	D	42.0
Route 3/ South (Main) Gate	1,260	D	32.1*	1,200	C	20.7*	5,085	E	58.7	4,950	F	81.7
Route 3/ Control Tree Drive (Residential) Gate	1,300	C	22.1*	2,745	F	51.4*	4,525	D	41.4	4,750	C	30.3
Route 9/ Andersen AFB North Gate	1,480	E	39.5*	1,385	D	35.1*	2,035	C	24.4	2,160	F	****

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-137 and Table I.3-138. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-137 and Table I.3-138 no violations of the applicable NAAQS are predicted.

Table I.3-126: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – North, Alternative 8

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 8*		*No-Action*		*Alternative 8*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/28	5.5	6.0	6.2	6.2	7.1	7.4	5.6	5.8	5.8	5.7
Route 9/Andersen AFB North Gate	3.8	4.5	3.8	4.5	4.2	4.5	3.8	4.5	3.6	4.5

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-127: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – North, Alternative 8

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 8*	*No-Action*	*Alternative 8*
Route 1/28	4.2	4.3	5.2	4.1	4.1
Route 9/Andersen AFB North Gate	3.2	3.2	3.2	3.2	3.2

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

North - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted. Using the estimated project schedule along with typical equipment requirements for specific tasks, emission burden estimates of CO, NOx, PM10, and PM2.5 were calculated. Equipment emissions were presumed to be Tier3, with high sulfur fuel as confirmed by the construction management team. Based on the preliminary schedule, the highest emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-139.

Table I.3-128: Estimated Construction Emission Burden – North, Alternative 8

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Central – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-140. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-129: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 8, Central Region

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/8	3.56×10^{-6}	1.31×10^{-6}	10 in a million (1×10^{-5})	0.31	0.13	1
Route 4/7A	0.63×10^{-6}/1.74×10^{-6}	0.08×10^{-6}/0.80×10^{-6}		0.55/0.20	0.00/0.09	
Route 16/27	3.70×10^{-6}	3.37×10^{-6}		0.42	0.29	
Route 1 West of Route 30	0.29×10^{-6}	0.05×10^{-6}		0.04	0.01	

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 8 are provided in Table I.3-141. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options.

The largest increase in AADT for the roadways presented in Table I.3-141 is predicted to occur under Route 18 in 2014. By applying a 2% truck percentage, the largest daily increase of 30,904 vehicles would result in a daily increase of 618 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Table I.3-130: Average Daily Traffic for Major Roadways in Central Project Section under Alternative 8

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1	79,337	100,500	27%	84,935	95,300	12%
Route 8	48,221	66,800	39%	53,248	59,700	12%
Route 18	49,196	80,100	63%	59,980	75,100	25%

Central - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-142, 34 locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. Twenty (20) of these locations failed the screening criteria. The Route 16/27 intersection has the third highest overall volume and the worst delay of the three highest volume intersections. This site was chosen for detailed analysis. The Route 4/7A intersection has the highest overall delay of any signalized intersection that failed the screening. This site was chosen for detailed analysis. These intersections represent the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from these sites represent the worst-case microscale CO impacts expected from the project.

Table I.3-131: Screening Analysis Locations – Central, Alternative 8

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/26	5,910	E	75.8	6,060	F	229.8	7,845	F	145.9	8,010	F	250.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	7,640	F	178.8	7,540	F	329.4
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	4,775	D	53.9	4,900	D	51.2
Route 1/3	5,055	F	158.4	5,400	F	306.9	5,455	E	70.5	6,335	E	64.7
Route 1/16	5,905	D	52.2	6,410	F	305.5	7,070	E	57.0	7,785	F	103.9
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,855	E	69.6	6,465	E	77.6
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,860	E	74.2	6,460	F	126.0
Route 1/10A	6,935	F	82.9	7,055	F	117.2	7,565	F	126.1	8,340	F	186.0
Route 1/14B	6,120	E	60.5	6,485	F	91.8	6,545	F	90.4	7,160	E	79.5
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,430	F	113.6	8,830	F	267.2
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,915	F	146.3	7,715	F	285.3
Route 1/8	7,255	F	107.6	7,915	F	94.1	8,060	E	77.8	9,545	F	150.4
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	33.6	7,605	D	35.5
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,245	D	38.1	4,835	D	44.9
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,915**	**F**	**372.9**	**5,680**	**F**	**654.2**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,655	F	198.7	4,695	E	71.0
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,790	D	40.1	1,775	E	56.2
Route 4/ 4A*	740	D	27.9*	925	C	21.2*	1,020	E	47.4*	950	C	24.0*
Route 7/ 7A*	1,985	F	77.7*	1,745	D	28.3*	2,325	F	174.7*	2,520	F	300.8*
Route 8/33 (East)	3,655	C	31.2	4,680	E	64.3	4,220	D	45.5	4,820	E	77.8
Route 8/10	6,410	F	122.0	6,295	F	265.3	6,890	F	177.3	7,530	F	218.4
Route 10/ 15	5,550	D	49.7	5,585	F	197.9	6,170	F	197.9	6,500	F	178.1
Route 16/ 27A	2,770	C	24.3	3,130	F	99.9	3,490	C	31.4	4,120	D	35.5
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**587.3**	**8,105**	**F**	**361.1**	**8,470**	**F**	**336.6**
Route 16/ 10A	6,178	F	874.2	4,880	F	459.9	7,085	F	582.9	7,655	F	488.7
Route 17/ 4A*	720	C	17.0*	760	C	16.5*	695	C	16.1*	785	C	18.6*
Route 26/ 25*	3,180	F	270.1	3,495	F	369.5	5,045	F	113.1	5,045	F	119.3
Route 26/ 15	1,680	F	134.8*	1,790	F	3450.7*	3,215	F	154.9	3,155	F	168.2
Route 28/ 27A	2,920	F	353.1*	2,565	F	528.0*	2,765	C	31.3	3,010	E	59.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	C	32.4	4,780	C	32.4	5,105	E	78.8
Route 15/ Road 1.16 M east of Route 26 (Second Gate)	1,040	NA	NA	1,010	C	22.1*	1,320	C	22.1*	1,410	C	22.6*

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 16/ Sabana Barrigada	4,535	F	****	4,960	D	48.1	4,765	NA	NA	5,830	NA	NA
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	NA	NA	2,350	NA	NA

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.
Legend: NA = Not Applicable At The Time Of Analysis

The results of the microscale analysis are shown in Table I.3-143 and Table I.3-144. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-143 and Table I.3-144, no violations of the applicable NAAQS are predicted.

Table I.3-132: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Central, Alternative 8

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 8*		*No-Action*		*Alternative 8*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 1/8	6.0	6.4	6.1	6.4	7.3	7.4	5.8	5.4	5.6	6.0
Route 4/7A	5.3	3.8	4.8	5.4	5.2	5.3	4.6	5.0	4.6	5.0
Route 16/27	8.4	9.4	7.0	7.3	8.3	9.4	6.4	6.8	7.1	8.0

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-133: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Central, Alternative 8

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 8*	*No-Action*	*Alternative 8*
Route 1/8	4.5	4.5	5.2	4.1	4.2
Route 4/7A	3.7	3.8	3.7	3.5	3.5
Route 16/27	6.6	5.1	6.6	4.8	5.6

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

Central - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-145.

Table I.3-134: Estimated Construction Emission Burden – Central, Alternative 8

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	0.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Apra Harbor – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-146. Based on these results, the following conclusions can be made:

- Maximum estimated changes in cancer risk at these locations are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated changes in the total chronic hazard index are expected to decrease at any of the receptors analyzed due to the project. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-135: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 8 Apra Harbor

Analysis Site	*Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*Cancer Risk Threshold*	*Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors*		*USEPA Hazard Index*
	2014	2030		2014	2030	
Route 1/2A	-0.82×10^{-6}	-0.06×10^{-6}	10 in a million (1×10^{-5})	-0.09	0.0	1

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 8 are provided in Table I.3-147.

The largest increase in AADT for the roadways presented in Table I.3-148 is predicted to occur under Route 1 near Route 18 in 2030. By applying a 2% truck percentage, the largest daily increase of 7,458 vehicles would result in a daily increase of 149 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Table I.3-136: Average Daily Traffic for Major Roadways in Apra Harbor Project Section under Alternative 8

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 1 near Route 18	46,407	49,800	7%	41,142	48,600	18%

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Apra Harbor - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-148, three locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. One of these locations failed the screening criteria. The Route 1/2A intersection has the highest overall volume and highest delay of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

Table I.3-137: Screening Analysis Locations – Apra Harbor, Alternative 8

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,695	B	14.3	4,165	D	43.3
Route 1/ Polaris Pt	3,655	A	4.3	4,680	A	6.2	3,605	A	6.8	3,910	A	7.5
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	**4,285**	**E**	**67.5**	**4,785**	**E**	**57.5**

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis.

The results of the microscale analysis are shown in Table I.3-138 and Table I.3-139. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-138 and Table I.3-139, no violations of the applicable NAAQS are predicted.

Table I.3-138: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 8

Analysis Site	Existing		2014				2030			
			No-Action		Alternative 8		No-Action		Alternative 8	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
Route 1/2A	4.7	4.3	5.6	4.7	5.3	5.1	4.3	3.9	4.3	3.9

Notes: 1-hour CO NAAQS = 35 ppm.
Includes a background concentration of 2 ppm.

Table I.3-139: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – Apra Harbor, Alternative 8

Analysis Site	Existing	2014		2030	
		No-Action	Alternative 8	No-Action	Alternative 8
Route 1/2A	3.3	3.9	3.7	3.0	3.0

Notes: 8-hour CO NAAQS = 9 ppm.
Includes a background concentration of 1.4 ppm.

Apra Harbor - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed construction emissions analysis was conducted using the same method as described for North (Alternative 1). The highest predicted construction emissions per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-151.

Table I.3-140:Estimated Construction Emission Burden – Apra Harbor, Alternative 8

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

South – Mobile Source Air Toxics and Particulate Matter

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Table I.3-141. Based on these results, the following conclusions can be made:

- Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSATs are considered acceptable; and
- Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSATs are considered acceptable.

In addition, based on proposed USEPA regulations to reduce air toxics, future cancer and non-cancer risks, under both No Build and Build conditions are less than existing risks in most cases.

Table I.3-141: Estimated Project Related Impacts Compared to Cancer Risk Threshold and Hazard Index, Alternative 8, South Region

Analysis Site	Estimated Cancer Risk Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors		Cancer Risk Threshold	Estimated Non-Cancer Chronic Hazard Index Increase or Decrease[1] at Sidewalk Receptors/Actual Receptors		USEPA Hazard Index
	2014	2030		2014	2030	
Route 5/2A	0.50×10^{-6}	0.09×10^{-6}	10 in a million (1×10^{-5})	0.046	0.01	1

[1] Indicates increase or decrease from No Build condition.

Particulate matter impacts would be the same as those for the North Region, Alternative 1. The average daily traffic (ADT) on the highest volume roadways under the No Build and Build Alternative 8 are provided in Table I.3-142. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2% for both the No Build and Build options. As shown in this table, the largest increase in AADT for the roadways presented is predicted to occur at Route 4 in 2014. By applying a 2% truck percentage, the largest daily increase of 1,767 vehicles would result in a daily increase of 35 trucks. This is substantially below the FHWA example for a new highway project of 125,000 AADT with 8% trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be a project of air quality concern (i.e., an expanded highway with a significant number of or significant increase in diesel vehicles).

Based on this and the discussion in the North Region Alternative 1, the project does not qualify as a project of air quality concern.

Table I.3-142: Average Daily Traffic for Major Roadways in South Project Section under Alternative 8

Roadway	*2014*			*2030*		
	No Build	*Build*	*% Change*	*No Build*	*Build*	*% Change*
Route 4	15,833	17,600	11%	21,504	19,900	-1.0%

South - Microscale CO Analysis

A screening analysis was performed to determine which intersections could potentially degrade air quality levels due to increased delay, volume, or worsening LOS due to the project. As shown in Table I.3-143 four locations were screened based on changes in intersection volumes, delay, and LOS between the no-action and build alternatives. One of these locations failed the screening criteria. The Route 5/2A intersection has the highest overall volume of all the signalized intersections that failed the screening. This site was chosen for detailed analysis. This intersection represents the worst-case combination of volumes, LOS, and delay of the intersections screened. As such, the predicted CO levels from this site represent the worst-case microscale CO impacts expected from the project.

Table I.3-143: Screening Analysis Locations – South Region, Alternative 8

Intersection	No-Action						Build					
	a.m.			p.m.			a.m.			p.m.		
	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay
Route 5/ 2A	2,885	D	53.0	3,115	C	22.7	3,115	E	79.9	3,335	C	25.9
Route 5/ 17*	3,655	D	28.9*	4,680	E	47.8*	1,040	B	14.8*	1,100	E	42.4*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	30.7	2,355	C	27.0
Route 5/ Harmon Road*	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; **** = Delay exceeded maximum calculated value.
Indicates sites that failed the screening evaluation.

The results of the microscale analysis are shown in Table I.3-144 and Table I.3-145. The values in these tables, using the same analysis techniques and parameters as those applied for North (Alternative 1), represent the predicted worst-case CO concentrations. As shown in Table I.3-144 and Table I.3-145, no violations of the applicable NAAQS are predicted.

Table I.3-144: Predicted Worst-Case 1-Hour CO Concentrations (ppm) – South Region, Alternative 8

Analysis Site	*Existing*		*2014*				*2030*			
			No-Action		*Alternative 8*		*No-Action*		*Alternative 8*	
	a.m.	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*	*a.m.*	*p.m.*
Route 5/2A	4.2	3.9	4.2	3.9	4.5	4.0	3.5	3.5	3.9	3.7

NOTES: *1-HOUR CO NAAQS = 35 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 2 PPM.

Table I.3-145: Predicted Worst-Case 8-Hour CO Concentrations (ppm) – South Region, Alternative 8

Analysis Site	*Existing*	*2014*		*2030*	
		No-Action	*Alternative 8*	*No-Action*	*Alternative 8*
Route 5/2A	2.9	2.9	3.2	2.5	2.7

NOTES: *8-HOUR CO NAAQS = 9 PPM.*
INCLUDES A BACKGROUND CONCENTRATION OF 1.4 PPM.

South - Construction Emissions Estimate

To determine the temporary air quality impacts arising from construction of the project, a detailed emission construction analysis was conducted using the same method as described for North (Alternative 1). As shown in Table I.3-146, construction emissions are negligible.

Table I.3-146: Estimated Construction Emission Burden – South, Alternative 8

	CO	*NO$_x$*	*PM$_{10}$*	*PM$_{2.5}$*	*VOC*	*SO$_2$*	*CO$_2$*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Proposed Mitigation Measures

Because the alternative is not predicted to cause a significant impact on air quality levels, no mitigation is proposed.

3.4 CONSTRUCTION ACTIVITY EMISSIONS

Construction-related emissions were estimated for each component of the proposed action. The different construction activities associated with different components of the proposed action are described below:

Marine Corps Relocation to Guam (Volume 2 of EIS) proposes the following five land use functions: Airfield Operations, Waterfront Operations, Main Cantonment, Family Housing, and Training. For the training function, the facilities can be further divided into three categories: firing ranges, non-fire maneuver ranges, and aviation training ranges. Among the four alternatives, these proposed training facilities vary depending on the land use function, location, and quantity of non-DoD land to be acquired. Most project components that would affect potential air quality conditions remain the same for each alternative including:

- The scale of construction
- Airfield operations
- Waterfront operations
- Aviation training operations
- The scale of ground training

The construction effort for all airfield, waterfront, and training projects is assumed to be the same, regardless of location. Therefore, the air emissions for these projects calculated for Alternative 1 are assumed to be representative of the other three alternatives (i.e., Alternatives 2, 3, and 8). Although the total building space does not vary by alternative for the main cantonment project component, the total size of earth disturbance under each alternative does vary slightly. As a result, the pollutant emissions associated with the main cantonment construction activity were estimated individually for each alternative.

Construction activities, including the operation of construction equipment, trucks, and workers' commuting vehicles, may have short-term air quality impacts. In estimating construction-related criteria pollutants and CO2 emissions, the usage of equipment, the likely duration of each activity, and manpower estimates for the construction were based on the information described in the EIS Volume 2 (U.S. Navy and Joint Guam Program Office in progress) for future project-associated construction activities. It is assumed for the emissions estimate purposes that major construction activities would begin in 2011 and last through 2014 with minimal effort during 2010 for all projects except for the construction of main cantonment. The construction of main cantonment is assumed to occur from 2011 to 2016 based on the construction cost profile projected for the proposed action.

Marine Corps Relocation - Training on Tinian (Volume 3 of EIS) would require the construction of a Range Training Area (RTA) under each alternative considered which consists of four proposed live-fire ranges (platoon battle course, automated combat pistol range, rifle known distance range, and field firing range). Construction activities such as the operation of construction equipment and trucks may have short-term air quality impacts. Although the emissions from construction workers' commuting vehicles are considered part of the overall construction emissions, it is anticipated they are negligible given the scale of construction activities and the relatively low level of emissions as compared to trucks. As such, the emission component from workers' commuting vehicles is not considered here, as it is relatively small and cannot be reasonably predicted.

Aircraft Carrier Berthing (Volume 4 of EIS) focuses on the proposed construction of a new deep-draft wharf with shoreside infrastructure improvements, creating the capability to support a transient nuclear powered aircraft carrier in Apra Harbor, Guam. Under the proposed action with a transient-capable port, there would be approximately three visits per year for up to approximately 21 days per visit, or combination thereof, for a total of approximately 63 days in port. The longer transient visits would interfere with existing munitions operations and therefore require a new deep-draft wharf that can accommodate the transient aircraft carrier.

Estimates on construction activities were calculated to identify equipment, material, and manpower requirements for the construction associated with the proposed aircraft carrier berthing project at Polaris Point. Assumptions were made to develop a list of major construction items, necessary equipment, and productivity levels necessary for the completed construction of Polaris Point or Former Ship Repair Facility (SRF) including, but not limited to: shoreside structure prototypes, a bermed fuel tank, an electric substation, stormwater management, the Morale, Welfare and Recreation (MWR) area, a sewer pump station, a Bilge Oily Waste Treatment System (BOWTS) pump station, a BOWTS pump station prototype, and the wharf and related dredging activities.

Army Air and Missile Defense Task Force (Volume 5 of EIS) proposes the following three missile components: The Terminal High Altitude Area Defense (THAAD) system is a long-range, land based theater defense weapon which acts as the upper tier of defense against ballistic missiles; Patriot Missiles target short-range ballistic missiles which threaten the THAAD or other civilian or military assets on Guam; and Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) engages targets to beyond line-of-sight and defends against the air threat from unmanned aerial vehicles and cruise missiles.

Three key elements of the proposed action include personnel, facilities, and operations requiring construction of the administration and maintenance facilities, bachelor housing, family housing, and roads associated with facilities at the proposed sites. Assumptions were made to develop a list of major construction items, necessary equipment, and productivity levels necessary for the completed installation of the Army AMDTF within the Marine Corps site on Guam. This list includes prototype structures for administration and maintenance components, and prototypes including unique elements for munitions storage and the weapons emplacement components. The calculated total construction emissions from equipment and trucks with potential to occur between 2011 and 2014 are assumed to be evenly distributed among those years.

Related Actions – Utilities and Off Base Roadway Projects on Guam (Volume 6 of EIS) would increase the demand on power, water, wastewater and solid waste utilities as part of the proposed military buildup on Guam associated with the relocation of the Marine Corps, the Navy aircraft carrier berthing, and Army

Air and Missile Defense Task Force (AMDTF). The Navy conducted utility studies for power, water, wastewater, and solid waste that assumed that the construction workforce would reside off base and would be served by Guam public utilities at their place of residence. Construction activities involving the operation of construction equipment, trucks, and workers' commuting vehicles may have short-term air quality impacts. Given the lack of a specific construction schedule for each applicable project during the early planning stage, the overall length of utility construction for each project is assumed to be four years from 2011 through 2014.

To determine the temporary air quality impacts arising from the construction of off base roadway projects a detailed emission construction analysis was conducted. Using the estimated project schedule, along with typical equipment requirements for specific tasks, emission burden estimates of criteria pollutants and GHG emissions in terms of CO_2 emissions were calculated. Emission equipment emissions have been regulated to be Tier 3 or better as discussed in section 3.3.7. Based on the preliminary schedule, the highest emissions levels per year, per month, and the year that these emissions are predicted to occur are shown in Table I.3-174 through Table I.3-177.

Because no specific information regarding sizes or types of construction is provided in the case of certain components, a series of construction prototypes was developed to represent these components. Estimates were developed for those components for which adequate specific information is available; however when the construction was considered similar to one of the prototypes, the prototype and scaling method were used.

Each prototype is designed to be general enough to accommodate the more traditional development types specified in the Military's planning facility codes or Command Code Numbers (CCN), and the diverse facilities required to implement the proposed action and associated action components. The prototypes used include:

- **Office Building –** Buildings of this type generally have a masonry envelope, decorative exterior veneer, and glazing. There is significant subdivision of the interior space by drywall partitions into finished areas to provide offices and/or classroom facilities. Significant mechanical systems are associated with this building type, primarily heating, ventilation, and air-conditioning (HVAC), electrical systems, and water/sewerage service.
- **Commercial Building –** Buildings of this type are generally of steel frame construction with masonry envelope and decorative exterior veneer, providing large, high, clear areas for both merchandise display and inventory storage. There is generally minimal glazing (except for the entrance areas). The main retail and storage areas typically have minimal finishes along the exterior walls only. A relatively small (~10%) portion of the overall floor area is finished in an office-type manner, providing space for administrative and support functions (store manager's office, restrooms, etc.). Significant mechanical systems are associated with this building type, primarily HVAC systems. Water/sewerage systems are of relatively small scale, as they only support the limited amount of office-type space.
- **Pre-Engineered Structures –** Buildings of this type are generally light-weight steel-frame and sheet metal-clad structure, often providing enclosed storage areas. Minimal mechanical systems are usually provided, generally just enough to provide adequate lighting and protection against temperature or humidity extremes. Given the climate on Guam, it is assumed that protection against temperature extremes is not required.
- **Industrial Building –** Buildings of this type are generally of single-level steel frame construction (to allow for roof-mounting of lifting equipment) with masonry envelope and lightweight cladding as veneer, minimal glazing, and large, high, clear spaces to allow for the installation of heavy equipment. A relatively small (~10%) portion of the overall floor area would be finished in

an office-type manner, providing space for administrative and support functions. Significant mechanical systems are associated with this building type, primarily HVAC, high-capacity electricity supply, and often additional mechanical systems such as steam and compressed air. Water/sewerage systems are generally of a smaller scale, sufficient to service the administration area only.

- **Hangar –** Buildings of this type are generally of tall, single-level steel frame construction with masonry envelope and lightweight cladding as veneer, and have one open side to permit aircraft entry, no glazing, and large, high, clear interior spans provided through the use of a truss-type lightweight roof. A small office-type administration area (~10% of the overall floor space) is usually provided. Significant mechanical systems are associated with this building type, primarily HVAC, high-capacity electricity supply, and often additional mechanical systems such as steam and compressed air. Water/sewerage systems are generally of a smaller scale to service the administration area only.
- **Warehouse Building –** Buildings of this type are generally large-footprint, single-level construction with masonry envelope and lightweight cladding as veneer, and large, high, clear interior spans provided through the use of a truss-type lightweight roof. Minimal mechanical systems are usually provided, often sufficient only to provide adequate lighting and protection against temperature or humidity extremes.
- **Residential (Multiple Unit) Building –** Buildings of this type are generally of multi-level, steel frame construction with masonry envelope, decorative exterior veneer, and glazing, with significant subdivision of the interior space by drywall partition into finished areas to provide enclosed living quarters. There are significant mechanical systems associated with this building type, including HVAC systems designed to support a residential building use, and electricity, natural gas and water/sewerage service provided to each unit.
- **Residential (Single-family Units) Building –** These are assumed to be two-story single-family residences, without basement facilities, of wood-frame construction on on-grade slab. Each unit is assumed to be 1,735 square feet (ft^2) (161 square meters). There are significant mechanical systems associated with this building type, including HVAC systems designed to support a residential building use, and electricity, natural gas and water/sewerage service.
- **Site Preparation –** It is assumed that typical site clearing and rough and fine grading would be done as a single zone-wide job, with the specific needs of individual structures reflected in the final overall grading plans. It is also assumed that none of the structures constructed in the Main Cantonment incorporate basement levels, so no mass excavation would be required.
- **Utility and Road/Sidewalk Installation –** Because site construction, including grading, is expected to be done on a zone-wide basis in the Main Cantonment, an underground utility infrastructure can be economically installed during road construction without the need for separate trenching and backfilling. Zone-wide utilities to be installed would include electricity, water, natural gas, sanitary and storm sewerage, and telecommunications infrastructure. It is assumed that any covered site area outside of building footprint can be treated as a finished roadway. This roadway is assumed to be a 50-foot (15-meter) wide flexible asphalt pavement with curbs, gutters and an 8-foot (2.4-meter) wide concrete sidewalk on either side (66-foot [20-meter] total average width), with three manholes (one each for sanitary sewer, storm sewer, and energy/communications infrastructure access), eight storm drains, and four fire hydrants every 1,000 linear feet (305 linear meters) of roadway.
- **Vehicle Pavement** – This type of pavement is used for parking areas and access roads intended for general automotive use (including large, wheel mounted maintenance and military

equipment). Generally, this would include rough grading, a 6" thick base course and a 3" thick asphalt wearing course.

- **Aircraft Pavement** – This type of pavement is associated with airfield developments, and is used to handle the higher loads associated with aircraft traffic. Generally, this would include rough grading, an 8"-thick sub-base course, a 6"-thick base course, a 4"-thick asphalt binder course, and a 3"-thick asphalt wearing course.

To complete the construction estimate, the CCN Code data and planning area specifications provided for each alternative in the EIS were used to determine the distinct structural elements required in the proposed action. Accordingly, each element was then extrapolated on a square-footage basis and associated with one of the 12 prototypes described above.

The *2003 RSMeans Facilities Construction Cost Data* (RS Means 2003a) manual was used to assign construction materials, equipment use and duration and manpower requirements to each prototype. The manual provides planning level estimates for construction materials, equipment use and duration information, and manpower requirements for construction and development. If construction material information, equipment use and duration, and manpower requirements were available then that information was used.

For illustrative purposes, the following paragraphs detail the assumptions made in 1) developing one prototype, the Office Building prototype and 2) forecasting CVN berthing project activity. Other prototypes and activities were developed in similar manners.

Construction Activity Assumptions for Office Building Prototype

First, the dimensions of the buildings were estimated. In this case, the prototype office building would be 100 ft by 200 ft (units are only provided in the U.S. customary system for ease), for a total surface area of 20,000 ft^2. 40% of the space would be subdivided into offices (assumed to be 20 ft by 20 ft each) and the remainder would be divided into larger, 60 ft by 40 ft. "open" workspaces. Thus, there would be a total of 20 offices with 80 linear feet (LF) of wall each, and 5 common areas with 200 LF of wall each. The total wall length, therefore, would 2,600 LF. This in turn should be divided by two to account for double-sided walls, so the total wall length to be installed would be 1,300 LF.

Next, assumptions for construction materials, equipment use and duration, and manpower requirements were developed using the *RSMeans* data, as presented below.

- Foundation:
  - Footprint site preparation: assumes gravel placed over entire building footprint, 12" thick lift x 20,000 ft^2 = 741 cy, use gravel, bank run, compacted, 12" deep
  - Assumes base slab concrete is formed in 40-ft by 20-ft sections, creating 25 "panels" to be laid, with 1,200 LF (6 x 200 LF) of forming along long edges and 600 LF (6 x 100 LF) of forming along short edges for a total of 1,800 LF forms. Wood edge forms to be used for depressed slabs to 24" high
  - Add rebar, assumes 8 LF of #8 rebar per ft^2 of slab = 21.36 lb/SF; total = 427,200 lb = 214 tons. Use typical in place rebar over 50 ton lots
  - For concrete, assumes 15" thick slab. 20,000 ft^2 x 15 in. = 25,000 CF = 926 CY. Use slab on grade over 6" thick, pumped
- Enclosure:

- Primary enclosure square footage is 2 x (200 LF + 100 LF) x 20 ft (assumed building. height) = 12,000 ft^2; use concrete block 3,500 psi, high strength, 8"x16", 8" thick
- External finish, use standard red bricks, running bond, 12,000 ft^2
- Windows; assumes one every 6.25-ft O.C. = 96 windows, use solid vinyl, premium quality, double-insulated glass

- Roof:
  - Steel framing, SLH spans to 200', 80SLH20, 75 lb/f, assumes spans are 8.5-ft O.C. along long dimension, so 27 lines x 100 LF = 2,700 LF
  - Steel roofing on steel frame, flat profile, 1-3/4" standing seams 10" wide, 22 gallons (ga)., 20,000 ft^2
- Mechanical systems:
  - Hot water: commercial gas fired 260 MBH input 250 gph
  - Boiler for heating system: Gas boiler, hot water, 2,856 BTUs in thousands (MBH) output
  - Air conditioning: rooftop, 300 ton unit Heat & AC distribution – assumes forced air, assumes 4 lb per LF of duct, 5 lines of ductwork along long dimension = 5 x (200 LF + 20 LF riser) = 1,100 LF x 4 pounds (lb)/LF = 4,400 lbs. Use galvanized steel ductwork, over 5,000 lb
  - Sprinkler system: assumes 5 lines along 200-ft length of building. 5 lines x (200 ft per line + 20 ft. riser) = 1,100. Use schedule 40 steel pipe with couplings and hangars, 2" diameter
- Interior construction and finishes:
  - Interior wall assembly, use 1/2" interior gypsum, taped both sides, 25 ga metal studs, assumes 1,300 LF x 15' high walls (remainder for mechanical space) = 19,500 ft^2
  - Door assemblies – assumes 2 per office x 20 offices = 40 doors, birch solid core pre-hung door
  - Subfloor – use ½" thick plywood, CDX, pneumatic nailed, 20,000 ft^2
  - Flooring – use vinyl tile, 12" x 12", 0.050" thick, 20,000 ft^2
  - Ceiling – use suspended ceiling, regular 2' x 2' x 5/8" tile on 9/16" grid, 20,000 ft^2
- Interior utility DoD lands (for those based on wall length, already calculated at 1,300 LF):
  - Electrical wiring, use 600 volt BX cable, 3 conductor, solid, wall length
  - Assumes one electrical outlet every 3 LF of wall, round to 433 electrical outlets, use square 4" outlet box for Romex (brand of insulated wire) or BX cable (armored cable with flexible steel or aluminum sheath over conductors), with bracket as equivalent measure
  - Assumes lighting provided on 10-ft centers along long axis of building, thus 9 lines of 200-ft each = 1,800 LF plus (2) 100-ft long transverse lines + (2) 20 ft risers = 2,040 LF total
    - Conduit, use 1-1/2" galvanized steel
    - Electrical wiring, use 600 volt BX cable, 3 conductor, solid
    - Fixtures – Use pendent mounted industrial, 4' long 2-60 watt HO, 50 per line (450 total), 450 units
  - Category (Cat) 5 unshielded twisted pair (UTP) (telecom), assumes 5 lines per office and 25 per common area, average run of 150 LF; total = 33,750 LF

- Cat 5 UTP jacks, RJ-45, assumes 5 per office and 25 per common area = 225 jacks
- Coaxial cable, RG 59, fire rated, 75 ohm
- Assumes 4 plumbed rooms (kitchen, restrooms, utility closet), 20 fixture DoD lands per restroom and 5 each in the kitchen and utility room = 50 fixtures, use lavatories, white trim, 20"x 18" as equivalent measure
- Internal water plumbing, 2,600 LF (cold & hot water) Type L tubing, couplings & hangers 10' O.C., 1"
- Internal sanitary plumbing, PVC pipe, 4", hangers & couplings 10' O.C., schedule 40

Given the aggregate floor area ratios (1.56 for the entire Main Cantonment, exclusive of the Family Housing Areas), it was assumed that all structures except residential structures are single-story. The floor area ratio of 1.56 includes several multiple-unit type residential structures that are described as being three or four stories in height. Although some non-residential spaces are described as multi-story, the aggregate numbers suggest that the floor area ratio for non-residential structures is closer to 1.0 than to 1.56. However, the prototypes were pro-rated on the basis of entire building area (not just the building footprint), thereby capturing the materials and effort necessary to construct the entire project. Any error introduced by the assumption of single-story construction (such as productivity losses from working above ground) are expected to be minimal, because only 5 of the 150 proposed buildings classified as non-residential in the Main Cantonment are three-story structures (i.e., there are no buildings taller than three stories).

CVN Berthing Project including Dredging Activity Assumptions

Detail estimate to identify equipment, material and manpower requirements for the construction associated with the proposed CVN berthing project in Guam are described below:

Shoreside Structures

An approximately 6-acre area is required adjacent to the proposed wharf for shoreside support structures. This entire area requires clearing, grubbing, grading, utility installation and pavement. Within this area, five separate buildings (Port Operations, Air Compressor, Water Treatment, Boiler House, Guard Booth), an unspecified number of watch towers, a 13,210-gallon bermed fuel tank, an electrical substation, a bilge oily-waste pump station, and a bilge oily-waste treatment system (BOWTS) would be provided within the main shoreside area. In addition, a morale, welfare and recreation (MWR) area would be provided away from the immediate shoreside support area. For the purposes of this estimate, it is assumed that the prototype structures developed for the Main Cantonment described previously can be used for the buildings, general site preparation, and installation of site-wide utilities and pavement in the immediate shoreside and MWR areas.

Utilities

Specific utility elements not estimated by use of the site-wide utilities prototype identified in the shoreside structures section are included in this section. Utility piping associated with the berth itself is included in the wharf construction section. The items considered include:

- Electrical substation
- Stormwater management – assume that creation of swale occurs during sitewide grading. The additional stormwater management item is the cyclonic separator – use item 11310-100-0600, oil/water separator.

- MWR area – estimated at approximately 0.5 acres. It is assumed that the general site preparation and utility & roadway installation prototypes can be used for this element. Since the services to be provided on the MWR pad will be of a temporary nature, it is assumed that pre-packaged units will be deployed to the MWR pad, and that no additional construction estimates are required.
- Sewer pump station
- BOWTS – assume BOWTS pump station is identical to sewage pump station, and that BOWTS piping is included in on-wharf utilities estimated in the wharf construction section.

Wharf

This section covers the construction of the physical wharf, including installation of utility piping and other wharf appurtenances. Since Nimitz-class carriers are 1,115-ft long, it was assumed that the wharf will be 1,500 ft by 90 ft to provide docking flexibility. The items considered include:

- Foundations
- Deck – assuming 18" concrete deck poured on q-deck.
- Fendering/Mooring Systems
- Utility runs – assuming that the utility trench is formed into deck during pouring of slab. Utilities to be provided in trench include steam, compressed air, pure water, potable water, wastewater, electricity and communications. Number of utility mounds to be installed based on quantities provided for prior CVN berth estimate (NAS North Island).

Dredging

Approximately 608,000 Cubic Yard (CY) of dredging is required and it is assumed that all dredging work will be done using mechanical dredging method. The assumptions used include:

- A barge with 90-ton crane, 2,000 HP of installed power and a 15-CY bucket would be used with an average productivity of 200 CY per hour.
- One 8-hour shift per day and 5 days per week.
- Total working weeks are evenly split into 2014 and 2015.

Therefore, an average of 38 weeks per year of dredging would occur over two dredging years based on:

- Total dredging weeks = 608,000 CY/(200 CY/hour x 8 hour/day x 5 day/week) = 76 weeks (over 2 years)

The weekly duration for each activity was assumed to be eight hours per day, five days per week. All construction equipment was assumed to be diesel powered unless otherwise noted. The emissions estimate assumes for only one piece of equipment because the same amount of construction activities can be accomplished by using one piece of equipment for one week, or can be shortened to half a week by using two pieces simultaneously. The key input in the emissions calculations is the total number of equipment hours required to complete the work. Therefore, the input of one piece of equipment used in the calculations is only for the purposes of completing them and does not reflect the actual number of pieces equipment that will be used on site during construction.

Pieces of equipment to be used for the construction and demolition activities include, but are not limited to:

- Backhoe loaders
- Chain saws
- Chipping machines
- Compressors
- Concrete pumps
- Cranes
- Drill rig and augurs
- Dozers
- Dump trucks
- Excavators
- Front end loaders
- Gas engine vibrators
- Gas welding machines
- Generators
- Gradalls
- Graders
- Hammers
- Pavement removers
- Pavement breakers
- Pavers
- Pumps
- Rammers/tampers
- Rollers
- Trenchers
- Tug boats

Equipment Emission Estimate

Estimates of the operational emissions from construction equipment were developed based on the estimated hours of equipment use and the emission factors for each type of equipment. Emission factors for VOC, NO_x, and CO were taken from USEPA's NONROAD emission factor model and the national default model inputs for nonroad engines, equipment, and vehicles of interest provided with the model (USEPA December 2008). Emission factors for SO_2 and PM were based on USEPA's NONROAD emission factor model incorporating the use of high sulfur content (i.e., 0.5 %). The average equipment horsepower (hp) values and equipment power load factors were obtained in association with the NONROAD emission factors.

A maximum sulfur content of 0.5% was used based on USEPA's Heavy-Duty Standards/Diesel Fuel Regulatory Impact Analysis (RIA) (USEPA 2000). Based on the RIA, data observed in 1992 shows that

No. 2 diesel fuel imports actually had sulfur content ranging from 0.39% to 0.5%. Therefore, using the actual highest sulfur content observed in 1992 (0.5 %) for vehicles in this analysis is considered appropriate and conservative and is also coincident with the highest sulfur content fuel input available in the NONROAD model. It should also be noted that with the introduction of the Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements (40 CFR Parts 69, 80, and 86) in 2006, refiners were required to start producing diesel fuel for use in highway vehicles with a sulfur content of no more than 15 ppm. Therefore, the sulfur content of fuels since 1992 has decreased in general although Guam has been granted an exemption from using low sulfur fuel (see Volume 6, Section 7.2). DoD is currently examining the potential use of ultra low sulfur fuel on Guam, so that the actual sulfur content used may be far lower than the results provided here.

Because the operational activity data presented in RSMeans' cost data books are generated based on the overall length of equipment presence duration on site, an actual running time factor (i.e., actual usage factor) was employed to determine actual equipment usage hours for the purpose of estimating equipment emissions. The usage factor for each equipment type was obtained fromFHWA *Roadway Construction Noise Model User's Guide* (FHWA January 2006). Emission factors related to construction-associated delivery trucks were obtained using the USEPA Mobile6 emission factor model (USEPA October 2002) which provides an emission factor database for various truck classifications.

Emission factors (in grams of pollutant per hour per horsepower) were multiplied by the estimated running time and equipment average horsepower to calculate the total grams of pollutant from each piece of equipment. Finally, the total grams of pollutant were converted to tons of pollutant.

The USEPA recommends the following formula to calculate hourly emissions from nonroad engine sources including cranes, backhoes, etc.:

$$M_i = N \times HP \times LF \times EF_i$$

Where:

M_i = mass of emissions of *i*th pollutants during inventory period;

N = source population (units);

HP = average rated horsepower;

LF = typical load factor; and

EF_i = average emissions of *i*th pollutant per unit of use (e.g., grams per horsepower-hour).

Typical load factor values were obtained from *Nonroad Engine Emissions Model Worksheet* (USEPA December 2008). Equipment running times were estimated based on an 8 hour per day schedule. A sample calculation for NO_x emissions from a 90-ton crane engine during the Marine Corps installation to Guam follows:

Operational Hours = 90 hours (1 crane x 14.1 weeks x 5 days x 8 hr/day)

Operational Emissions = 90 hours x 231 hp x 43% x 5.14 grams/hp-hr

= 0.051 tons

Table I.3-147 provides the emissions estimates associated with Marine Corps for Airfield/North.

Table I.3-147: Marine Corps Construction Equipment Emissions – Airfield / North

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horsepower[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	9.2	50	183	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.026	0.032	0.007	0.007	0.071	0.006	8.505
Compressor, 250 cfm	1	23.2	40	371	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.026	0.035	0.008	0.008	0.079	0.008	8.349
Concrete pump, small	1	7.7	50	153	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.007	0.012	0.003	0.003	0.024	0.003	2.167
Crane, 90-ton	1	14.1	16	90	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.016	0.013	0.003	0.003	0.051	0.003	5.257
Crane, SP, 12 ton	1	9.1	16	58	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.010	0.008	0.002	0.002	0.033	0.002	3.374
Diesel hammer, 41k ft-lb	1	4.2	40	34	200	59	1.64	1.93	0.50	0.48	4.72	0.33	539.34	0.012	0.020	0.004	0.003	0.040	0.003	3.853
Dozer, 300 HP	1	6.2	40	98	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.032	0.037	0.007	0.007	0.091	0.006	10.345
Front end loader, 1.5 cy	1	6.2	40	98	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.004	0.014	0.003	0.003	0.014	0.003	1.409
Gas engine vibrator	1	15.3	20	122	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.289	0.000	0.000	0.001	0.011	0.454
Gas welding machine	1	5.6	40	90	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.747	0.000	0.000	0.004	0.013	1.157
Grader, 30,000 lb	1	13.4	40	214	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.047	0.041	0.010	0.010	0.121	0.009	15.243
Pneumatic wheel roller	1	9.2	50	183	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.019	0.027	0.006	0.006	0.052	0.005	6.133
Roller, vibratory	1	6.2	20	49	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.005	0.007	0.002	0.002	0.014	0.001	1.649
Rollers, steel wheel	1	9.7	20	78	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.008	0.012	0.002	0.002	0.022	0.002	2.600
Tandem roller, 10 ton	1	4.3	20	34	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.004	0.005	0.001	0.001	0.010	0.001	1.153
Total Annual Construction Emissions Between 2011- 2014														0.215	1.298	0.059	0.057	0.626	0.077	71.647

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Vehicle Emission Estimate

Truck and commuting vehicle operations also would result in indirect emissions. Emission factors for trucks (including dump, delivery, tractor, and tractor trucks that were modeled as heavy-duty diesel vehicles) for years 2011-2014 using the USEPA Mobile 6.2 Emission Factor model (USEPA October 2002). Statewide default input parameters for the summer and winter seasons for San Diego, California were used, as these were considered the most similar parameters available. The modeled emission factors were then multiplied by the vehicle operation hours to determine total emissions. Total trucks were estimated based on a round trip assumption of 20 miles. Table I.3-148 provides estimates of Marine Corps truck emissions for Airfield/North.

Asphalt Curing Emission Estimate

Asphalt curing-related VOC emissions were calculated based on the amount of paving anticipated. The following assumptions were used:

- Hot Mix Emulsified emission factor of 0.040 lbs/ton (California Air Resources Board). The Emulsified Emission Factor used for primary and tack coats was 17.9 lbs/ton.

- Hot Mix application rate of 0.060 gal/SY. (USACE 2000).
- Primary and Tack Coat Application rates of 0.25 gal/SY and 0.30 gal/SY. (FHWA, Guideline for Using Prime and Tack Coats July 2005).
- The density of asphalt (8.34 lb/gal) was obtained from: USEPA's Emission Inventory Improvement Program (EIIP), (USEPA January 2001).
- Conservative 4-inch paving thickness (RS Means 2006).

The calculation of asphalt concrete paving VOC emissions is provided below:

Pavement area = 473826 yd^2

Asphalt concrete density = 8.34 lb/gal

Total VOC = 473826 yd^2 x ((0.040 lbs/ton x 0.060 gal/yd^2) + (17.9 lbs/ton x 0.25 gal/yd^2) + (17.9 lbs/ton x 0.30 gal/yd^2) x 8.34 lb/gal /2000/2000

= 2.432 tons per year (Table I.3-149)

The following Subchapters present the worksheets used for estimating construction emissions associated with the actions described in each EIS volume using the above methodologies.

- Section 3.4.1 Marine Corps Relocation – Guam: Table I.3-148 through Table I.3-173
- Section 3.4.2 Marine Corps Relocation – CNMI: Table I.3-174 through Table I.3-177
- Section 3.4.3 Marine Corps Relocation – Aircraft Carrier Berthing: Table I.3-178 through Table I.3-183
- Section 3.4.4 Marine Corps Relocation –Army Air and Missile Defense Task: Table I.3-184 through Table I.3-198
- Section 3.4.5 Marine Corps Relocation – Related Actions/Utilities Projects: Table I.3-199 through Table I.3-232.

3.4.1 Construction Emissions: Marine Corps Relocation – Guam

Table I.3-148: Marine Corps Van & Truck Emissions – Airfield / North

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	43194	25	432	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.111	0.000	0.000	0.010	0.011	6.117
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	225883	25	2,259	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.274	0.125	0.032	0.030	0.364	0.029	88.212
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.274	0.236	0.033	0.030	0.373	0.040	94.329

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-149: Marine Corps Pavement Emissions – Airfield / North

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*# of years of construction*	*Emissions Rate VOC (tons/year)*
473,826	0.04	17.90	0.06	0.25	0.30	2.1E-05	9.73	4	2.432
Total Annual Paving VOCs Between 2011-2014									2.432

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-150: Marine Corps Total Construction Emissions – Airfield / North

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	0.5	1.5	0.1	0.1	1.0	2.5	166.0

Table I.3-151: Marine Corps Construction Equipment Emissions – Main Cantonment / North and Central

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction																				
Asphalt paver, 130 HP	1	138	50	2755	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.392	0.481	0.108	0.105	1.069	0.089	128.048
Backhoe loader, 48hp	1	927	40	14831	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.334	1.058	0.215	0.209	1.120	0.241	109.040
Compressor, 250 cfm	1	11,026	40	176410	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	12.147	16.596	3.973	3.854	37.498	3.771	3967.747
Centrif. water pump, 6"	1	4	50	80	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.003	0.006	0.001	0.001	0.012	0.002	1.130
Chain saws, 36"	1	766	20	6129	48	59	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.378	66.104	2.391	2.199	0.172	13.227	129.985
Chipping machine	1	383	50	7661	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.880	1.283	0.303	0.294	3.120	0.309	287.436
Concrete pump, small	1	577	50	11537	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.500	0.873	0.213	0.207	1.780	0.217	163.416
Crane, 90-ton	1	408	16	2613	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.466	0.370	0.092	0.090	1.470	0.101	152.203
Crane, SP, 12 ton	1	2,789	16	17848	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	3.183	2.529	0.631	0.612	10.040	0.690	1039.739
Drill rig & augers	1	4	20	32	176	43	1.65	2.36	0.56	0.54	6.68	0.57	539.15	0.004	0.006	0.001	0.001	0.018	0.002	1.431
Dozer, 300 HP	1	203	40	3246	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.000	1.221	0.000	0.000	2.987	0.206	341.245
Front end loader, 1.5 cy	1	586	40	9374	93	21	1.65	6.42	0.38	0.37	6.80	1.47	662.28	1.045	1.302	0.242	0.235	1.378	0.297	134.195
Gas engine vibrator	1	1,343	20	10744	6	55	2.03	696.11	1.31	1.27	2.78	26.08	1093.00	0.411	25.368	0.265	0.257	0.101	0.951	39.832
Gas welding machine	1	600	40	9596	17	68	0.22	642.74	0.18	0.17	3.24	11.35	996.20	0.008	79.961	0.007	0.006	0.404	1.412	123.934
Gradall, 3 ton, 1/2 cy	1	344	40	5510	171	59	0.21	1.64	0.11	0.10	4.25	0.32	541.49	0.026	1.006	0.014	0.013	2.605	0.196	331.929
Grader, 30,000 lb	1	942	40	15070	204	59	1.66	1.45	0.38	0.37	4.26	0.32	537.25	1.016	2.909	0.232	0.225	8.525	0.639	1075.393
Pneumatic wheel roller	1	138	50	2755	92	59	1.64	2.49	0.36	0.35	4.77	0.42	558.97	3.292	0.411	0.721	0.699	0.788	0.070	92.331
Roller, vibratory	1	203	20	1623	92	59	1.76	2.49	0.59	0.57	4.77	0.42	558.97	0.000	0.242	0.000	0.000	0.464	0.041	54.385
Rollers, steel wheel	1	275	20	2201	92	59	1.76	2.49	0.59	0.57	4.77	0.42	558.97	0.000	0.328	0.000	0.000	0.630	0.056	73.752
Tandem roller, 10 ton	1	0.2	20	1.7	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.283	0.000	0.088	0.085	0.000	0.000	0.056
Total Annual Construction Emissions Between 2011 – 2016, Alternative 1														24.761	202.055	9.618	9.209	74.181	22.516	8247.229
Total Annual Construction Emissions Between 2011 – 2016, Alternative 2 (1.9% increase)														25.232	205.904	9.801	9.384	75.594	22.945	8404.319
Total Annual Construction Emissions Between 2011 – 2016, Alternative 3 (4.8% increase)														25.940	211.677	10.076	9.647	77.714	23.588	8639.954
Total Annual Construction Emissions Between 2011 – 2016, Alternative 8 (2.9% increase)														25.468	207.829	9.893	9.472	76.301	23.159	8482.864

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-152: Marine Corps Van & Truck Emissions – Main Cantonment / North and Central

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Alternative 1	1,703,686	25	68,147	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.018	17.540	0.047	0.022	1.529	1.724	965.100
Alternative 2 (no increase)											0.018	17.540	0.047	0.022	1.529	1.724	965.100
Alternative 3 (1.0% increase)											0.018	17.712	0.048	0.022	1.544	1.741	974.562
Alternative 8 (no increase)											0.018	17.540	0.047	0.022	1.529	1.724	965.100
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Alternative 1	6,676,676	25	267,067	0.243	0.111	0.029	0.026	0.322	0.025	78.104	32.395	14.801	1.558	1.261	42.988	3.400	10429.537
Alternative 2 (1.0% increase)											32.706	14.943	1.573	1.273	43.402	3.433	10529.821
Alternative 3 (2.9% increase)											33.329	15.227	1.603	1.297	44.228	3.498	10730.389
Alternative 8 (1.0% increase)											32.706	14.943	1.573	1.273	43.402	3.433	10529.821
Total Annual Motor Vehicle Emissions, Between 2011-2016, Alternative 1											32.416	32.341	1.605	1.283	44.517	5.124	11394.637
Total Annual Motor Vehicle Emissions, Between 2011-2016, Alternative 2 (1.0% increase)											32.724	32.483	1.620	1.295	44.930	5.157	11494.921
Total Annual Motor Vehicle Emissions, Between 2011-2016, Alternative 3 (2.9% increase)											33.347	32.940	1.651	1.319	45.772	5.239	11704.951
Total Annual Motor Vehicle Emissions, Between 2011-2016, Alternative 8 (1.0% increase)											32.724	32.483	1.620	1.295	44.930	5.157	11494.921

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-153: Marine Corps Pavement Emissions – Main Cantonment / North and Central

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*Emissions Rate VOC (tons/year)*
3,153,937	0.04	17.90	0.06	0.25	0.30	2.1E-05	64.76	64.756
Total Annual Paving VOCs Between 2011-2016, Alternative 1								64.756
Total Annual Paving VOCs Between 2011-2016, Alternative 2 (1.9% increase)								65.990
Total Annual Paving VOCs Between 2011-2016, Alternative 3 (4.8% increase)								67.840
Total Annual Paving VOCs Between 2011-2016, Alternative 8 (2.9% increase)								66.606

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-154: Marine Corps Total Construction Emissions – Main Cantonment / North and Central

	Construction Activity	*Pollutant*						
	Total Annual Emissions (TPY)	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Alternative 1, North	2011 (11%)	6.3	25.8	1.5	1.4	13.1	10.2	2,160.6
	2012 (18%)	10.3	42.2	2.4	2.3	21.4	16.6	3,535.5
	2013 (23%)	13.1	53.9	3.1	2.9	27.3	21.3	4,517.6
	2014 (23%)	13.1	53.9	3.1	2.9	27.3	21.3	4,517.6
	2015 (17%)	9.7	39.8	2.3	2.2	20.2	15.7	3,339.1
	2016 (8%)	4.6	18.8	1.1	1.0	9.5	7.4	1,571.3
Alternative 2, North	2011 (11%)	6.4	26.2	1.5	1.4	13.3	10.4	2,188.9

	Construction Activity	Pollutant						
	Total Annual Emissions (TPY)	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
	2012 (18%)	10.4	42.9	2.5	2.3	21.7	16.9	3,581.9
	2013 (23%)	13.3	54.8	3.2	3.0	27.7	21.6	4,576.8
	2014 (23%)	13.3	54.8	3.2	3.0	27.7	21.6	4,576.8
	2015 (17%)	9.9	40.5	2.3	2.2	20.5	16.0	3,382.9
	2016 (8%)	4.6	19.1	1.1	1.0	9.6	7.5	1,591.9
Alternative 3, North	2011 (11%)	4.3	17.6	1.0	1.0	8.9	6.9	1,461.4
	2012 (18%)	7.0	28.8	1.7	1.6	14.5	11.4	2,391.3
	2013 (23%)	8.9	36.7	2.1	2.0	18.5	14.5	3,055.6
	2014 (23%)	8.9	36.7	2.1	2.0	18.5	14.5	3,055.6
	2015 (17%)	6.6	27.2	1.6	1.5	13.7	10.7	2,258.5
	2016 (8%)	3.1	12.8	0.7	0.7	6.5	5.0	1,062.8
Alternative 3, Central	2011 (11%)	2.3	9.3	0.5	0.5	4.7	3.7	776.6
	2012 (18%)	3.7	15.3	0.9	0.8	7.7	6.0	1,270.7
	2013 (23%)	4.7	19.5	1.1	1.1	9.9	7.7	1,623.7
	2014 (23%)	4.7	19.5	1.1	1.1	9.9	7.7	1,623.7
	2015 (17%)	3.5	14.4	0.8	0.8	7.3	5.7	1,200.1
	2016 (8%)	1.6	6.8	0.4	0.4	3.4	2.7	564.8
Alternative 8, North	2011 (11%)	5.2	21.3	1.2	1.2	10.7	8.4	1,769.0
	2012 (18%)	8.4	34.8	2.0	1.9	17.6	13.8	2,894.8
	2013 (23%)	10.8	44.5	2.6	2.4	22.4	17.6	3,698.9
	2014 (23%)	10.8	44.5	2.6	2.4	22.4	17.6	3,698.9
	2015 (17%)	8.0	32.9	1.9	1.8	16.6	13.0	2,734.0
	2016 (8%)	3.7	15.5	0.9	0.8	7.8	6.1	1,286.6
Alternative 8, Central	2011 (11%)	1.2	5.2	0.3	0.3	2.6	2.0	428.5
	2012 (18%)	2.0	8.4	0.5	0.5	4.3	3.3	701.2
	2013 (23%)	2.6	10.8	0.6	0.6	5.4	4.3	896.0
	2014 (23%)	2.6	10.8	0.6	0.6	5.4	4.3	896.0
	2015 (17%)	1.9	8.0	0.5	0.4	4.0	3.1	662.3
	2016 (8%)	0.9	3.7	0.2	0.2	1.9	1.5	311.7

Table I.3-155: Marine Corps Construction Equipment Emissions – Waterfront / Apra Harbor

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horsepower[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	1.4	50	27	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.004	0.005	0.001	0.001	0.010	0.001	1.255
Backhoe loader, 48hp	1	2.4	40	38	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.001	0.003	0.001	0.001	0.003	0.001	0.282
Chain saws, 36"	1	1.0	20	8	48	59	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.000	0.086	0.003	0.003	0.000	0.017	0.170
Chipping machine	1	0.5	50	10	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.001	0.002	0.000	0.000	0.004	0.000	0.375
Compressor, 250 cfm	1	6.7	40	106	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.007	0.010	0.002	0.002	0.023	0.002	2.393
Concrete pump, small	1	2.0	50	40	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.002	0.003	0.001	0.001	0.006	0.001	0.567
Crane, 90-ton	1	16.8	16	107	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.019	0.015	0.004	0.004	0.060	0.004	6.245
Crane, SP, 12 ton	1	12.7	16	81	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.014	0.011	0.003	0.003	0.046	0.003	4.716
Vibratory hammer and generator	1	5.6	50	112	50	43	1.74	3.02	0.72	0.70	6.14	0.80	567.43	0.005	0.008	0.002	0.002	0.016	0.002	1.492
Diesel hammer, 41k ft-lb	1	0.3	20	2	329	59	1.64	2.75	0.50	0.48	5.60	0.42	537.08	0.001	0.001	0.000	0.000	0.003	0.000	0.275
Dozer, 75 HP	1	0.5	40	8	75	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.001	0.001	0.000	0.000	0.002	0.000	0.210
Dozer, 300 HP	1	1.4	40	22	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.007	0.008	0.002	0.002	0.020	0.001	2.271
Front end loader, 1.5 cy	1	3.5	40	56	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.002	0.008	0.002	0.002	0.008	0.002	0.802
Gas engine vibrator	1	5.9	20	47	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.111	0.000	0.000	0.000	0.004	0.174
Gas welding machine	1	2.8	40	45	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.373	0.000	0.000	0.002	0.007	0.579
Gradall, 3 ton, 1/2 cy	1	0.1	40	1	171	59	10.67	1.22	0.37	0.36	3.38	0.25	536.04	0.001	0.000	0.000	0.000	0.000	0.000	0.048
Grader, 30,000 lb	1	3.9	40	62	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.013	0.012	0.003	0.003	0.035	0.003	4.396
Hydraulic excavator, 3.5 cy	1	1.9	40	30	62	43	1.76	2.43	0.59	0.57	5.41	0.56	576.01	0.002	0.002	0.001	0.001	0.005	0.000	0.513
Pneumatic wheel roller	1	1.4	50	27	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.003	0.004	0.001	0.001	0.008	0.001	0.905
Roller, vibratory	1	1.4	20	11	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.002	0.000	0.000	0.003	0.000	0.362
Rollers, steel wheel	1	2.5	20	20	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.006	0.001	0.670
Tandem roller, 10 ton	1	0.1	20	1	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.027
Tug boat, 500 HP	1	1.8	50	36	500	30	140.62	0.78	0.25	0.24	7.92	0.01	524.78	0.836	0.005	0.001	0.001	0.047	0.000	3.121
Total Annual Construction Emissions Between 2011 – 2014														0.923	0.673	0.027	0.026	0.307	0.050	31.846

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-156: Marine Corps Van & Truck Emissions – Waterfront / Apra Harbor

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	20417	25	204	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.053	0.000	0.000	0.005	0.005	2.891
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	116262	25	1163	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.141	0.064	0.017	0.015	0.187	0.015	45.403
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.141	0.117	0.017	0.015	0.192	0.020	48.294

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-157: Marine Corps Pavement Emissions – Waterfront / Apra Harbor

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*# of years of construction*	*Emissions Rate VOC (tons/year)*
62,611	0.04	17.90	0.06	0.25	0.30	2.1E-05	1.29	4	0.321
Total Annual Paving VOCs Between 2011-2014									0.321

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-158: Marine Corps Total Construction Emissions – Waterfront / Apra Harbor

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	1.1	0.8	0.0	0.0	0.5	0.4	80.1

Table I.3-159: Marine Corps Construction Equipment Emissions – Training / South & North

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horsepower[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction																				
Compressor, 250 cfm	1	0.3	40	4	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.000	0.000	0.000	0.000	0.001	0.000	0.100
Concrete pump, small	1	1.7	50	34	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.001	0.003	0.001	0.001	0.005	0.001	0.480
Crane, 90-ton	1	0.5	16	3	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.001	0.000	0.000	0.000	0.002	0.000	0.170
Crane, SP, 12 ton	1	0.1	16	1	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.000	0.000	0.000	0.000	0.001	0.000	0.055
Dozer, 75 HP	1	0.1	40	2	75	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.000	0.000	0.000	0.000	0.001	0.000	0.062
Dozer, 300 HP	1	0.0	40	1	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.000	0.000	0.000	0.000	0.001	0.000	0.082
Front end loader, 1.5 cy	1	0.0	40	1	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.000	0.000	0.000	0.000	0.000	0.000	0.011
Gas engine vibrator	1	2.2	20	18	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.042	0.000	0.000	0.000	0.002	0.065
Gas welding machine	1	0.5	40	9	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.072	0.000	0.000	0.000	0.001	0.111
Grader, 30,000 lb	1	0.0	40	1	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.000	0.000	0.000	0.000	0.000	0.000	0.056
Hydraulic excavator, 3.5 cy	1	0.3	40	5	62	43	1.76	2.43	0.59	0.57	5.41	0.56	576.01	0.001	0.001	0.000	0.000	0.003	0.000	0.301
Roller, vibratory	1	0.0	20	0	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.013
Total Annual Construction Emissions Between 2011 – 2014														0.004	0.119	0.001	0.001	0.014	0.004	1.506

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA , Dec. 31, 2008.

Table I.3-160: Marine Corps Van & Truck Emissions – Training / South & North

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	3871	25	19	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.005	0.000	0.000	0.000	0.000	0.274
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	28878	25	144	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.018	0.008	0.002	0.002	0.023	0.002	5.639
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.018	0.013	0.002	0.002	0.024	0.002	5.913

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-161: Marine Corps Total Construction Emissions – Training / South & North

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	0.0	0.1	0.0	0.0	0.0	0.0	7.4

Table I.3-162: Guam Military Relocation Construction Equipment Emissions - Firing Training Option A / Central

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	0.5	50	10	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.001	0.002	0.000	0.000	0.004	0.000	0.465
Backhoe loader, 48hp	1	17.6	40	281	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.006	0.020	0.004	0.004	0.021	0.005	2.064
Chain saws, 36"	1	11.5	20	92	48	59	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.006	0.992	0.036	0.033	0.003	0.199	1.951
Chipping machine	1	5.8	50	115	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.013	0.019	0.005	0.004	0.047	0.005	4.315
Compressor, 250 cfm	1	3.2	40	50	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.003	0.005	0.001	0.001	0.011	0.001	1.134
Concrete pump, small	1	1.1	50	21	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.001	0.002	0.000	0.000	0.003	0.000	0.297
Crane, 90-ton	1	37.3	16	239	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.043	0.034	0.008	0.008	0.134	0.009	13.906
Crane, SP, 12 ton	1	14.4	16	92	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.016	0.013	0.003	0.003	0.052	0.004	5.369
Dozer, 200 HP	1	40.1	40	641	200	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.138	0.161	0.032	0.031	0.393	0.027	44.914
Dozer, 300 HP	1	0.6	40	9	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.003	0.003	0.001	0.001	0.008	0.001	0.925
Front end loader, 1.5 cy	1	12.1	40	193	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.008	0.027	0.005	0.005	0.028	0.006	2.760
Gas engine vibrator	1	2.1	20	17	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.040	0.000	0.000	0.000	0.001	0.062
Gas welding machine	1	0.8	40	13	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.107	0.000	0.000	0.001	0.002	0.165
Gradall, 3 ton, 1/2 cy	1	1.2	40	19	183	59	10.67	1.22	0.37	0.36	3.38	0.25	536.04	0.024	0.003	0.001	0.001	0.008	0.001	1.224
Grader, 30,000 lb	1	11.7	40	187	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.041	0.036	0.009	0.009	0.106	0.008	13.359
Pneumatic wheel roller	1	0.5	50	10	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.003	0.000	0.335
Roller, vibratory	1	0.6	20	4	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.001	0.000	0.000	0.001	0.000	0.147
Rollers, steel wheel	1	1.0	20	8	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.002	0.000	0.268
Total Annual Construction Emissions Between 2011 – 2014														0.306	1.466	0.107	0.102	0.825	0.269	93.662

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-163: Guam Military Relocation Truck Emissions - Firing Training Option A / Central

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	13121	25	131	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.034	0.000	0.000	0.003	0.003	1.858
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	110956	25	1110	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.135	0.061	0.016	0.016	0.179	0.014	43.331
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.135	0.095	0.016	0.016	0.182	0.017	45.189

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-164: Guam Military Relocation Pavement Emissions - Firing Training Option A / Central

Total Pavement (square yards)	Hot Mix Emission Factor[1] (lbs/ton)	Emulsified Emission Factor[1] (lbs/ton)*	Hot Mix Application Rate[2] (gal/SY)	Primary Coat Application Rate[3] (gal/SY)	Tack Coat Application Rate[3] (gal/SY)	Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)	Total VOC (tons)	# of years of construction	Emissions Rate VOC (tons/year)
45,494	0.04	17.90	0.06	0.25	0.30	2.1E-05	0.93	4	0.234
Total Annual Paving VOCs Between 2011-2014									0.234

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-165: Guam Military Relocation Total Construction Emissions - Firing Training Option A / Central

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.4	1.6	0.1	0.1	1.0	0.5	138.9

Table I.3-166: Guam Military Relocation Construction Equipment Emissions - Firing Training Option B / Central

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	0.1	50	2	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.000	0.000	0.000	0.000	0.001	0.000	0.093
Backhoe loader, 48hp	1	2.2	40	35	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.001	0.003	0.001	0.000	0.003	0.001	0.259
Chain saws, 36"	1	10.4	20	83	48	59	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.005	0.897	0.032	0.030	0.002	0.180	1.765
Chipping machine	1	5.2	50	104	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.012	0.017	0.004	0.004	0.042	0.004	3.902
Compressor, 250 cfm	1	3.2	40	50	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.003	0.005	0.001	0.001	0.011	0.001	1.134
Concrete pump, small	1	1.1	50	21	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.001	0.002	0.000	0.000	0.003	0.000	0.297
Crane, 90-ton	1	6.4	16	41	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.007	0.006	0.001	0.001	0.023	0.002	2.386
Crane, SP, 12 ton	1	1.8	16	12	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.002	0.002	0.000	0.000	0.006	0.000	0.671
Dozer, 200 HP	1	69.7	40	1115	200	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.239	0.280	0.055	0.054	0.684	0.047	78.165
Dozer, 300 HP	1	0.2	40	2	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.001	0.001	0.000	0.000	0.002	0.000	0.252
Front end loader, 1.5 cy	1	8.4	40	134	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.006	0.019	0.004	0.004	0.020	0.004	1.924
Gas engine vibrator	1	2.1	20	17	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.040	0.000	0.000	0.000	0.001	0.062
Gas welding machine	1	0.8	40	13	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.107	0.000	0.000	0.001	0.002	0.165
Gradall, 3 ton, 1/2 cy	1	0.2	40	2	183	59	10.67	1.22	0.37	0.36	3.38	0.25	536.04	0.003	0.000	0.000	0.000	0.001	0.000	0.153

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Grader, 30,000 lb	1	10.2	40	163	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.036	0.032	0.008	0.008	0.092	0.007	11.646
Pneumatic wheel roller	1	0.1	50	2	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.001	0.000	0.067
Roller, vibratory	1	0.2	20	1	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.040
Rollers, steel wheel	1	0.2	20	2	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.054
Total Annual Construction Emissions Between 2011 – 2014														0.317	1.410	0.108	0.103	0.893	0.250	103.036

***Source*:** 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-167: Guam Military Relocation Van & Truck Emissions - Firing Training Option B / Central

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	25997	25	260	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.067	0.000	0.000	0.006	0.007	3.682
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	403596	25	4036	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.490	0.224	0.058	0.053	0.650	0.051	157.613
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.490	0.291	0.058	0.053	0.655	0.058	161.295

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-168: Guam Military Relocation Pavement Emissions - Firing Training Option B / Central

Total Pavement (square yards)	Hot Mix Emission Factor[1] (lbs/ton)	Emulsified Emission Factor[1] (lbs/ton)*	Hot Mix Application Rate[2] (gal/SY)	Primary Coat Application Rate[3] (gal/SY)	Tack Coat Application Rate[3] (gal/SY)	Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)	Total VOC (tons)	# of years of construction	Emissions Rate VOC (tons/year)
5,287	0.04	17.90	0.06	0.25	0.30	2.1E-05	0.11	4	0.027
Total Annual Paving VOCs Between 2011-2014									0.027

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-169: Guam Military Relocation Total Construction Emissions - Firing Training Option B / Central

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.8	1.7	0.2	0.2	1.5	0.3	264.3

Table I.3-170: Guam Military Relocation Construction Equipment Emissions - C3 & Non Firing Training / North & Central

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	6.8	50	68	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.010	0.012	0.003	0.003	0.026	0.002	3.137
Backhoe loader, 48hp	1	11.5	40	92	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.002	0.007	0.001	0.001	0.007	0.001	0.673
Chain saws, 36"	1	8.6	20	34	48	59	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.002	0.371	0.013	0.012	0.001	0.074	0.730
Chipping machine	1	4.3	50	43	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.005	0.007	0.002	0.002	0.018	0.002	1.613
Compressor, 250 cfm	1	5.1	40	40	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.003	0.004	0.001	0.001	0.009	0.001	0.909
Concrete pump, small	1	1.8	50	18	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.001	0.001	0.000	0.000	0.003	0.000	0.248
Crane, 90-ton	1	7.8	16	25	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.004	0.004	0.001	0.001	0.014	0.001	1.445
Crane, SP, 12 ton	1	9.4	16	30	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.005	0.004	0.001	0.001	0.017	0.001	1.752
Dozer, 300 HP	1	3.7	40	30	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.010	0.011	0.002	0.002	0.027	0.002	3.112
Front end loader, 1.5 cy	1	12.3	40	98	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.004	0.014	0.003	0.003	0.014	0.003	1.403
Gas engine vibrator	1	3.6	20	14	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.034	0.000	0.000	0.000	0.001	0.053
Gas welding machine	1	1.3	40	10	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.087	0.000	0.000	0.000	0.002	0.134
Gradall, 3 ton, 1/2 cy	1	0.8	40	6	183	59	10.67	1.22	0.37	0.36	3.38	0.25	536.04	0.008	0.001	0.000	0.000	0.003	0.000	0.408
Grader, 30,000 lb	1	16.3	40	130	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.028	0.025	0.006	0.006	0.074	0.006	9.277
Pneumatic wheel roller	1	6.8	50	68	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.007	0.010	0.002	0.002	0.019	0.002	2.262
Roller, vibratory	1	3.7	20	15	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.002	0.002	0.000	0.000	0.004	0.000	0.496
Rollers, steel wheel	1	6.5	20	26	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.003	0.004	0.001	0.001	0.007	0.001	0.871
Tandem roller, 10 ton	1	3.5	20	14	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.002	0.000	0.000	0.004	0.000	0.469
Total Annual Construction Emissions Between 2011 – 2014														0.095	0.599	0.038	0.036	0.247	0.100	28.992

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-171: Guam Military Relocation Van & Truck Emissions - C3 & Non Firing Training / North & Central

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	9428	25	47	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.012	0.000	0.000	0.001	0.001	0.668
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	100646	25	503	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.061	0.028	0.007	0.007	0.081	0.006	19.652
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.061	0.040	0.007	0.007	0.082	0.008	20.320

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-172: Guam Military Relocation Pavement Emissions - C3 & Non Firing Training / North & Central

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*# of years of construction*	*Emissions Rate VOC (tons/year)*
158,510	0.04	17.90	0.06	0.25	0.30	2.1E-05	3.25	4	0.814
Total Annual Paving VOCs Between 2011-2014									0.814

Source*:* 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-173: Guam Military Relocation Total Construction Emissions - C3 & Non Firing Training / North & Central

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	0.2	0.6	0.0	0.0	0.3	0.9	49.3

3.4.2 Construction Emissions: Marine Corps Relocation – CNMI

Table I.3-174: CNMI Construction Equipment Emissions - Alternatives 1 and 2

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	0.4	50	8	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.001	0.001	0.000	0.000	0.003	0.000	0.372
Backhoe loader, 48hp	1	28.7	40	459	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.010	0.033	0.007	0.006	0.035	0.007	3.376
Compressor, 250 cfm	1	4.5	40	71	83	43	1.76	2.40	0.57	0.56	5.42	0.59	573.27	0.005	0.007	0.002	0.002	0.015	0.002	1.601
Chain saws, 36"	1	33.3	20	266	7	70	2.00	349.2	12.63	11.62	0.911	69.87	686.61	0.003	0.488	0.018	0.016	0.001	0.098	0.959
Chipping machine	1	16.7	50	333	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.038	0.056	0.013	0.013	0.136	0.013	12.494
Concrete pump, small	1	1.6	50	31	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.001	0.002	0.001	0.001	0.005	0.001	0.439
Crane, 90-ton	1	3.6	16	23	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.004	0.003	0.001	0.001	0.013	0.001	1.342
Crane, SP, 12 ton	1	3.0	16	19	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.003	0.003	0.001	0.001	0.011	0.001	1.100
Dozer, 75 HP	1	0.2	40	2	75	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.000	0.000	0.000	0.000	0.001	0.000	0.063
Dozer, 200 HP	1	0.5	40	7	200	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.002	0.002	0.000	0.000	0.004	0.000	0.505
Dozer, 300 HP	1	0.8	40	12	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.004	0.005	0.001	0.001	0.011	0.001	1.262
Front end loader, 1.5 cy	1	17.2	40	274	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.012	0.038	0.008	0.008	0.040	0.009	3.928
Gas engine vibrator	1	3.6	20	28	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.067	0.000	0.000	0.000	0.003	0.105
Gas welding machine	1	1.3	40	21	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.173	0.000	0.000	0.001	0.003	0.269
Gradall, 3 ton, 1/2 cy	1	0.1	40	1	171	59	1.66	1.64	0.38	0.37	4.25	0.32	541.49	0.000	0.000	0.000	0.000	0.000	0.000	0.048
Grader, 30,000 lb	1	2.4	40	38	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.008	0.007	0.002	0.002	0.022	0.002	2.740
Hydraulic excavator, 3.5 cy	1	54.4	40	870	62	43	1.76	2.43	0.59	0.57	5.41	0.56	576.01	0.045	0.062	0.015	0.014	0.138	0.014	14.684
Paving machinery & equipment	1	1.0	50	19	70	21	1.70	2.64	0.57	0.55	5.00	0.47	555.84	0.001	0.001	0.000	0.000	0.002	0.000	0.171
Pneumatic wheel roller	1	0.4	50	8	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.002	0.000	0.268
Roller, vibratory	1	0.5	20	4	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.001	0.000	0.000	0.001	0.000	0.134
Tandem roller, 10 ton	1	0.7	20	6	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.002	0.000	0.188
Total Annual Construction Emissions Between 2011 – 2014														0.140	0.951	0.068	0.065	0.442	0.154	46.048

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-175: CNMI Van & Truck Emissions - Alternatives 1 and 2

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	18470	25	185	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.048	0.000	0.000	0.004	0.005	2.616
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	153798	25	1538	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.187	0.085	0.022	0.020	0.248	0.020	60.061
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.187	0.133	0.022	0.020	0.252	0.024	62.677

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-176: CNMI Pavement Emissions - Alternatives 1 and 2

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*# of years of construction*	*Emissions Rate VOC (tons/year)*
30,622	0.04	17.90	0.06	0.25	0.30	2.1E-05	0.63	4	0.157
Total Annual Paving VOCs Between 2011-2014									0.157

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-177: CNMI Total Construction Emissions - Alternatives 1 and 2

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	0.3	1.1	0.1	0.1	0.7	0.3	108.7

3.4.3 Construction Emissions: Marine Corps Relocation – Aircraft Carrier Berthing

Table I.3-178: Aircraft Carrier Berthing Construction Equipment Emissions – Alternative 1 and Alternative 2 - Apra Harbor

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	0.4	50	8	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.001	0.001	0.000	0.000	0.003	0.000	0.372
Backhoe loader, 48hp	1	29.7	40	475	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.011	0.034	0.007	0.007	0.036	0.008	3.494
Chain saws, 36"	1	0.7	20	6	48	59	1.99	349.18	12.63	11.62	0.91	69.87	686.61	0.000	0.060	0.002	0.002	0.000	0.012	0.119
Chipping machine	1	0.4	50	7	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.001	0.001	0.000	0.000	0.003	0.000	0.263
Compressor, 250 cfm	1	0.4	40	6	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.000	0.001	0.000	0.000	0.001	0.000	0.144
Concrete pump, small	1	2.3	50	46	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.002	0.003	0.001	0.001	0.007	0.001	0.652
Crane, 90-ton	1	17.1	16	109	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.020	0.016	0.004	0.004	0.062	0.004	6.375
Crane, SP, 12 ton	1	39.3	16	252	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.045	0.036	0.009	0.009	0.141	0.010	14.652
Diesel hammer, 41k ft-lb	1	14.1	20	113	329	59	1.64	2.75	0.50	0.48	5.60	0.42	537.08	0.040	0.066	0.012	0.012	0.135	0.010	12.934
Dozer, 200 HP	1	0.1	40	1	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.000	0.000	0.000	0.000	0.001	0.000	0.084
Dozer, 300 HP	1	0.3	40	5	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.002	0.002	0.000	0.000	0.004	0.000	0.505
Front end loader, 1.5 cy	1	0.3	40	5	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.000	0.001	0.000	0.000	0.001	0.000	0.069
Gas engine vibrator	1	8.2	20	66	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.155	0.000	0.000	0.001	0.006	0.243
Gas welding machine	1	6.7	40	106	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.887	0.000	0.000	0.004	0.016	1.374
Gradall, 3 ton, 1/2 cy	1	0.7	40	10	171	59	1.66	1.64	0.38	0.37	4.25	0.32	541.49	0.002	0.002	0.000	0.000	0.005	0.000	0.626
Grader, 30,000 lb	1	1.0	40	15	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.003	0.003	0.001	0.001	0.009	0.001	1.085
Hydraulic excavator, 3.5 cy	1	5.9	40	94	171	59	1.66	1.64	0.38	0.37	4.25	0.32	541.49	0.017	0.017	0.004	0.004	0.045	0.003	5.686
Pneumatic wheel roller	1	0.4	50	8	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.002	0.000	0.268
Roller, vibratory	1	0.3	20	2	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.001	0.000	0.080
Rollers, steel wheel	1	0.8	20	6	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.002	0.000	0.214
Total Annual Construction Emissions Between 2011 - 2014														0.146	1.287	0.042	0.040	0.462	0.072	49.239

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-179: Aircraft Carrier Berthing (Dredging) Construction Equipment Emissions – Alternative 1 and Alternative 2 - Apra Harbor

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Dredging – ODMDS option																				
Crane, 90-ton	1	37.9	16	243	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.043	0.034	0.009	0.008	0.136	0.009	14.130
Support and propulsion, mechanical dredge	1	37.9	50	758	2000	30	0.10	7.92	1.01	0.25	0.24	9.88	524.78	0.048	3.967	0.508	0.126	0.122	4.949	262.852
Tug to ODMDS	1	37.9	50	758	2000	30	0.10	7.92	1.01	0.25	0.24	9.88	524.78	0.048	3.967	0.508	0.126	0.122	4.949	262.852
Total Annual Dredging Emissions Between 2014 – 2015, ODMDS option														0.139	7.968	1.024	0.260	0.380	9.907	539.835
Dredging – Upland Site option																				
Crane, 90-ton	1	37.9	16	243	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.043	0.034	0.09	0.08	0.136	0.009	14.130
Support and propulsion, mechanical dredge	1	37.9	50	758	2000	30	0.10	7.92	1.01	0.25	0.24	9.88	524.78	0.048	3.967	0.508	0.126	0.122	4.949	262.852
Total Annual Dredging Emissions Between 2014 – 2015, Upland Site														0.091	4.001	0.516	0.134	0.258	4.958	276.983

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-180: Aircraft Carrier Berthing Van &Truck Emissions – Alternative 1 and Alternative 2 – Apra Harbor

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	19743	25	197	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.051	0.000	0.000	0.004	0.005	2.796
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	171304	25	1713	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.208	0.095	0.024	0.023	0.276	0.022	66.898
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.208	0.146	0.025	0.023	0.280	0.027	69.694

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-181Aircraft Carrier Berthing (Dredging) Van &Truck Emissions – Alternative 1 and Alternative 2 – Apra Harbor

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Dredging – ODMDS option	1516	25	30	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.008	0.000	0.000	0.001	0.001	0.429
Dredging – Upland Site option	1516	25	30	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.008	0.000	0.000	0.001	0.001	0.429
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Dredging – ODMDS option	0	25	0	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dredging – Upland Site option	37900	25	758	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.092	0.042	0.011	0.010	0.122	0.010	29.602
Total Annual Motor Vehicle Emissions, Between 2011-2014, ODMDS option											0.000	0.005	0.000	0.000	0.000	0.000	0.275
Total Annual Motor Vehicle Emissions, Between 2011-2014, Upland Site option											0.092	0.047	0.011	0.010	0.122	0.010	29.877

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-182: Aircraft Carrier Berthing Pavement Emissions – Alternative 1 and Alternative 2 – Apra Harbor

Total Pavement (square yards)	Hot Mix Emission Factor[1] (lbs/ton)	Emulsified Emission Factor[1] (lbs/ton)*	Hot Mix Application Rate[2] (gal/SY)	Primary Coat Application Rate[3] (gal/SY)	Tack Coat Application Rate[3] (gal/SY)	Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)	Total VOC (tons)	# of years of construction	Emissions Rate VOC (tons/year)
21,932	0.04	17.90	0.06	0.25	0.30	2.1E-05	0.45	4	0.113
Total Annual Paving VOCs Between 2011-2014									0.113

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-183: Aircraft Carrier Berthing Total Construction Emissions – Alternative 1 and Alternative 2 – Apra Harbor

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.4	1.4	0.1	0.1	0.7	0.2	118.9
Total Annual Emissions for Dredging – ODMDS option (TPY)	0.1	8.0	1.0	0.3	0.4	9.9	540.26
Total Annual Emissions for Dredging - Upland Site option (TPY)	0.2	4.1	0.5	0.1	0.4	5.0	307.01

3.4.4 Construction Emissions: Marine Corps Relocation –Army Air and Missile Defense Task

Table I.3-184: AMDTF Construction Equipment Emissions – Alternative 1 - North

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	1.2	50	24	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.003	0.004	0.001	0.001	0.009	0.001	1.115
Backhoe loader, 48hp	1	18.6	40	297	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.007	0.021	0.004	0.004	0.022	0.005	2.182
Centrif. water pump, 6"	1	0.1	50	2	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.000	0.000	0.000	0.000	0.000	0.000	0.028
Chain saws, 36"	1	3.1	20	25	48	59	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.002	0.267	0.010	0.009	0.001	0.054	0.526
Chipping machine	1	1.6	50	31	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.004	0.005	0.001	0.001	0.013	0.001	1.163
Compressor, 250 cfm	1	214.3	40	3430	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.236	0.323	0.077	0.075	0.729	0.073	77.136
Concrete pump, small	1	16.3	50	326	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.014	0.025	0.006	0.006	0.050	0.006	4.619
Crane, 90-ton	1	15.4	16	99	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.018	0.014	0.003	0.003	0.055	0.004	5.739
Crane, SP, 12 ton	1	33.9	16	217	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.039	0.031	0.008	0.007	0.122	0.008	12.631
Drill rig & augers	1	0.1	20	1	176	43	1.71	2.36	0.56	0.54	6.68	0.57	539.15	0.000	0.000	0.000	0.000	0.000	0.000	0.036
Dozer, 300 HP	1	2.6	40	42	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.014	0.016	0.003	0.003	0.039	0.003	4.421
Front end loader, 1.5 cy	1	5.9	40	95	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.004	0.013	0.003	0.003	0.014	0.003	1.357
Gas engine vibrator	1	34.5	20	276	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.651	0.000	0.000	0.003	0.024	1.023
Gas welding machine	1	15.5	40	249	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.001	2.071	0.000	0.000	0.010	0.037	3.211
Gradall, 3 ton, 1/2 cy	1	1.3	40	20	171	59	1.66	1.64	0.38	0.37	4.25	0.32	541.49	0.004	0.004	0.001	0.001	0.009	0.001	1.205
Grader, 30,000 lb	1	5.5	40	88	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.019	0.017	0.004	0.004	0.050	0.004	6.253
Pneumatic wheel roller	1	1.2	50	24	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.002	0.004	0.001	0.001	0.007	0.001	0.804
Roller, vibratory	1	2.6	20	21	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.006	0.001	0.691
Rollers, steel wheel	1	2.2	20	18	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.005	0.000	0.590
Tandem roller, 10 ton	1	0.1	20	1	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.027
Total Annual Construction Emissions Between 2011 – 2014														0.370	3.472	0.124	0.120	1.145	0.225	124.756

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-185: AMDTF Van & Truck Emissions – Alternative 1 - North

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	130580	25	1,306	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.336	0.001	0.000	0.029	0.033	18.493
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	794982	25	7,950	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.964	0.441	0.114	0.105	1.280	0.101	310.457
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.965	0.777	0.115	0.105	1.309	0.134	328.950

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-186: AMDTF Pavement Emissions – Alternative 1 - North

Total Pavement (square yards)	Hot Mix Emission Factor[1] (lbs/ton)	Emulsified Emission Factor[1] (lbs/ton)*	Hot Mix Application Rate[2] (gal/SY)	Primary Coat Application Rate[3] (gal/SY)	Tack Coat Application Rate[3] (gal/SY)	Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)	Total VOC (tons)	# of years of construction	Emissions Rate VOC (tons/year)
103,106	0.04	17.90	0.06	0.25	0.30	2.1E-05	2.12	4	0.529
Total Annual Paving VOCs Between 2011-2014									0.529

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-187: AMDTF Total Construction Emissions – Alternative 1 - North

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	1.3	4.2	0.2	0.2	2.5	0.9	453.7

Table I.3-188: AMDTF Construction Equipment Emissions –Alternative 2 –Central

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction																				
Asphalt paver, 130 HP	1	1.1	50	21	130	59	0.12	2.07	0.36	0.35	4.59	0.38	550.19	0.003	0.004	0.001	0.001	0.008	0.001	0.976
Backhoe loader, 48hp	1	18.6	40	297	48	21	0.14	6.42	1.01	0.98	6.80	1.47	662.28	0.007	0.021	0.004	0.004	0.022	0.005	2.182
Centrif. water pump, 6"	1	0.1	50	2	53	43	0.12	3.03	0.57	0.56	6.18	0.75	567.14	0.000	0.000	0.000	0.000	0.000	0.000	0.028
Chain saws, 36"	1	2.9	20	23	48	59	0.14	349.18	9.76	8.98	0.91	69.87	686.61	0.001	0.250	0.009	0.008	0.001	0.050	0.492
Chipping machine	1	1.5	50	29	144	43	0.12	2.46	0.45	0.43	5.98	0.59	550.61	0.003	0.005	0.001	0.001	0.012	0.001	1.088
Compressor, 250 cfm	1	214.2	40	3427	83	43	0.12	2.40	0.44	0.43	5.42	0.54	573.27	0.236	0.322	0.077	0.075	0.728	0.073	77.083
Concrete pump, small	1	15.4	50	308	53	43	0.12	3.03	0.57	0.56	6.18	0.75	567.14	0.013	0.023	0.006	0.006	0.048	0.006	4.363
Crane, 90-ton	1	15.2	16	97	231	43	0.11	1.30	0.25	0.24	5.14	0.35	532.78	0.017	0.014	0.003	0.003	0.055	0.004	5.648
Crane, SP, 12 ton	1	33.8	16	216	231	43	0.11	1.30	0.25	0.24	5.14	0.35	532.78	0.039	0.031	0.008	0.007	0.122	0.008	12.602
Drill rig & augers	1	0.1	20	1	176	43	0.12	2.36	0.43	0.42	6.68	0.57	539.15	0.000	0.000	0.000	0.000	0.000	0.000	0.036
Dozer, 300 HP	1	2.5	40	39	300	59	0.12	1.93	0.30	0.29	4.72	0.33	539.34	0.013	0.015	0.003	0.003	0.036	0.002	4.121
Front end loader, 1.5 cy	1	5.3	40	85	93	21	0.14	6.42	1.01	0.98	6.80	1.47	662.28	0.004	0.012	0.002	0.002	0.012	0.003	1.214
Gas engine vibrator	1	33.3	20	266	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.629	0.000	0.000	0.003	0.024	0.988
Gas welding machine	1	15.3	40	244	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.001	2.033	0.000	0.000	0.010	0.036	3.151
Gradall, 3 ton, 1/2 cy	1	1.3	40	20	171	59	0.12	1.64	0.29	0.28	4.25	0.32	541.49	0.004	0.004	0.001	0.001	0.009	0.001	1.205
Grader, 30,000 lb	1	5.2	40	82	204	59	0.12	1.45	0.28	0.27	4.26	0.32	537.25	0.018	0.016	0.004	0.004	0.047	0.003	5.880
Pneumatic wheel roller	1	1.1	50	21	92	59	0.12	2.49	0.41	0.40	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.006	0.001	0.704
Roller, vibratory	1	2.5	20	20	92	59	0.12	2.49	0.41	0.40	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.006	0.000	0.657
Rollers, steel wheel	1	1.9	20	15	92	59	0.12	2.49	0.41	0.40	4.77	0.42	558.97	0.002	0.002	0.000	0.000	0.004	0.000	0.509
Tandem roller, 10 ton	1	0.1	20	1	92	59	0.12	2.49	0.41	0.40	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.027
Total Annual Construction Emissions Between 2011 – 2014														0.365	3.387	0.122	0.118	1.130	0.218	122.954

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-189: AMDTF Van & Truck Emissions –Alternative 2 –Central

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	128444	25	1284	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.331	0.001	0.000	0.029	0.032	18.190
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	778980	25	7,790	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.945	0.432	0.111	0.103	1.254	0.099	304.208
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.945	0.762	0.112	0.103	1.283	0.132	322.398

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-190: AMDTF Pavement Emissions –Alternative 2 –Central

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*# of years of construction*	*Emissions Rate VOC (tons/year)*
90135	0.04	17.90	0.06	0.25	0.30	2.1E-05	1.85	4	0.463
Total Annual Paving VOCs Between 2011-2014									0.463

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-191: AMDTF Total Construction Emissions –Alternative 2 –Central

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	1.3	4.1	0.2	0.2	2.4	0.8	445.4

Table I.3-192: AMDTF Construction Equipment Emissions – Alternative 3 - North

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Asphalt paver, 130 HP	1	0.9	50	18	130	59	1.68	2.07	0.46	0.45	4.59	0.38	550.19	0.003	0.003	0.001	0.001	0.007	0.001	0.837
Backhoe loader, 48hp	1	18.6	40	297	48	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.007	0.021	0.004	0.004	0.022	0.005	2.182
Chain saws, 36"	1	2.5	20	20	48	59	1.74	349.18	0.74	0.72	0.91	69.87	686.61	0.001	0.216	0.008	0.007	0.001	0.043	0.424
Chipping machine	1	1.3	50	25	144	43	2.00	2.46	12.63	11.62	5.98	0.59	550.61	0.003	0.004	0.001	0.001	0.010	0.001	0.938
Compressor, 250 cfm	1	40.0	40	640	83	43	1.69	2.40	0.58	0.56	5.42	0.54	573.27	0.044	0.060	0.014	0.014	0.136	0.014	14.394
Concrete pump, small	1	13.6	50	271	53	43	1.76	3.03	0.57	0.56	6.18	0.75	567.14	0.012	0.021	0.005	0.005	0.042	0.005	3.840
Crane, 90-ton	1	13.9	16	89	231	43	1.74	1.30	0.74	0.72	5.14	0.35	532.78	0.016	0.013	0.003	0.003	0.050	0.003	5.199
Crane, SP, 12 ton	1	33.8	16	216	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.039	0.031	0.008	0.007	0.122	0.008	12.602
Dozer, 300 HP	1	1.8	40	28	300	59	1.63	1.93	0.32	0.31	4.72	0.33	539.34	0.009	0.011	0.002	0.002	0.026	0.002	2.951
Front end loader, 1.5 cy	1	3.7	40	60	93	21	1.71	6.42	0.56	0.54	6.80	1.47	662.28	0.003	0.008	0.002	0.002	0.009	0.002	0.853
Gas engine vibrator	1	26.5	20	212	6	55	1.65	696.11	0.38	0.37	2.78	26.08	1093.00	0.000	0.500	0.000	0.000	0.002	0.019	0.785
Gas welding machine	1	8.8	40	141	17	68	2.03	642.74	1.31	1.27	3.24	11.35	996.20	0.000	1.178	0.000	0.000	0.006	0.021	1.826
Gradall, 3 ton, 1/2 cy	1	1.3	40	20	171	59	0.22	1.64	0.18	0.17	4.25	0.32	541.49	0.004	0.004	0.001	0.001	0.009	0.001	1.205
Grader, 30,000 lb	1	4.2	40	67	204	59	0.21	1.45	0.11	0.10	4.26	0.32	537.25	0.015	0.013	0.003	0.003	0.038	0.003	4.768
Pneumatic wheel roller	1	0.9	50	18	92	59	1.66	2.49	0.38	0.37	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.005	0.000	0.603
Roller, vibratory	1	1.7	20	13	92	59	1.64	2.49	0.36	0.35	4.77	0.42	558.97	0.001	0.002	0.000	0.000	0.004	0.000	0.449
Rollers, steel wheel	1	1.6	20	13	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.002	0.000	0.000	0.004	0.000	0.429
Tandem roller, 10 ton	1	0.1	20	1	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.027
Total Annual Construction Emissions Between 2011 – 2014														0.159	2.089	0.054	0.052	0.493	0.128	54.311

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-193: AMDTF Van & Truck Emissions – Alternative 3 - North

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	59109	25	591	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.152	0.000	0.000	0.013	0.015	8.371
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	590301	25	5,903	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.716	0.327	0.084	0.078	0.950	0.075	230.525
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.716	0.479	0.085	0.078	0.963	0.090	238.896

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-194: AMDTF Pavement Emissions – Alternative 3 - North

Total Pavement (square yards)	*Hot Mix Emission Factor[1] (lbs/ton)*	*Emulsified Emission Factor[1] (lbs/ton)**	*Hot Mix Application Rate[2] (gal/SY)*	*Primary Coat Application Rate[3] (gal/SY)*	*Tack Coat Application Rate[3] (gal/SY)*	*Hot Mix, Primary & Tack Coat asphalt (tons VOC/SY)*	*Total VOC (tons)*	*# of years of construction*	*Emissions Rate VOC (tons/year)*
73921	0.04	17.90	0.06	0.25	0.30	2.1E-05	1.52	4	0.379
Total Annual Paving VOCs Between 2011-2014									0.379

Source: 1. California Air Resources Board.
2. USCOE, Hot Mix Asphalt Paving Handbook, 2000.
3. FHWA, Road and Bridge Specifications, 2002.

Table I.3-195: AMDTF Total Construction Emissions – Alternative 3 - North

	Pollutant						
Construction Activity	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	0.9	2.6	0.1	0.1	1.5	0.6	293.2

Table I.3-196: AMDTF Construction Equipment Emissions – Alternative 3 - Central

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Centrif. water pump, 6"	1	0.1	50	2	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.000	0.000	0.000	0.000	0.000	0.000	0.028
Compressor, 250 cfm	1	174.4	40	2790	82.8	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.192	0.262	0.063	0.061	0.593	0.060	62.743
Concrete pump, small	1	2.8	50	55	52.7	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.002	0.004	0.001	0.001	0.008	0.001	0.779
Crane, 90-ton	1	1.5	16	9	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.002	0.001	0.000	0.000	0.005	0.000	0.541
Drill rig & augers	1	0.1	20	1	176	43	1.71	2.36	0.56	0.54	6.68	0.57	539.15	0.000	0.000	0.000	0.000	0.000	0.000	0.036
Dozer, 300 HP	1	0.7	40	10	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.003	0.004	0.001	0.001	0.010	0.001	1.093
Front end loader, 1.5 cy	1	0.7	40	10	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.000	0.001	0.000	0.000	0.002	0.000	0.149
Gas engine vibrator	1	8.0	20	64	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.151	0.000	0.000	0.001	0.006	0.237
Gas welding machine	1	6.7	40	107	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.893	0.000	0.000	0.005	0.016	1.384
Grader, 30,000 lb	1	0.7	40	10	204.4	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.002	0.002	0.000	0.000	0.006	0.000	0.742
Roller, vibratory	1	0.7	20	5	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.001	0.000	0.174
Total Annual Construction Emissions Between 2011 – 2014														0.203	1.321	0.066	0.064	0.631	0.084	67.907

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-197: AMDTF Van & Truck Emissions – Alternative 3 - Central

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	71307	25	713	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.184	0.000	0.000	0.016	0.018	10.098
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	203401	25	2034	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.247	0.113	0.029	0.027	0.327	0.026	79.432
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.247	0.296	0.030	0.027	0.343	0.044	89.531

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-198: AMDTF Total Construction Emissions – Alternative 3 - Central

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.5	1.6	0.1	0.1	1.0	0.1	157.4

3.4.5 Construction Emissions: Marine Corps Relocation – Related Actions/Utilities Projects

Table I.3-199: Utilities Construction Equipment Emissions –Power Basic Alternative 1

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Chain saws, 36"	1	0.2	20	2	6.8	70	2.00	349.18	12.63	11.62	0.91	69.87	686.61	0.000	0.003	0.000	0.000	0.000	0.001	0.006
Chipping machine	1	0.1	50	2	143.9	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.000	0.000	0.000	0.000	0.001	0.000	0.075
Compressor, 250 cfm	1	0.1	40	2	82.8	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.000	0.000	0.000	0.000	0.000	0.000	0.036
Crane, 90-ton	1	37.5	16	240	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.043	0.034	0.008	0.008	0.135	0.009	13.981
Crane, 33 ton	1	5.6	16	36	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.006	0.005	0.001	0.001	0.020	0.001	2.069
Dozer, 300 HP	1	0.2	20	2	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.001	0.001	0.000	0.000	0.001	0.000	0.168
Front end loader, 1.5 cy	1	37.8	40	604	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.026	0.084	0.017	0.017	0.089	0.019	8.646
Gas engine vibrator	1	18.8	20	150	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.104	0.000	0.000	0.001	0.004	0.164
Gas welding machine	1	24.3	40	388	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.001	3.233	0.001	0.001	0.016	0.057	5.011
Generator	1	24.3	50	485	50	43	1.74	3.02	0.72	0.70	6.14	0.80	567.43	0.020	0.034	0.008	0.008	0.070	0.009	6.460
Grader, 30,000 lb	1	0.4	40	6	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.001	0.001	0.000	0.000	0.004	0.000	0.457
Roller, vibratory	1	0.2	20	1	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.040
Total Annual Construction Emissions Between 2011 - 2014														0.099	3.750	0.036	0.035	0.338	0.110	37.506

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-200: Utilities Van & Truck Emissions - Power Basic Alternative 1

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	11482	25	115	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.030	0.000	0.000	0.003	0.003	1.626
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	32825	25	328	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.040	0.018	0.005	0.004	0.053	0.004	12.819
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.040	0.048	0.005	0.004	0.055	0.007	14.445

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-201: Utilities Total Construction Emissions - Power Basic Alternative 1

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	0.1	3.8	0.0	0.0	0.4	0.1	52.0

Table I.3-202: Utilities Construction Equipment Emissions –Potable Basic Water Alternative 1

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction																				
Backhoe loader, 48hp	1	290.7	40	4650	48	21	1.99	6.42	1.31	1.27	6.80	1.47	662.28	0.103	0.331	0.067	0.065	0.351	0.076	34.191
Chain saws, 36"	1	1.0	20	8	6.8	70	2.00	349.2	12.63	11.62	0.911	69.87	686.61	0.000	0.015	0.001	0.000	0.000	0.003	0.029
Chipping machine	1	0.5	50	10	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.001	0.002	0.000	0.000	0.004	0.000	0.375
Compressor, 250 cfm	1	3.0	40	47	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.003	0.004	0.001	0.001	0.010	0.001	1.062
Concrete pump, small	1	5.2	50	104	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.005	0.008	0.002	0.002	0.016	0.002	1.473
Crane, 90-ton	1	6.7	16	43	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.008	0.006	0.002	0.001	0.024	0.002	2.498
Crane, SP, 12 ton	1	294.6	16	1885	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.336	0.267	0.067	0.065	1.060	0.073	109.816
Vibratory hammer and generator	1	3.6	50	72	50	43	1.74	3.02	0.72	0.70	6.14	0.80	567.43	0.003	0.005	0.001	0.001	0.010	0.001	0.959

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Drill rig & augers	1	34.2	20	274	176	43	1.65	2.36	0.56	0.54	6.68	0.57	539.15	0.038	0.054	0.013	0.012	0.152	0.013	12.266
Dozer, 300 HP	1	0.1	40	1	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.001	0.001	0.000	0.000	0.001	0.000	0.168
Front end loader, TM, 2.5 cy	1	0.6	40	10	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.000	0.001	0.000	0.000	0.001	0.000	0.137
Gas engine vibrator	1	13.6	20	108	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.256	0.000	0.000	0.001	0.010	0.402
Gas welding machine	1	6.0	40	96	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.800	0.000	0.000	0.004	0.014	1.240
Grader, 30,000 lb	1	1.1	40	96	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.004	0.003	0.001	0.001	0.010	0.001	1.256
Hydraulic excavator, 3.5 cy	1	9.4	40	150	62	43	7.96	0.45	0.57	0.57	2.43	0.12	576.01	0.035	0.002	0.003	0.003	0.011	0.001	2.540
Roller, vibratory	1	0.1	20	1	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.018
Tug, 500 HP	1	0.6	50	12	500	80	140.66	0.781	0.25	0.25	7.923	0.07	524.77	0.744	0.004	0.001	0.001	0.042	0.000	2.774
Total Annual Construction Emissions Between 2011 – 2014														1.280	1.760	0.159	0.154	1.699	0.197	171.203

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-203: Utilities Van & Truck Emissions –Potable Basic Water Alternative 1

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	42740	25	427	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.110	0.000	0.000	0.010	0.011	6.053
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	629007	25	6270	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.763	0.349	0.090	0.083	1.012	0.080	245.641
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.763	0.459	0.090	0.083	1.022	0.091	251.693

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-204: Utilities Total Construction Emissions - Potable Basic Water Alternative 1

Construction Activity	*Pollutant*						
	SO_2	*CO*	PM_{10}	$PM_{2.5}$	NO_x	*VOC*	CO_2
Total Annual Emissions (TPY)	2.0	2.2	0.2	0.2	2.7	0.3	422.9

Table I.3-205: Utilities Construction Equipment Emissions – Potable Basic Water Alternative 2

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	PM_{10}	$PM_{2.5}$	NO_x	*VOC*	CO_2	SO_2	*CO*	PM_{10}	$PM_{2.5}$	NO_x	*VOC*	CO_2
Construction																				
Backhoe loader, 48hp	1	284.2	40	4546	48	21	1.99	6.42	1.31	1.27	6.80	1.47	662.28	0.101	0.343	0.066	0.064	0.343	0.074	33.426
Chain saws, 36"	1	0.7	20	6	6.8	70	2.00	349.2	12.63	11.62	0.911	69.87	686.61	0.000	0.010	0.000	0.000	0.000	0.002	0.020
Chipping machine	1	0.4	50	7	144	43	1.69	2.46	0.58	0.56	5.98	0.59	550.61	0.001	0.01	0.000	0.000	0.003	0.000	0.263
Compressor, 250 cfm	1	2.0	40	31	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.002	0.003	0.001	0.001	0.007	0.001	0.702
Concrete pump, small	1	4.6	50	91	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.004	0.007	0.002	0.002	0.014	0.002	1.289
Crane, 90-ton	1	2.8	16	18	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.003	0.002	0.001	0.001	0.010	0.001	1.025
Crane, SP, 12 ton	1	287.7	16	1841	231	43	1.63	1.30	0.32	0.31	5.14	0.35	532.78	0.328	0.261	0.065	0.063	1.036	0.071	107.262
Drill rig & augers	1	34.2	20	274	176	43	1.65	2.36	0.56	0.54	6.68	0.57	539.15	0.038	0.054	0.013	0.012	0.152	0.013	12.266
Dozer, 300 HP	1	0.1	40	1	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.000	0.000	0.000	0.000	0.001	0.000	0.084
Front end loader, TM, 2.5 cy	1	0.4	40	6	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.000	0.001	0.000	0.000	0.001	0.000	0.092
Gas engine vibrator	1	11.9	20	95	6	55	0.22	696.11	0.18	0.17	2.78	26.08	1093.00	0.000	0.225	0.000	0.000	0.001	0.008	0.353
Gas welding machine	1	5.4	40	86	17	68	0.21	642.74	0.11	0.10	3.24	11.35	996.20	0.000	0.720	0.000	0.000	0.004	0.013	1.116
Grader, 30,000 lb	1	0.7	40	11	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.002	0.002	0.001	0.001	0.006	0.000	0.799
Hydraulic excavator, 3.5 cy	1	8.4	40	134	62	43	7.96	0.45	0.57	0.57	2.43	0.12	576.01	0.031	0.002	0.002	0.002	0.010	0.000	2.269
Roller, vibratory	1	0.1	20	0	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.000	0.000	0.000	0.000	0.000	0.000	0.013
Total Annual Construction Emissions Between 2011 – 2014														0.511	1.612	0.151	0.146	1.587	0.186	160.980

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-206: Utilities Van & Truck Emissions - Potable Basic Water Alternative 2

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*							*Emission Rate (tons/year)*						
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction	39719	25	397	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.102	0.000	0.000	0.009	0.010	5.625
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	593680	25	5937	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.720	0.329	0.085	0.078	0.956	0.076	231.845
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.720	0.431	0.085	0.078	0.965	0.086	237.470

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-207: Utilities Total Construction Emissions - Potable Basic Water Alternative 2

Construction Activity	*Pollutant*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Total Annual Emissions (TPY)	1.2	2.0	0.2	0.2	2.6	0.3	398.4

Table I.3-208: Utilities Construction Equipment Emissions - Wastewater Basic Alternative 1a and 1b

Equipment Type/Activity	*Number of Units*	*Weeks*	*Usage Factor[1] %*	*Hours*	*Horse power[2] (hp)*	*Load Factor[2] (%)*	*Emission Factor[2] (grams/hp-hour)*							*Emission Rate (tons/year)*						
							SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*	*SO_2*	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Construction																				
Concrete pump, small	1	0.2	50	3.0	53	43	1.74	3.03	0.74	0.72	6.18	0.75	567.14	0.000	0.000	0.000	0.000	0.000	0.000	0.043
Gas engine vibrator	1	0.3	20	2.0	6	55	3.20	696.11	0.24	0.22	2.78	26.08	1093.00	0.000	0.013	0.000	0.000	0.000	0.000	0.021
Hydraulic excavator, 3.5 cy	1	0.1	40	0.8	171	59	1.66	1.64	0.38	0.37	4.25	0.32	541.49	0.000	0.000	0.000	0.000	0.000	0.000	0.048
Total Annual Construction Emissions Between 2011 – 2014														0.000	0.005	0.000	0.000	0.001	0.000	0.098

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-209: Utilities Van & Truck Emissions - Wastewater Basic Alternative 1a and 1b

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	155	25	2	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.000	0.000	0.000	0.000	0.000	0.022
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	3150	25	32	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.004	0.002	0.000	0.000	0.005	0.000	1.230
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.004	0.002	0.000	0.000	0.005	0.000	1.252

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-210: Utilities Total Construction Emissions - Wastewater Basic Alternative 1a and 1b

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.0	0.0	0.0	0.0	0.0	0.0	1.4

Table I.3-211: Utilities Construction Equipment Emissions –Solid Waste Basic Alternative 1 / Apra Harbor

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Compressor, 250 cfm	1	0.4	40	6	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.000	0.001	0.000	0.000	0.001	0.000	0.144
Dozer,75 HP	1	5.5	40	87	75	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.007	0.008	0.002	0.002	0.020	0.001	2.292
Dozer, 300 HP	1	1.0	40	16	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.005	0.006	0.001	0.001	0.015	0.001	1.682
Front end loader, 1.5 cy	1	1.0	40	16	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.001	0.002	0.000	0.000	0.002	0.001	0.229
Grader, 30,000 lb	1	2.6	40	41	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.009	0.008	0.002	0.002	0.023	0.002	2.912
Roller, vibratory	1	1.0	20	8	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.001	0.001	0.000	0.000	0.002	0.000	0.268
Total Annual Construction Emissions Between 2011 - 2014														0.023	0.026	0.006	0.005	0.064	0.005	7.527

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-212: Utilities Van & Truck Emissions –Solid Waste Basic Alternative 1 / Apra Harbor

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	3234	25	32	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.008	0.000	0.000	0.001	0.001	0.458
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	9201	25	92	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.011	0.005	0.001	0.001	0.015	0.001	3.593
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.011	0.013	0.001	0.001	0.016	0.002	4.051

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-213: Utilities Total Construction Emissions - Solid Waste Basic Alternative 1 / Apra Harbor

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.0	0.0	0.0	0.0	0.1	0.0	11.6

Table I.3-214: Utilities Construction Equipment Emissions - Solid Waste Basic Alternative 1 / Layon

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour)							Emission Rate (tons/year)						
							SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction																				
Compressor, 250 cfm	1	1.2	40	18	83	43	1.76	2.40	0.57	0.56	5.42	0.54	573.27	0.001	0.002	0.000	0.000	0.004	0.000	0.415
Dozer, 75 HP	1	16.0	40	256	75	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.021	0.024	0.005	0.005	0.059	0.004	6.729
Dozer, 200 HP	1	6.9	41	112	200	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.024	0.028	0.006	0.005	0.069	0.005	7.874
Dozer, 300 HP	1	2.9	40	46	300	59	1.65	1.93	0.38	0.37	4.72	0.33	539.34	0.015	0.017	0.003	0.003	0.043	0.003	4.878
Front end loader, 1.5 cy	1	2.9	40	46	93	21	2.03	6.42	1.31	1.27	6.80	1.47	662.28	0.002	0.006	0.001	0.001	0.007	0.001	0.664
Grader, 30,000 lb	1	7.3	40	117	204	59	1.64	1.45	0.36	0.35	4.26	0.32	537.25	0.026	0.023	0.006	0.005	0.066	0.005	8.335
Hydraulic excavator, 3.5 cy	1	8.6	40	137	62	43	1.76	2.43	0.59	0.57	5.41	0.56	576.01	0.007	0.010	0.002	0.002	0.022	0.002	2.310
Roller, vibratory	1	2.9	20	23	92	59	1.71	2.49	0.53	0.51	4.77	0.42	558.97	0.002	0.003	0.001	0.001	0.007	0.001	0.777
Total Annual Construction Emissions Between 2011 - 2014														0.098	0.114	0.024	0.023	0.276	0.021	31.982

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-215: Utilities Van & Truck Emissions - Solid Waste Basic Alternative 1 / Layon

Commuter Van (LDGT)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Stage	Total VMT	Speed in miles/hour	Hours	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Construction	10292	25	103	0.001	0.515	0.001	0.001	0.045	0.051	28.324	0.000	0.026	0.000	0.000	0.002	0.003	1.458
Trucks (HDDV)				Emission Factor[1] (lb/hr)							Emission Rate (tons/year)						
Construction	32423	25	324	0.243	0.111	0.029	0.026	0.322	0.025	78.104	0.039	0.018	0.005	0.004	0.052	0.004	12.662
Total Annual Motor Vehicle Emissions, Between 2011-2014											0.039	0.044	0.005	0.004	0.054	0.007	14.119

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-216: Utilities Total Construction Emissions - Solid Waste Basic Alternative 1 / Layon

Construction Activity	Pollutant						
	SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Total Annual Emissions (TPY)	0.1	0.2	0.0	0.0	0.3	0.0	46.1

Table I.3-217: Roadway Projects Estimated Construction Emission Burden – North, Alternative 1

	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
	2011	2011	2011	2011	2011	2011	2011

Table I.3-218: Roadway Projects Estimated Construction Emission Burden – Central, Alternative 1

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	0.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Table I.3-219: Roadway Projects Estimated Construction Emission Burden – Apra Harbor, Alternative 1

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-220: Roadway Projects Estimated Construction Emission Burden – South, Alternative 1

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Table I.3-221: Roadway Projects Estimated Construction Emission Burden – North, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-222: Roadway Projects Estimated Construction Emission Burden – Central, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	0.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Table I.3-223: Roadway Projects Estimated Construction Emission Burden – Apra Region, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	.02	0.02	0.0.9	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-224: Roadway Projects Estimated Construction Emission Burden – South, Alternative 2

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Table I.3-225: Roadway Projects Estimated Construction Emission Burden – North, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-226: Roadway Projects Estimated Construction Emission Burden – Central, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	0.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Table I.3-227: Roadway Projects Estimated Construction Emission Burden – Apra Harbor, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-228: Roadway Projects Estimated Construction Emission Burden – South, Alternative 3

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

Table I.3-229: Roadway Projects Estimated Construction Emission Burden – North, Alternative 8

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.0	20.3	8.4	4.1	1.4	15.3	3,881
Highest Monthly Emission Burden (Tons)	4.7	7.3	1.8	1.3	0.51	5.4	1,462
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.23	0.36	0.09	0.06	0.03	0.27	73.1
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-230: Roadway Projects Estimated Construction Emission Burden – Central, Alternative 8

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	54.6	84.2	17.2	14.4	5.9	62.4	16,707
Highest Monthly Emission Burden (Tons)	8.5	13.1	2.2	2.2	0.9	9.7	2,590
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.42	0.65	0.11	0.11	0.05	0.48	129
Year Highest Monthly Emission Burden Predicted to Occur	2012	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013	2012 & 2013

Table I.3-231: Roadway Projects Estimated Construction Emission Burden – Apra Harbor, Alternative 8

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	13.5	20.9	5.0	3.7	1.2	15.4	4,199
Highest Monthly Emission Burden (Tons)	1.6	2.5	0.59	0.44	0.34	1.82	494
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.08	0.12	0.03	0.02	0.02	0.09	24.7
Year Highest Monthly Emission Burden Predicted to Occur	2011	2011	2011	2011	2011	2011	2011

Table I.3-232: Roadway Projects Estimated Construction Emission Burden – South, Alternative 8

	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*VOC*	*SO_2*	*CO_2*
Maximum Yearly Value (Tons)	11.1	17.3	2.9	2.8	1.2	12.9	3310
Highest Monthly Emission Burden (Tons)	3.1	4.9	0.83	0.81	0.34	3.7	957
Average Daily Emission Burden (Based on Highest Month) (Tons)	0.16	0.25	0.04	0.04	0.02	0.18	47.8
Year Highest Monthly Emission Burden Predicted to Occur	2012	2013	2012 & 2013	2012 & 2013	2013	2013	2013

3.5 REGIONAL EMISSIONS UNDER PREFERRED ALTERNATIVES

The preferred alternatives (Table I.3-233) were evaluated for potential air quality impacts to Guam. Regional emissions occurring under the collective alternatives require analysis of both the location of the proposed actions and the timing of the proposed actions. The greatest collective impact to air quality resources would occur if all of the proposed actions were implemented concurrently. As construction activities would occur prior to operational activities, it was assumed that all of the proposed construction actions are occurring at the same time and that all operational activity will commence upon completion of construction. Although some components of the preferred alternative would require longer construction times than others, construction and operation in a specific area would not be occurring concurrently. Impacts on air quality are evaluated for each individual ROI. The scenario presented is a consideration of the preferred alternative from each individual component of the proposed action.

Table I.3-233: Collective Alternatives for Preferred Alternatives

Preferred Alternatives	
Alternative	Description
Alternative 2	Marine Corps Guam Relocation
Alternative 1	Marine Corps Tinian (CNMI) Relocation
Alternative 1	Aircraft Carrier Berthing
Alternative 1	Army Air Missile Defense Task Force (AMDTF)
Basic Alternative	Utilities – Power
Basic Alternative 1	Utilities – Potable Water
Basic Alternative 1a and 1b	Utilities –Wastewater
Basic Alternative 1	Utilities – Solid Waste
Alternative 2	Roadway Projects

Methods, emission factors, and input parameters for the analyses summarized in this section were obtained from the following references, with detailed of the analyses provided previously in Section 3.

- The Procedures of Emission Inventory Preparation, Volume IV: Mobile Sources (USEPA December 1992)
- Aircraft engine emission factors developed by the Navy's Aircraft Environmental Support Office (AESO) (AESO April 1999 – January 2001)
- U.S. Air Force Air Conformity Applicability Model (Version 4.3) (Air Force Center for Environmental Excellence [AFCEE] 2005)
- Aircraft Noise Study for Guam Joint Military Master Plan at Andersen AFB (Czech and Kester 2008)
- USEPA NONROAD emission factor model (USEPA December 2008)
- FHWA Roadway Construction Noise Model User's Guide (FHWA 2006)
- USEPA Mobile6 emission factor model (USEPA August 2003).

The significance criteria used to determine potential air quality impacts are summarized below. There criteria include:

- The Clean Air Act (CAA) General Conformity Rule (GCR) de minimis levels for nonattainment pollutant emissions.
- Criteria pollutants significance criteria selected based on Prevention of Significant Deterioration (PSD) major source threshold

Under the GCR, reasonably foreseeable emissions associated with all proposed operational and construction activities, both direct and indirect, must be quantified and compared to the annual *de minimis* levels for those pollutants in nonattainment areas. The areas around the Piti and Tanguisson power plants on Guam (Figure I.2-1) are SO_2 nonattainment areas. Apra Harbor is within the Piti SO_2 nonattainment area. The *de minimis* criterion for these nonattainment areas is 100 TPY for SO_2.

For the purposes of this summary impact evaluation, all construction and operational emissions are combined according to the preferred alternatives specified. Using these emission totals the CAA GCR applicability analysis was completed for those activities with potential to occur within the SO_2 nonattainment areas of Tanguisson and Piti. These emissions are further discussed in the CAA General Applicability Analysis (Section 3.6).

Greenhouse gas (GHG) emissions in the atmosphere are of concern because they contribute to global warming by trapping re-radiated energy. The total quantity of GHG emissions was expressed in terms of CO_2 emissions resulting under the preferred alternatives. CO_2 is not a criteria pollutant and the 250 TPY significance threshold is not applicable to CO_2. Therefore, greenhouse gases in terms of CO_2 emissions are presented only for disclosure purposes. GHG emissions in terms of CO_2 equivalents for the preferred alternatives are discussed for all ROIs collectively In Section 3.7 of this study.

Since the proposed action would mostly involve the relocation of the military operations that are currently occurring in the West Pacific region, such as training exercises, energy consumption from activities in the region are unlikely to change significantly and the overall global greenhouse gas emissions associated with the proposed action are likely to remain at the current levels on a regional scale. The following tables present the action scenario utilizing the preferred alternative from each individual component of the proposed action: Table I.3-234, Table I.3-235, Table I.3-236, Table I.3-237, Table I.3-238, Table I.3-239.

Table I.3-234: Annual Construction Emissions by EIS Volume and ROI – Preferred Alternatives

	ROI	Construction Activity	Year	Total Annual Pollutant Emissions (TPY)						
				SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC	CO_2
Volume 2 Alternative 2	North	Andersen AFB Airfield	2011 – 2014	0.5	1.5	0.1	0.1	1.0	2.5	166.0
		Training Facilities	2011 – 2014	0.0	0.1	0.0	0.0	0.0	0.0	7.4
		Main Cantonment	2011	6.4	26.2	1.5	1.4	13.3	10.4	2,188.9
			2012	10.4	42.9	2.5	2.3	21.7	16.9	3,581.9
			2013	13.3	54.8	3.2	13.3	27.7	21.6	4,576.8
			2014	13.3	54.8	3.2	3.0	27.7	21.6	4,576.8
			2015	9.9	40.5	2.3	2.2	20.5	16.0	3,382.9
			2016	4.6	19.1	1.1	1.0	9.6	7.5	1,591.9
		C3 and Non-Firing Training Facilities	2011 – 2014	0.2	0.6	0.0	0.0	0.3	0.9	49.3
	Central	C3 and Non-Firing Training Facilities	2011 – 2014	0.2	0.6	0.0	0.0	0.3	0.9	49.3
		Firing Training, Option A	2011 – 2014	0.4	1.6	0.1	0.1	1.0	0.5	138.9
		Firing Training, Option B	2011 – 2014	0.8	1.7	0.2	0.2	1.5	0.3	264.3
	Apra Harbor	Waterfront Operations	2011 – 2014	1.1	0.8	0.0	0.0	0.5	0.4	80.1
	South	Training Facilities	2011 – 2014	0.0	0.1	0.0	0.0	0.0	0.0	7.4
Volume 4 Alternative 1	Apra Harbor	Aircraft Carrier Berthing	2011 – 2014	0.4	1.4	0.1	0.1	0.7	0.2	118.9
		Dredging, ODMDS option	2014 – 2015	0.1	8.0	1.0	0.3	0.4	9.9	539.8
Volume 5 Alternative 1	North	Army AMDTF	2011 – 2014	1.3	4.2	0.2	0.2	2.5	0.9	453.7
Volume 6 Alternative 1	North	Utilities Wastewater	2011 – 2014	0.0	0.0	0.0	0.0	0.0	0.0	1.4
		Roadway	2011	13.5	11.7	4.5	3.3	18.3	1.3	3665.5
			2012	14.1	12.2	7.5	3.8	18.9	1.3	3699.4
			2013	15.3	13.0	8.4	4.1	20.3	1.4	3881.3
			2014	7.0	5.9	5.5	2.2	9.4	0.7	1896.0
			2015	4.1	3.5	2.9	1.2	5.5	0.4	1106.0
	Central	Utilities Power	2011 – 2014	0.1	3.8	0.0	0.0	0.4	0.1	52.0
		Utilities Long – Term Water	2011 – 2014	2.0	2.2	0.2	0.2	2.7	0.3	422.9
		Roadway	2011	17.0	14.7	5.3	4.0	23.0	1.6	4613.2
			2012	31.6	27.7	7.9	7.3	42.7	3.0	8467.8
			2013	62.4	54.6	15.8	14.4	84.2	5.9	16707.6
			2014	35.6	31.2	15.5	9.5	48.2	3.4	9680.5
			2015	5.0	4.3	17.2	4.2	6.7	0.5	1346.6
			2016	0.0	0.0	4.8	0.9	0.0	0.0	0.0
	Apra Harbor	Utilities Solid Waste	2011 – 2014	0.0	0.0	0.0	0.0	0.1	0.0	11.6
		Roadway	2011	15.4	13.5	5.0	3.7	20.9	1.5	4199.8
			2012	3.2	2.6	0.6	0.6	4.1	0.3	703.4
			2013	5.1	4.1	1.0	1.0	6.6	0.5	1166.0
	South	Roadway	2012	8.2	6.9	1.8	1.7	10.8	0.8	2042.2
			2013	13.0	11.1	2.9	2.8	17.3	1.2	3309.9

Note: [1] Air emissions from Tinian are not considered in the summary impacts of Guam air quality. Only CO^2 emissions are considered on a regional scale for GHG impacts.

Table I.3-235: Guam Annual Construction Emissions by Volume and ROIs – Preferred Alternatives

Year	*Total Construction Annual Pollutant Emissions (TPY)*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
2011	59.3	85.0	17.3	13.5	86.6	21.9	16490.5
2012	74.6	111.1	21.3	16.8	109.5	29.4	20317.8
2013	116.1	156.4	32.4	36.7	167.4	37.8	31464.8
2014	63.0	118.8	26.3	15.9	97.0	42.7	18516.3
2015	19.0	56.3	23.5	7.9	33.1	26.8	6375.2
2016	4.6	19.1	5.9	2.0	9.6	7.5	1591.9

Note: Bolded numbers indicate an exceedance of the 250 TPY significance criteria.

Table I.3-236: Annual Operational Emissions by EIS Volume and ROI – Preferred Alternatives

Action Item	*ROI*	*Operational Activity*	*Year*	*Total Annual Pollutant Emissions (TPY)*						
				SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
Volume 2 Alternative 2	North	Airfield Training Operations	2015 and on	0.2	1.6	1.0	1.0	5.6	0.4	1399.8
		Anderson AFB Aircraft Operations	2015 and on	2.1	135.6	20.6	20.6	40.1	45.8	4477.1
		On base Vehicle Operations	2015 and on	10.1	254.2	1.9	1.2	12.2	16.1	21235.8
	Central	Airfield Training Operations	2015 and on	0.1	0.5	0.5	0.5	1.9	0.1	179.5
		Training Vehicle Operations	2015 and on	0.2	1.6	24.1	2.4	0.3	0.2	161.8
		On base Vehicle Operations	2015 and on	2.8	70.9	0.5	0.3	3.4	4.5	5926.1
	Apra Harbor	Airfield Training Operations	2015 and on	0.1	0.4	0.4	0.4	2.0	0.1	361.0
		Vessel Training Operations	2015 and on	3.6	4.5	6.4	6.4	9.5	0.6	1423.1
		On base Vehicle Operations	2015 and on	0.3	8.6	0.1	0.0	0.4	0.5	716.3
	South	Airfield Training Operations	2015 and on	0.4	1.4	1.7	1.7	10.6	0.1	1883.8
		On base Vehicle Operations	2015 and on	0.1	0.8	0.0	0.0	0.0	0.1	77.6
		Training Vehicle Operations	2015 and on	0.0	0.0	0.5	0.1	0.0	0.0	2.3
Volume 4 Alternative 1	Apra Harbor	Aircraft Carrier Berthing	2015 and on	0.5	91.3	4.7	8.4	27.3	1.7	NA
Volume 6 Alternative 1	Apra Harbor	Utilities Solid Waste	2011 – 2013	NA	NA	NA	NA	NA	2.6 – 18.7	164.4 – 1194.8
			2014 and on	NA	NA	NA	NA	NA	0.6 – 2.6	1903.0 – 8235.0
	Total	Off-base Vehicle Operations[1]	2015 and on	99.4	2425.3	13.7	10.1	87.8	150.2	14188.0

Notes:
1. Based on 2030 estimates.

Table I.3-237: Guam Annual Operational Emissions – Preferred Alternatives

Year	*Total Operational Annual Pollutant Emissions (TPY)*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
2011	NA	NA	NA	NA	NA	2.6	164.4
2012	NA	NA	NA	NA	NA	9.0	571.8
2013	NA	NA	NA	NA	NA	18.7	1194.8
2014	NA	NA	NA	NA	NA	0.6	1903.0
2015	119.93	**2996.93**	76.10	53.11	201.04	221.3	54932.2
2016	119.93	**2996.93**	76.10	53.11	201.04	221.5	55697.1
2017 and on	119.93	**2996.93**	76.10	53.11	201.04	221.7 –223.0	56087.5 – 60267.2

Note: Bolded numbers indicate an exceedance of the 250 TPY significance criteria.

Table I.3-238: Guam Total Annual Construction and Operational Emissions Combined – Preferred Alternatives

Year	*Total Combined Annual Pollutant Emissions (TPY)*						
	SO_2	*CO*	*PM_{10}*	*$PM_{2.5}$*	*NO_x*	*VOC*	*CO_2*
2011	59.3	85.0	17.3	13.5	86.6	24.5	16654.9
2012	74.6	111.1	21.3	16.8	109.5	38.4	20889.6
2013	116.1	156.4	32.4	36.7	167.4	56.5	32659.7
2014	63.0	118.8	26.3	15.9	97.0	43.3	20419.7
2015	138.9	3053.2	99.6	61.0	234.1	248.0	61307.4
2016	124.6	3016.0	82.0	55.1	210.7	229.0	57289.0
2017 and on	119.9	2996.9	76.1	53.1	201.0	221.7 – 223.0	56087.5 – 60267.2

Note: Bolded numbers indicate an exceedance of the 250 TPY significance criteria.

Vehicular CO emissions are of local (microscale) concern with potential impacts concentrated around heavily congested intersections. Although the collective CO emissions are predicted to exceed 250 TPY under both construction and operational conditions, the further microscale dispersion modeling performed at the worst-case intersections (Section 3.3.7) indicated that no exceedance of the CO NAAQS would occur. Therefore, potential CO impacts would not be significant under the preferred alternatives. Table I.3-239 lists the worst-case intersections on Guam that were analyzed for CO concentration levels. These intersections showed no exceedance of the CO NAAQS under the preferred alternatives.

Table I.3-239: Intersections Analyzed for CO Microscale Impact Analysis – Preferred Alternatives

ROI	*Intersections*
North	Route 1/28
	Route 9/Andersen AFB North Gate
Central	Route 1/8
	Route 4/7A
	Route 16/27
Apra Harbor	Route 1/2A
South	Route 5/2A

3.6 CAA General Conformity Applicability Analysis

The 1990 amendments to the CAA (CAAA) require federal agencies to ensure that their actions conform to the State Implementation Plan (SIP) in a nonattainment area. The SIP is a plan that provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS) and it includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards. The federal agency responsible for an action is required to determine whether its action conforms to the applicable SIP.

The USEPA has developed two sets of conformity regulations—for transportation projects and non-transportation-related projects, respectively:

- Transportation projects developed or approved under the Federal Aid Highway Program or Federal Transit Act are governed by transportation conformity regulations (40 CFR Parts 51 and 93), which became effective December 27, 1993 and were revised August 15, 1997.
- Non-transportation projects are governed by general conformity regulations (40 CFR Parts 6, 51, and 93), described in the final rule for *Determining Conformity of General Federal Actions to State or Federal Implementation Plans,* published in the *Federal Register* on November 30, 1993. The general conformity rule became effective January 31, 1994 and was revised on March 24, 2010.

As the proposed action is a non-transportation project and would potentially involve activities in Piti and Tanguisson SO_2 nonattainment areas, the General Conformity Rule (GCR) applies to the proposed activities within the nonattainment areas. Therefore, a subsequent general conformity applicability analysis is required.

3.6.1 General Conformity Rule

The General Conformity Rule applies to federal actions occurring in an area designated as nonattainment for the NAAQS or in attainment areas subject to maintenance plans (maintenance areas). Federal actions occurring in an area in attainment with the NAAQS are not subject to the conformity rule.

A criteria pollutant is a pollutant for which an air quality standard has been established under the CAA. The designation of nonattainment is based on the exceedances or violations of the air quality standard. A maintenance plan establishes measures to control emissions to ensure the air quality standard is maintained in areas that have been redesignated as attainment from a previous nonattainment status.

Areas that meet the NAAQS standard for a criteria pollutant are designated as being in "attainment;" areas where the criteria pollutant level exceeds the NAAQS are designated as being in "nonattainment." O_3 nonattainment areas are subcategorized based on the severity of their pollution problem (marginal, moderate, serious, severe, and extreme). Particulate Matter (PM) and CO nonattainment areas are classified into two categories (moderate and serious). When insufficient data exists to determine an area's attainment status, it is designated unclassifiable (or attainment).

Components of the proposed action would occur at various locations on Guam. Many of the areas where the actions are proposed are currently designated as attainment areas for all criteria pollutants. There are two areas on Guam that are designated as attainment areas for CO, NO_x, O_3, PM (PM_{10} and $PM_{2.5}$), and Pb, but are designated as nonattainment areas for SO_2, as follows (see Figure I.2-1, Guam SO_2 Nonattainment Areas):

- Piti: Portion of Guam within a 3.5- kilometers (km) (2.2-mile) radius of the Piti Power Plant
- Tanguisson: Portion of Guam within a 3.5-km (2.2-mile) radius of the Tanguisson Power Plant

A maximum sulfur content of 0.5% was used based on USEPA's Heavy-Duty Standards/Diesel Fuel Regulatory Impact Analysis (RIA) (USEPA 2000). Based on the RIA, data observed in 1992 shows that No. 2 diesel fuel imports actually had sulfur content ranging from 0.39% to 0.5%. Therefore, using the actual highest sulfur content observed in 1992 (0.5 %) for vehicles in this analysis is considered appropriate and conservative and is also coincident with the highest sulfur content fuel input available in the NONROAD model.

Both areas are designated nonattainment for SO_2 as a result of monitored and modeled exceedances in the 1970s. Since that time, changes have been made to these power generation facilities. In accordance with 40 CFR Parts 80 and 86, both plants were rebuilt, upgrading their emission controls in the 1990s. Based on these improvements, Guam has submitted a redesignation request for the Piti area to USEPA. The pending redesignation request shows that Piti is now in attainment. In addition, as both plants are located on the western side of the island and the trade winds blow persistently from east-to-west, the impact of the SO_2 emissions on the people of Guam from the power plants is reduced. Mobile sources, such as cars, are a minor contributor to SO_2 emissions.

To focus general conformity requirements on those federal actions with the potential to have significant air quality impacts, threshold (*de minimis*) rates of emissions were established in the final rule. A formal conformity determination is required when the annual net total of direct and indirect emissions from a federal action occurring in a nonattainment or maintenance area for a criteria pollutant equals or exceeds the *de minimis* for this pollutant. Table I.3-240 lists the *de minimis* level by pollutant.

Under the General Conformity Rule (GCR), the total emissions resulting from the proposed federal actions must be compared to applicable *de minimis* levels on an annual basis. As defined by the GCR, if the emissions of a criteria pollutant (or its precursors) do not exceed the *de minimis* level, the federal action has minimal air quality impact and the action is determined to be in conformity for the pollutant under study. Therefore, no further analysis is necessary. Conversely, if the total direct and indirect emissions of a pollutant are above the *de minimis* level, a formal general conformity determination is required for that pollutant.

For SO_2 nonattainment areas, USEPA's conformity rules establish *de minimis* emission levels for SO_2. The de minimis level of 100 *TPY* would apply to SO_2.

Table I.3-240: De Minimis Emission Levels for Criteria Air Pollutants

Pollutant	Nonattainment Designation	Tons/Year
Ozone*	Serious	50
	Severe	25
	Extreme	10
	Other nonattainment or maintenance areas outside ozone transport region	100
	Marginal and moderate nonattainment areas inside ozone transport region	50/100**
Carbon Monoxide	All	100
Sulfur Dioxide	All	100
Lead	All	25
Nitrogen Dioxide	All	100
Particulate Matter ≤ 10 microns	Moderate	100
	Serious	70
Particulate Matter ≤ 2.5 microns***	All	100

Notes: *Applies to ozone precursors – volatile organic compounds (VOCs) and nitrogen oxides (NO_X).
** VOCs/NO_X
*** Applies to $PM_{2.5}$ and its precursors.

3.6.2 Applicability Analysis

The applicability analysis was performed for the preferred alternatives, to determine whether the preferred alternatives would be consistent with the GCR and whether a formal conformity analysis would be required. Pursuant to the GCR, all reasonably foreseeable emissions (both direct and indirect) associated with the implementation of the preferred alternatives within two nonattainment areas at Guam were quantified and compared to the applicable annual *de minimis* levels to determine potential air quality impacts.

The conformity analysis for a federal action examines the impacts of the direct and indirect net emissions from mobile and stationary sources. Direct emissions are emissions of a criteria pollutant or its precursors that are caused or initiated by a federal action and occur at the same time and place as the action. Indirect emissions, occurring later in time and/or further removed in distance from the action itself, must be included in the determination if both of the following apply:

- The federal agency can practically control the emissions and has continuing program responsibility to maintain control.
- The emissions caused by the federal action are reasonably foreseeable.

The following project components under the proposed action were identified with potential to occur within the two SO_2 nonattainment areas even partially and the emissions from these components were conservatively estimated for purposes of the GCR applicability analysis.

Tanguisson Area

- Operation
  - Aircraft training
    - Flight to and from Andersen South
  - On Base Vehicles
    - Marine Base in Finegayan

- Construction
  - Main Cantonment
    - Family housing in the former FAA and South Finnegayan areas
  - Power Basic Alternative
    - All
  - Potable Basic Water Alternative 1
    - Distribution lines
  - Wastewater Basic Alternative 1a and 1b
    - All

Piti Area

- Operation
  - Aircraft Carrier Berthing Operations
    - Aircraft Carrier Berthing
    - Transient Aircraft
  - Aircraft Operational Training
    - Flight to and from Orote
  - On Base Vehicles
    - Naval Base & Polaris Point
- Construction
  - Waterfront
    - All
  - Aircraft Carrier Berthing
    - All
  - Potable Basic Water Alternative 1
    - Distribution lines

3.6.2.1 AIR EMISSIONS FROM OPERATIONAL ACTIVITIES

Aircraft Operational Emissions from Aircraft Carrier Berthing

The DoD proposes to construct a new deep-draft wharf with shoreside infrastructure improvements in Apra Harbor, Guam at Polaris Point (within the Piti nonattainment area) to provide for a transient nuclear powered aircraft carrier. Up to 59 aircraft including strike, surveillance, control, and other logistic and combat aircraft, would either remain onboard the ship or fly to Andersen AFB. Two locations for siting the new wharf are considered under the proposed action: 1) Polaris Point (preferred), and 2) the Former Ship Repair Facility (SRF).

The Aircraft Carrier Berthing component of the proposed action requires operational activities that have the potential to generate air emissions within Piti nonattainment area. Specifically, operational emissions would result from the following activities:

- Operation of the aircraft carriers' on-board diesel generators.
- Aircraft carrier routine maintenance.
- Transient aircraft operations.
- Escort vessels operations.
- Operation of the tugboats that assist in navigating the aircraft carrier through the harbor.
- Operation of the on-road vehicles transporting the aircraft carrier crew.
- Operations of the on-road trucks transporting materials to and from aircraft carriers.

The emissions inventory for one aircraft carrier homeporting for six months was taken from a U.S. Navy study (U.S. Navy July 1999). This inventory was used to prorate the aircraft carrier berthing emissions based on an increase in aircraft carrier berthing days at Apra Harbor of 49 days.

Commercial port transporting service air emissions were properly excluded from the general conformity analysis because they do not meet the indirect emissions criteria. These emissions are not reasonably foreseeable and cannot be practicably controlled by DoD as a part of our continuing program responsibility.

Accompanying vessel and tugboat emissions were also not considered in this analysis because these operations are a function of the number of aircraft carrier visits rather than of the number of berthing days. Because the number of aircraft carrier visits at Apra Harbor would not increase, no additional emissions from vessel and tugboat operations are anticipated.

The aircraft carrier berthing-related vehicle operations would be increased due to an increase in berthing days. However, the SO_2 impacts from increased on-road vehicular trips are covered in the traffic-related air quality impact analysis discussed later in this study. Aircraft carrier berthing-related emissions from operations in 2014 and beyond are shown in Table I.3-241.

Table I.3-241: Aircraft Carrier Berthing Operational Emissions in Piti Nonattainment Area

Operational Activities 2016 and after	Pollutant (TPY)
	SO_2
Piti	
Aircraft Carrier Berthing	0.1
Transient Aircraft	0.4
Total Operation	0.5

Aircraft Operational Training Emissions

Of the five sites considered on Guam for aviation training, two are considered for the SO_2 nonattainment area analyses. The Orote Airfield at Navy Main Base lies mostly within the Piti area, therefore its operations are included. Similarly, Andersen South (including two improved helicopter landing pads) lies near the Tanguisson area, and so its aircraft operations can be conservatively considered to take place within the nonattainment area. The types of aviation training and facility requirements associated with Marine Corps units that would relocate to Guam are listed in Table I.3-242. The minimum requirement for most training would be twice annually; however, the minimum Field carrier landing practice (FCLP) training requirement is 12 times annually. The majority of this training requirement would be met at Guam and surrounding airspace.

The aircraft squadrons are proposed for basing at Andersen AFB North Ramp, in a separately constructed air facility. To reduce the operationally undesirable, simultaneous mix of fixed wing and rotary wing operations at Andersen AFB, proposed Marine Corps aviation training would primarily occur at the following sites rather than North Ramp: Northwest Field at Andersen AFB, Orote Airfield at Navy Main Cantonment, Andersen South, and Naval Munitions Site.

Table I.3-242: Aviation Training Types

Training Type		*Facility/Airspace Requirements*
FAM	Familiarization and Instrument Flight	Improved airfield with air rescue available. FAM is a daylight operation. Instrument flight is day and night.
FORM	Formation Flights	Flying in formation, often in Air Traffic Controlled Assigned Airspace (ATCAA) assigned by FAA. Also includes helicopter flying Visual Flight. Rules (VFR) in formation. Day and night use.
CAL	Confined Area Landing	Ground space, helicopter landing zones in approx. 10 locations. Day and night.
TERF	Terrain Flights	1 or more routes in ATCAA assigned by FAA over varying terrain for day and night flights at 50 to 200 ft (15 to 61 m) above ground level.
EXT	External Loads	Both unimproved and improved LZs for day and night use. Unimproved LZs at remote sites. Ground access needed to pre-position external loads that cannot be carried across public roads or populated areas.
GTR	Ground Threat Reaction	Tactical flight maneuver area or route where ground based threat simulators can be placed. Air routes similar to TERF. Day and night. Includes training on Tinian that is addressed in Volume 3.
FCLP	Field Carrier Landing Practice	Simulated ship deck paved area. Day and night.
TAC	Tactics	Routes over water or land of at least 50 nm (93 km), for chaff, flares, and .50 cal machine gun engagement. Day and night. Includes training in CNMI that is addressed in the MIRC EIS/OEIS.
AG	Aerial Gunnery	Air-to-Ground gun munitions against ground targets. Day and night. Includes training in CNMI that is addressed in the MIRC EIS/OEIS.
HIE	Helicopter Insertion and Extraction	Fast rope, rappelling, helo-casting, and parachute operations in improved fields, drop zones, and water operating areas. Day and night
DM	Defensive Maneuvers	Airspace routes similar to TERF, but at higher altitude. Day and night.

Source: NAVFAC Pacific 2009.

In addition, aviation training would occur along proposed flight corridors and SUA within and offshore Guam and integrated with MIRC training operations. Specific aviation training proposals for Guam and surrounding airspace are as follows:

Marine Air Control Group Training (MACG). MACG training involves coordination of air command and control and air defense within the Marine Aircraft Wing.

Training in Military Flight Corridors, Routes, or Tactical Navigation Area. Aviation training requirements requiring military flight corridors or routes include Terrain Flight (TERF), Ground Threat Reaction (GTR), and Defensive Maneuvering (DM). All four aircraft types associated with the proposed action conduct TERF, GTR, and DM training. Table I.3-254 provides an estimate of aviation training that would occur in designated airspace within nonattainment areas on Guam based on the minimum biannual training requirement for TERF, GTR, and DM for aircrews associated with the proposed action. In addition, sorties associated with the transport personnel from Andersen AFB North Ramp to NMS or Andersen South for maneuver training is also estimated in Table I.3-254 (as MAN-LFT).

Table I.3-243: Estimated Annual Training Sortie Activity in Military Flight Corridors, Routes, or Tactical Navigation Area on Guam Based on Minimum Training Requirements

Location and Training Type	*Sortie-Ops by Aircraft Type*				*Total Annual Sortie-Ops*	*Duration/Sortie-Op(Minutes)*	*Duration of Sortie-Ops by Aircraft Type (Minutes)*				*Total Annual Sortie-Op Minutes*	*% Night*	*% Below 3,000ft AGL*
	CH-53	*MV-22*	*AH-1*	*UH-1*			*CH-53*	*MV-22*	*AH-1*	*UH-1*			
MAN-LFT	720	0	0	0	912	10	9,120	0	0	0	9,120	10%	80%

Landing Zone Training. Both improved and unimproved LZs are required to support training in Confined Area Landing (CAL), External Loads (EXT), and Helicopter Insertion Extraction (HIE). CAL training is required for all four aircraft types associated with the proposed action. EXT and HIE training is required for CH-53, UH-1, and MV-22, but not AH-1 aircraft. CAL requires approximately 10 LZs in various locations. All three types of training would include both day and night operations.

Table I.3-244 provides an estimate of aviation training that would occur at NWF, Andersen South, NMS, and Orote Airfield LZs based on the minimum bi-annual training requirement for CAL, EXT, and HIE for aircrews associated with the proposed action. In addition, sorties associated with the lifts for access to Andersen South and NMS for maneuver training are also estimated in Table I.3-244 (as MAN-LFT).

The emissions from aircraft training at existing airfields were estimated using the same methods and emission factors guidance described previously for Andersen AFB Aircraft Basing Operations. The training flight sorties, as shown in Table I.3-255 and flight hours defined around each airfield were based on information provided above.

Table I.3-244: Estimated Annual Training Sortie Activity at Guam LZ Sites

Location and Training Type	Sortie-Ops by Aircraft Type				Total Annual Sortie-Ops	Duration/Sortie-Op(Minutes)	Duration of Sortie-Ops by Aircraft Type (Minutes)				Total Annual Sortie-Op Minutes	% Night	% Below 3,000ft AGL	Annual Freq. Training/Location(Days)
	CH-53	MV-22	AH-1	UH-1			CH-53	MV-22	AH-1	UH-1				
Orote Airfield														
EXT	20	60	0	15	95	2	40	120	0	30	190	10%	100%	1-2
Andersen South														
CAL	20	60	30	15	125	2	40	120	60	30	250	10%	100%	2-3
EXT	13	40	0	10	63	2	27	80	0	20	127	10%	100%	2-3
HIE	24	72	0	18	114	2	48	144	0	36	228	10%	100%	2-3
MAN-LFT	720	0	0	0	720	2	1,440	0	0	0	1,440	10%	80%	90

Table I.3-245: Annual Sortie-Ops by Training Airspace within Nonattainment Areas

Aircraft	Sortie-Ops	% Sortie-Ops	Sortie-Ops /Area	Min/Sortie-Op	% < 3,000 ft	% Sortie -Ops	Sortie-Ops /Area	Min/Sortie -Op	% < 3,000 ft
CAL - Confined Area Landing									
		ANDY S							
CH-53	80	25%	20	90	75%				
MV-22	240		60	120	75%				
AH-1	120		30	90	75%				
UH-1	60		15	60	75%				
EXT - External Loads									
		Orote				ANDY S			
CH-53	80	25%	20	90	100	17%	13.3333	90	100
MV-22	240		60	120	100		40	120	100
AH-1	120		30	90	100		20	90	100
UH-1	60		15	60	100		10	60	100
FFCLP - Field Carrier Landing Practice									
		Orote							
CH-53	480	33%	160	90	100				
MV-22	1440		480	120	100				
AH-1	720		240	90	100				
UH-1	360		120	60	100				
HIE - Helicopter Insertion and Extraction									
		ANDY S							
CH-53	48	50%	24	60	5%				
MV-22	144		72	90	5%				
AH-1	72		36	60	5%				
UH-1	36		18	30	5%				

The annual aircraft training flight emissions are summarized in Table I.3-246.

Table I.3-246: Aircraft Training Flight Annual Emissions within Nonattainment Areas

Location	*Pollutant (TPY)*
	SO_2
Tanguisson	
Flight to and from Andersen South	0.1
Piti	
Flight to and from Orote	0.1
Sorce: Table I.3-32.	

On Base Vehicle Operational Emissions

On base emissions will occur from commuter vehicles traveling onto each base. The on base vehicle emissions were estimated using the same method described for the training vehicle operational emissions. Only exhaust emissions were analyzed since all roadways will be paved.

Average daily traffic trips were analyzed at each gate for each base. To be conservative, at each base the gate with the maximum amount of daily trips was chosen. Average annual vehicle miles traveled for each type of vehicle were estimated based on a 365 day per year work schedule. The different vehicle types traveling through the gates were analyzed with the following vehicle class mix as summarized in Attachment A in the Guam Implementation Strategy document:

- Class 1, 2, 3 – Motorcycles, cars, pickups, cars/pickups with trailers: 91.4%
- Class 4, 5, 6, 7 – Single unit trucks including buses: 7.8%
- Class 8 – Multi unit truck with four axles: 0.5%
- Class 9 and larger – Multi unit trucks with five or more axles: 0.3%

The estimated on base vehicle emissions are shown in Table I.3-247. On base emissions will occur from commuter vehicles traveling onto each base. The on base vehicle emissions were estimated using the same method described for the training vehicle operational emissions. Only exhaust emissions were analyzed since all roadways will be paved.

Table I.3-247: On Base Vehicle Emissions within Nonattainment Areas

Activity Area	*Gate*	*FHWA Vehicle Classification*	*Annual VMT*	*Emission Factors (g/mi)*	*Vehicle Emissions (tons/yr)*
				SO_2	*SO_2*
Tanguisson (at Marine Base in Finegayan)	C8	1, 2, 3	36,411,780	0.007	0.273
		4, 5, 6, 7	3,107,351	1.869	6.401
		8	199,189	4.382	0.962
		9 and larger	119,514	4.382	0.577
Piti (at Naval Base & Polaris Point)	Total	1, 2, 3	1,506,249	0.007	0.011
		4, 5, 6, 7	128,542	1.869	0.265
		8	8,240	4.382	0.040
		9 and larger	4,944	4.382	0.024

On base annual commuting vehicle emissions were estimated using the methodology presented above and are summarized in Table I.3-248.

Table I.3-248: On Base Vehicle Annual Emissions within Nonattainment Areas

On Base Commuting Vehicle Emissions	*Pollutant (TPY)*
	SO_2
Tanguisson (at Finegayan)	8.2
Piti (at Naval Base & Polaris Point)	0.3

3.6.2.2 Air Emissions from Construction Activities

Construction-related emissions were estimated for each component of the proposed action. The different construction activities associated with different components of the proposed action are described below:

Marine Corps Relocation to Guam (Volume 2 of EIS) proposes the following five land use functions: Airfield Operations, Waterfront Operations, Main Cantonment, Family Housing, and Training. For the training function, the facilities can be further divided into three categories: firing ranges, non-fire maneuver ranges, and aviation training ranges. Among the four alternatives, these proposed training facilities vary depending on the land use function, location, and quantity of non-DoD land to be acquired. Most project components that would affect potential air quality conditions remain the same for each alternative including:

- The scale of construction
- Airfield operations
- Waterfront operations
- Aviation training operations
- The scale of ground training

The construction effort for all airfield, waterfront, and training projects is assumed to be the same, regardless of location. Therefore, the air emissions for these projects calculated for Alternative 1 are assumed to be representative of the preferred alternative. Although the total building space does not vary by alternative for the main cantonment project component, the total size of earth disturbance under each alternative does vary slightly. As a result, the pollutant emissions associated with the main cantonment construction activity were estimated individually for each alternative. Figure I.3-3 presents those proposed military installation areas considered and estimated for potentially contributing air emissions within the Tanguisson nonattainment area.

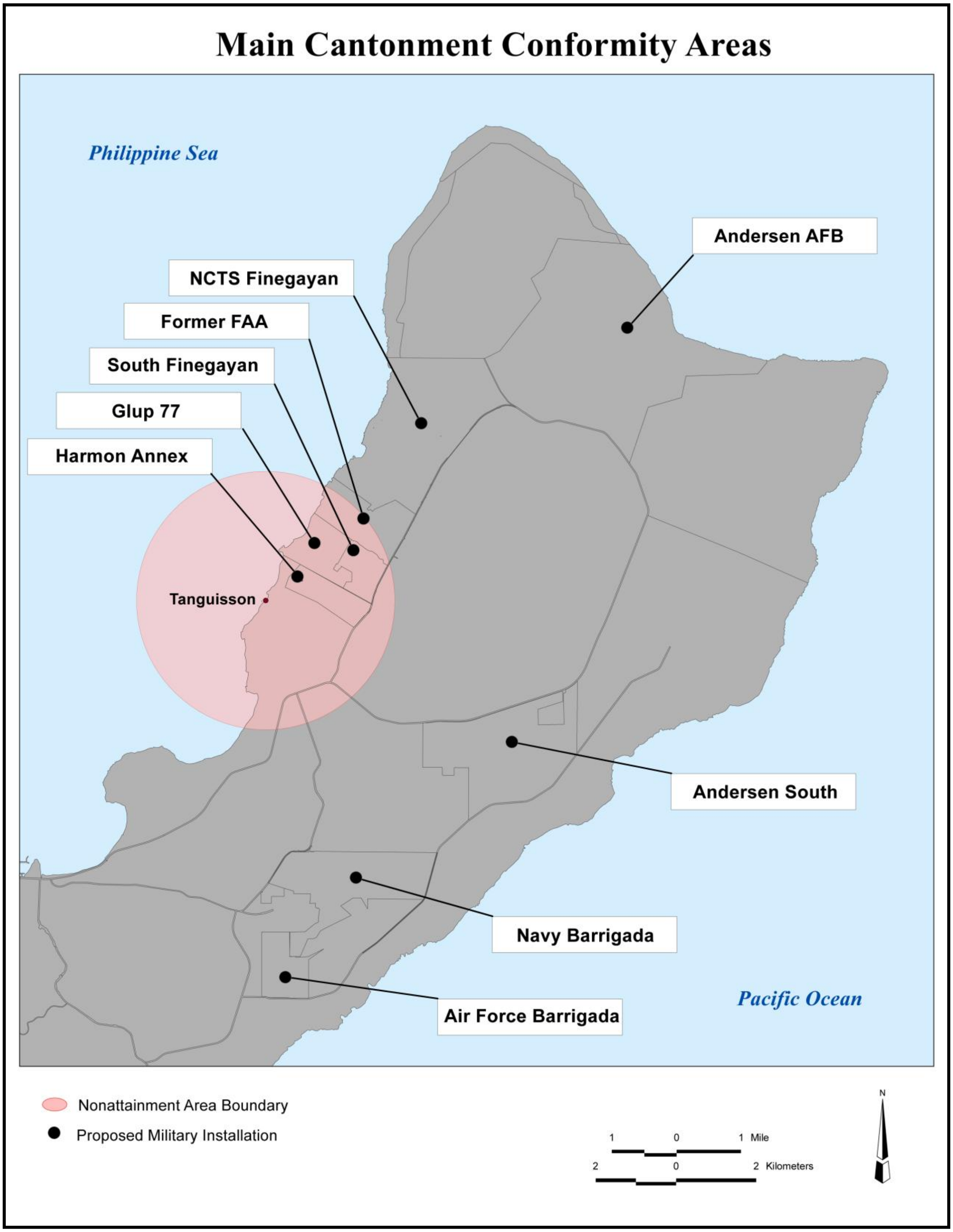


Figure I.3-3. Main Cantonment Conformity Areas

Construction activities, including the operation of construction equipment, trucks, and workers' commuting vehicles, may have short-term air quality impacts. In estimating construction-related criteria pollutants and CO_2 emissions, the usage of equipment, the likely duration of each activity, and manpower estimates for the construction were based on the information described in Volume 2 of the EIS for future project-associated construction activities. It is assumed for the emissions estimate purposes that major construction activities would begin in 2011 and last through 2014 with minimal effort during 2010 for all projects except for the construction of main cantonment. The construction of main cantonment is assumed to occur from 2011 to 2016 based on the construction cost profile projected for the proposed action.

Marine Corps Relocation - Training on Tinian (Volume 3 of the EIS) would require the construction of a Range Training Area (RTA) under each alternative considered which consists of four proposed live-fire ranges (platoon battle course, automated combat pistol range, rifle known distance range, and field firing range). Construction activities such as the operation of construction equipment and trucks may have short-term air quality impacts, but are not considered in the CAA General Conformity Applicability Analysis because they would not occur within either of the Guam nonattainment areas.

Aircraft Carrier Berthing (Volume 4 of the EIS) focuses on the proposed construction of a new deep-draft wharf with shoreside infrastructure improvements, creating the capability to support a transient nuclear powered aircraft carrier in Apra Harbor, Guam. Under the proposed action with a transient-capable port, there would be approximately three visits per year for up to approximately 21 days per visit, or combination thereof, for a total of approximately 63 days in port. The longer transient visits would interfere with existing munitions operations and therefore require a new deep-draft wharf that can accommodate the transient aircraft carrier.

Estimates on construction activities were calculated to identify equipment, material, and manpower requirements for the construction associated with the proposed aircraft carrier berthing project at Polaris Point. Assumptions were made to develop a list of major construction items, necessary equipment, and productivity levels necessary for the completed construction of Polaris Point including, but not limited to: shoreside structure prototypes, a bermed fuel tank, an electric substation, stormwater management, the Morale, Welfare and Recreation (MWR) area, a sewer pump station, a Bilge Oily Waste Treatment System (BOWTS) pump station, a BOWTS pump station prototype, and the wharf and related dredging activities.

Army Air and Missile Defense Task Force (Volume 5 of the EIS) proposes the following three missile components: The Terminal High Altitude Area Defense (THAAD) system is a long-range, land based theater defense weapon which acts as the upper tier of defense against ballistic missiles; Patriot Missiles target short-range ballistic missiles which threaten the THAAD or other civilian or military assets on Guam; and Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) engages targets to beyond line-of-sight and defends against the air threat from unmanned aerial vehicles and cruise missiles. Construction activities such as the operation of construction equipment and trucks would have short-term air quality impacts, but are not considered in the CAA General Conformity Applicability Analysis because they would not occur within either of the Guam nonattainment areas.

Related Actions – Utilities and Off Base Roadway Projects on Guam (Volume 6 of the EIS) would increase the demand on power, water, wastewater and solid waste utilities as part of the proposed military buildup on Guam associated with the relocation of the Marine Corps, the Navy aircraft carrier berthing, and Army Air and Missile Defense Task Force (AMDTF). The Navy conducted utility studies for power, water, wastewater, and solid waste that assumed that the construction workforce would reside off base and would be served by Guam public utilities at their place of residence. Construction activities involving the operation of construction equipment, trucks, and workers' commuting vehicles may have short-term air quality impacts. Given the lack of a specific construction schedule for each applicable project during the early planning stage, the overall length of utility construction for each project is assumed to be four years from 2011 through 2014.

Because no specific information regarding sizes or types of construction is provided in the case of certain components, a series of construction prototypes was developed to represent these components. Estimates were developed for those components for which adequate specific information is available; however when the construction was considered similar to one of the prototypes, the prototype and scaling method were used.

Detail construction activity forecast methodologies and assumptions used for each applicable project component are described in Chapter 3.4.

The *2003 RSMeans Facilities Construction Cost Data* (RS Means 2003a) manual was used to assign construction materials, equipment use and duration and manpower requirements to each prototype. The manual provides planning level estimates for construction materials, equipment use and duration information, and manpower requirements for construction and development. If construction material information, equipment use and duration, and manpower requirements were available then that information was used.

The weekly duration for each activity was assumed to be eight hours per day, five days per week. The emissions estimate assumes for only one piece of equipment because the same amount of construction activities can be accomplished by using one piece of equipment for one week, or can be shortened to half a week by using two pieces simultaneously. The key input in the emissions calculations is the total number of equipment hours required to complete the work. Therefore, the input of one piece of equipment used in the calculations is only for the purposes of completing them and does not reflect the actual number of pieces equipment that will be used on site during construction.

All construction equipment was assumed to be diesel powered unless otherwise noted. Pieces of equipment to be used for the construction and demolition activities include, but are not limited to:

- Backhoe loaders
- Chain saws
- Chipping machines
- Compressors
- Concrete pumps
- Cranes
- Drill rig and augurs
- Dozers
- Dump trucks
- Excavators
- Front end loaders
- Gas engine vibrators
- Gas welding machines
- Generators

- Gradalls
- Graders
- Hammers
- Pavement removers
- Pavement breakers
- Pavers
- Pumps
- Rammers/tampers
- Rollers
- Trenchers
- Tug boats

Equipment Emission Estimate

Estimates of the operational emissions from construction equipment were developed based on the estimated hours of equipment use and the emission factors for each type of equipment. Emission factors for SO_2 were based on USEPA's NONROAD emission factor model incorporating the use of high sulfur content (i.e., 0.5 %). The average equipment horsepower (hp) values and equipment power load factors were obtained in association with the NONROAD emission factors.

A maximum sulfur content of 0.5% was used based on USEPA's Heavy-Duty Standards/Diesel Fuel Regulatory Impact Analysis (RIA) (USEPA 2000). Based on the RIA, data observed in 1992 shows that No. 2 diesel fuel imports actually had sulfur content ranging from 0.39% to 0.5%. Therefore, using the actual highest sulfur content observed in 1992 (0.5 %) for vehicles in this analysis is considered appropriate and conservative and is also coincident with the highest sulfur content fuel input available in the NONROAD model. It should also be noted that with the introduction of the Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements (40 CFR Parts 69, 80, and 86) in 2006, refiners were required to start producing diesel fuel for use in highway vehicles with a sulfur content of no more than 15 ppm. Therefore, the sulfur content of fuels since 1992 has decreased in general although Guam has been granted an exemption from using low sulfur fuel (see Volume 6, Section 7.2). DoD is currently examining the potential use of ultra low sulfur fuel for construction activities and highway diesel vehicles on Guam, so that the actual sulfur content used may be far lower than the results provided here.

Because the operational activity data presented in RSMeans' cost data books are generated based on the overall length of equipment presence duration on site, an actual running time factor (i.e., actual usage factor) was employed to determine actual equipment usage hours for the purpose of estimating equipment emissions. The usage factor for each equipment type was obtained fromFHWA *Roadway Construction Noise Model User's Guide* (FHWA January 2006). Emission factors related to construction-associated delivery trucks were obtained using the USEPA Mobile6 emission factor model (USEPA October 2002) which provides an emission factor database for various truck classifications.

Emission factors (in grams of pollutant per hour per horsepower) were multiplied by the estimated running time and equipment average horsepower to calculate the total grams of pollutant from each piece of equipment. Finally, the total grams of pollutant were converted to tons of pollutant.

The USEPA recommends the following formula to calculate hourly emissions from nonroad engine sources including cranes, backhoes, etc.:

$$M_i = N \times HP \times LF \times EF_i$$

Where:

M_i = mass of emissions of *i*th pollutants during inventory period;

N = source population (units);

HP = average rated horsepower;

LF = typical load factor; and

EF_i = average emissions of *i*th pollutant per unit of use (e.g., grams per horsepower-hour).

Typical load factor values were obtained from *Nonroad Engine Emissions Model Worksheet* (USEPA December 2008). Equipment running times were estimated based on an 8 hour per day schedule. A sample calculation for SO_2 emissions from a 90-ton crane engine during the Waterfront construction at Apra Harbor follows:

Operational Hours = 4.5 hours (1 crane x 0.7 weeks x 5 days x 8 hr/day x 16% time usage factor)

Operational Emissions = 4.5 hours x 231 hp x 43% x 1.63 grams/hp-hr

= 0.001 tons (see Table I.3-251)

Vehicle Emission Estimate

Truck and commuting vehicle operations also would result in indirect emissions. Emission factors for trucks (including dump, delivery, tractor, and tractor trucks that were modeled as heavy-duty diesel vehicles) for years 2011-2014 using the USEPA Mobile 6.2 Emission Factor model (USEPA October 2002). National default input parameters for the summer and winter seasons were used, as these were considered the most similar parameters available. The modeled emission factors were then multiplied by the vehicle operation hours to determine total emissions. Total trucks were estimated based on a round trip assumption of 20 miles. The estimate of construction emissions with potential to occur within the two nonattainment areas from the proposed action described in Volumes 2, 4, and 6 are summarized below in Table I.3-249 through Table I.3-258. For Alternative 2 of the Main Cantonment, all of the family housing will be built in former FAA and South Finnegayan areas, which lie within the Tanguisson nonattainment area. Family housing will cover 645 acres, which is 29.3% of the 2,200 total acres needed for the construction of Main Cantonment under Alternative 2. Therefore, it is assumed that 29.3% of the total construction emissions are within the Tanguisson area (Table I.3-249).

For portable basic water, 10% of the distribution lines lie within both the Tanguisson and Piti nonattainment areas. Therefore, it is conservatively assumed that 10% of the total construction emissions associated with portable water construction activities are within the two nonattainment areas (Table I.3-256).

Volume 2: Marine Corps Relocation - Guam

Table I.3-249: Percentage of Main Cantoment Area in Tanguisson Nonattainment Area

	Percentage of Area in Tanguisson Conformity Area
Alternative 2	29.3%

Table I.3-250: Construction Emissions – Main Cantonment / Tanguisson Area

Alternative	Total Annual Emissions (TPY)	Conformity SO_2
Alternative 2	2011	1.88
	2012	3.05
	2013	3.90
	2014	3.90
	2015	2.90
	2016	1.35

Note:
Percentages are applied to Table I.3-138 to derive the results displayed above.

Table I.3-251: Construction Equipment Emissions – Waterfront / Piti

Equipment Type/Activity	Number of Units	Weeks	Usage Factor[1] %	Hours	Horse power[2] (hp)	Load Factor[2] (%)	Emission Factor[2] (grams/hp-hour) SO_2	Emission Rate (tons/year) SO_2
Construction								
Asphalt paver, 130 HP	1	0.6	50	11.0	130	59	1.68	0.002
Compressor, 250 cfm	1	1.7	40	27.2	83	43	1.76	0.002
Concrete pump, small	1	0.6	50	11.0	53	43	1.74	0.000
Crane, 90-ton	1	0.7	16	4.5	231	43	1.63	0.001
Crane, SP, 12 ton	1	0.7	16	4.2	231	43	1.63	0.001
Dozer, 300 HP	1	0.6	40	8.8	300	59	1.65	0.003
Front end loader, 1.5 cy, crl	1	1.1	40	17.6	93	21	2.03	0.001
Gas engine vibrator	1	1.1	20	8.8	6	55	0.22	0.000
Gas welding machine	1	0.5	40	8.0	17	68	0.21	0.000
Grader, 30,000 lb	1	1.3	40	20.8	204	59	1.64	0.005
Pneumatic wheel roller	1	0.6	50	11.0	92	59	1.71	0.001
Roller, vibratory	1	0.6	20	4.4	92	59	1.71	0.000
Rollers, steel wheel	1	1.1	20	8.8	92	59	1.71	0.001
Total Annual Construction Emissions Between 2011 – 2014								0.016

Source: 1. FHWA Roadway Construction Noise Model User's Guide, Jan. 2006.
2. Nonroad model worksheet, USEPA, Dec. 31, 2008.

Table I.3-252: Van & Truck Emissions - Waterfront / Piti

Commuter Van (LDGT)				*Emission Factor[1] (lb/hr)*	*Emission Rate (tons/year)*
Stage	*Total VMT*	*Speed in miles/hour*	*Hours*	*SO_2*	*SO_2*
Construction	1889	25	19	0.001	0.000
Trucks (HDDV)				Emission Factor[1] (lb/hr)	Emission Rate (tons/year)
Construction	10832	25	108	0.243	0.013
Total Annual Motor Vehicle Emissions, Between 2011-2016					0.013

Source: 1. Mobile 6.2 Emission Factors.

Table I.3-253: Total Construction Emissions - Waterfront / Piti

	Pollutant
	SO_2
Total Annual Emissions (TPY)	0.03

Volume 4: Marine Corps Relocation – Aircraft Carrier Berthing

Table I.3-254: Marine Corps Total Construction Emissions – Aircraft Carrier Berthing/ Alternative 1 / Apra Harbor

	Pollutant
	SO_2
Total Annual Emissions Excluding Dredging (TPY)	0.35
Total Annual Emissions for Dredging (TPY)	0.14

Note:
Refer to Table I.3-167.

Volume 6: Marine Corps Relocation – Related Actions/ Utilities Projects

Table I.3-255: Utility Total Construction Emissions - Power Basic Alternative 1 / Tanguisson

	Pollutant
	SO_2
Total Annual Emissions (TPY)	0.14

Note:
Refer to Table I.3-185.

Table I.3-256: Percentage Within Nonattainment Areas – Potable Basic Water Alternative 1 / Piti &Tanguisson

Percentage
Piti & Tanguisson
10%

Table I.3-257: Utility Total Construction Emissions – Potable Basic Water Alternative 1 / Piti &Tanguisson

Construction Activity	Pollutant
	SO_2
Total Annual Emissions (TPY)	0.20

Note:
Percentages are applied to Table I.3-188 to get the results displayed above.

Table I.3-258: Utility Total Construction Emissions - Wastewater Basic Alternative 1a and 1b / Tanguisson

Construction Activity	Pollutant
	SO_2
Total Annual Emissions (TPY)	0.00

Note:
Refer to Table I.3-194.

3.6.3 Compliance Analysis

The net increase in SO_2 emissions with potential to emit from the proposed action within the two SO_2 nonattainment areas was predicted in the same way as described in previous sections. The estimates of SO_2 emissions were performed for those operational and construction activities with potential to occur within those two nonattainment areas. Tables I.3-271 through I.3-274 summarized the annual emissions from construction and operations with potential to occur within the nonattainment areas during the implementation of the proposed action. As shown in Tables I.3-272 and I.3-274, the total combined construction and operation emissions are well below the applicable *de minimis* level of 100 TPY SO_2 emissions in each nonattainment area on an annual basis. Therefore, if the total expected direct and indirect emissions of SO_2 are below 100 TPY, no formal conformity determination is required and no significant air quality impact would result from the implementation of the proposed action.

Table I.3-259: Preferred Alternatives SO2 Emissions – Tanguisson (TPY)

Construction Activities	Year	SO_2
Main Cantonment, Alternative 2	2011	1.88
	2012	3.05
	2013	3.90
	2014	3.90
	2015	2.90
	2016	1.35
Power Basic Alternative 1	2011-2014	0.14
Wastewater Basic Alternative 1a and 1b	2011-2014	0.00
Potable Basic Water Alternative 1	2011-2014	0.20
Operational Activities		
Aircraft Training	2015 and on	0.1

Construction Activities	Year	SO_2
On-base Vehicles	2015 and on	8.2

Table I.3-260: Preferred Alternatives Total Annual SO2 Emissions – Tanguisson (TPY)

Year	*SO_2*
2011	2.22
2012	3.39
2013	4.24
2014	4.24
2015	11.20
2016	9.65
2017 and on	8.3
de minimis level	**100**

Table I.3-261: Preferred Alternatives SO2 Emissions – Piti (TPY)

Construction Activities	*Years*	*SO_2*
Waterfront Training	2011-2014	0.03
Aircraft Carrier Berthing Alternative 1	2011-2014	0.35
Aircraft Carrier Berthing Alternative 1 (Dredging)	2015 -2016	0.14
Potable Basic Water Alternative 1	2011-2014	0.20
Operational Activities		
Aircraft Carrier Berthing	2015 and on	0.50
Aircraft Training at Orote	2015 and on	0.06
On-base Vehicles	2015 and on	0.34

Table I.3-262: Preferred Alternatives Total Annual SO2 Emissions – Piti (TPY)

Year	*SO_2*
2011	0.58
2012	0.58
2013	0.58
2014	0.58
2015	1.04
2016	1.04
2017 and on	0.90
de minimis level	**100**

3.7 GREENHOUSE GASES AND GLOBAL WARMING

Greenhouse gases (GHGs) are compounds that contribute to the greenhouse effect. The greenhouse effect is a natural phenomenon where these gases trap heat within the surface-troposphere (lowest portion of the earth's atmosphere) system, causing heating (radiative forcing) at the surface of the earth. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities (USEPA 2009a). The climate change associated with this global warming is predicted to produce negative environmental, economic, and social consequences across the globe. The average global temperature since 1900 has risen by 1.5°F and is predicted to increase up to another 11.5°F by 2100 (Karl et al. 2009).

In 2007, the U.S. generated about 7,150 Tg CO_2 Eq (USEPA 2009c). This total includes emissions from Guam and Tinian, as after 2002 the United Nations no longer reports energy statistics for Guam separately (Marland et al. 2008) and emissions from Tinian were never reported separately. As the U.S. inventory does not provide a baseline for Guam, using the U.S. baseline condition for a comparison is considered appropriate for current conditions. The 2007 inventory data (USEPA 2009c) shows that CO_2, CH_4, and N_2O contributed from fossil fuel combustion process from mobile and stationary sources include approximately:

- 5,736 teragrams (Tg) (or million metric tons) of CO_2
- 9 Tg CH_4
- 45 Tg N_2O

This section begins by providing the background and regulatory framework for GHGs and then provides a quantitative evaluation of the increase in GHG emissions based on the preferred alternatives and cumulative GHG air quality impacts.

3.7.1 Background and Regulatory Framework

GHGs trap heat in the atmosphere by absorbing infrared radiation. These emissions occur from both natural processes and human activities. The primary long-lived GHGs directly emitted by human activities are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Although CO_2, CH_4, and N_2O occur naturally in the atmosphere, their concentrations have increased by 38, 149, 23 %, respectively, from the preindustrial era (1750) to 2007/2008 (USEPA 2009a).

Federal agencies address emissions of GHGs by reporting and meeting reductions mandated in laws, EOs and policies. The most recent of these are EOs 13514 Federal Leadership in Environmental, Energy, and Economic Performance, of October 5, 2009 and EO 13423 Strengthening Federal Environmental, Energy, and Transportation Management of January 26, 2007.

EO 13514 shifts the way the government operates by: 1) establishing GHGs as the integrating metric for tracking progress in federal sustainability; 2) requiring a deliberative planning process; and 3) linking to budget allocations and OMB scorecards to ensure goal achievement.

The targets for reducing GHG emissions discussed in EO 13514 for Scope 1 - direct greenhouse gas emissions from sources that are owned or controlled by a federal agency - and Scope 2 - direct greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by a federal agency - have been set for DoD at a 34% reduction of GHG from the 2008 baseline by 2020. Scope 3 targets - greenhouse gas emissions from sources not owned or directly controlled by a Federal agency but related to agency activities such as vendor supply chains, delivery services, and employee travel and commuting – have been proposed to set for DOD at a 13.5% reduction. The EO 13514 Strategic Sustainability Performance Plan (SSPP) was submitted to CEQ on June 2, 2010 and contains a guide for meeting these goals.

GHGs for the proposed action will be reduced by incorporating the Leadership in Energy and Environmental Design (LEED) program into the proposed action. LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO_2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. There are four levels of certification in LEEDS and building constructed for actions associated with this EIS will aim to attain a rating of LEEDS silver. Low impact land development (LID) will also be used during design in order to save water and energy to meet the targets established under EO 13514.

EO 13423 established a policy that Federal agencies conduct their environmental, transportation, and energy-related activities in support of their respective missions in an environmentally economic way. It included a goal of improving energy efficiency and reducing GHG emissions of the agency, through reduction of energy intensity by 3 % annually through the end of fiscal year 2015, or 30 % by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003.

CEQ Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions (CEQ, 2010) states that "*if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO_2-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.*" These recommendations are consistent with the Mandatory Reporting of Greenhouse Gases rule (40 CFR Parts 86, 87, 89 et al.) effective December 29, 2009 applies to fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric TPY of GHG emissions are required to submit annual reports to USEPA. The Mandatory Reporting rule for the proposed action applies to DoD stationary sources. GHG emissions for GPA Power and Layon Landfill sources would require separate annual reports to USEPA. Construction emissions are relatively short in nature, and as such, are not listed in these rules, which were designed primarily for tracking and regulating stationary sources. The rule provides accurate and timely data to inform future climate change policies and programs, but does not require control of GHGs. Monitoring begins January 1, 2010 and the first electronic reports are due March 31, 2011.

On May 13, 2010 the USEPA finalized the l Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule to address GHG under stationary sources. This final rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain PSD and Title V permits. The USEPA is phasing in the CAA permitting requirements for GHGs in two initial steps. The first step will occur from January 2, 2011 –June 30, 2011 and covers only sources currently subject to the PSD permitting program (i.e., those that are newly-constructed or modified in a way that significantly increases emissions of a pollutant other than GHGs) that would be subject to permitting requirements for their GHG emissions under PSD. For these projects, only GHG increases of 75,000 TPY or more of total GHG, on a CO_2eq basis, would need to determine the Best Available Control Technology (BACT) for their GHG emissions. Similarly for the operating permit program, only sources currently subject to the program (i.e., newly constructed or existing major sources for a pollutant other than GHGs) would be subject to Title V requirements for GHG. During the first step, no sources would be subject to CAA permitting requirements due solely to

GHG emissions. Step 2 will occur from July 1, 2011 to June 30, 2013 and build on Step 1. In this phase, PSD permitting requirements will cover for the first time new construction projects that emit GHG emissions of at least 100,000 TPY, even if they do not exceed the permitting thresholds for any other pollutant. Modifications at existing facilities that increase GHG emissions by at least 75,000 TPY will be subject to permitting requirements, even if they do not significantly increase emissions of any other pollutant. In Step 2, operating permit requirements will, for the first time, apply to sources based on their GHG emissions even if they would not apply based on emissions of any other pollutant. Facilities that emit at least 100,000 TPY CO_2eq will be subject to Title V permitting requirements. The emissions with potential to result from the proposed action at affected existing stationary sources discussed in this EIS are below the permitting thresholds covered by the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule, as shown in Table 7.2-5 of Volume 6.

This analysis provided here follows the recent Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas issued by the Council of Environmental Quality (CEQ) (CEQ 2010).

3.7.2 Proposed Action and Cumulative GHG Impacts

The potential effects of proposed GHG emissions are by nature global and cumulative impacts, as individual sources of GHG emissions are not large enough to have an appreciable effect on climate change. In keeping with CEQ guidance, the focus of the cumulative air quality GHG analysis is on GHG emissions that are affected by the proposed action and its significance on climate change as compared to the no-action alternative. The impact of proposed GHG emissions as they pertain to climate change is discussed in the context of the combined impacts as compared to the total amount of GHG emissions that the U.S. produces.

To estimate total GHG emissions, each GHG is assigned a global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO_2, which has a value of one. For example, CH_4 has a GWP of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis (Intergovernmental Panel on Climate Change [IPCC] 2007). To simplify GHG analyses, total GHG emissions from a source are often expressed as CO_2 equivalents (CO2 Eq). The CO_2 Eq is calculated by multiplying the emissions of each GHG by its GWP and adding the results together to produce a single, combined emission rate representing all GHGs. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in much higher quantities, so that it is the overwhelming contributor to CO_2 Eq from both natural processes and human activities. GWP-weighted emissions are presented in terms of equivalent emissions of CO_2, using units of teragrams (1 million metric tons or 1 billion kilograms) of carbon dioxide equivalents (Tg CO_2 Eq).

The total GHG emissions in terms of CO_2 Eq for the preferred alternatives were predicted for the following three source categories:

- Mobile fossil fuel combustion sources including construction equipment
- Stationary fossil fuel combustion sources
- Solid waste landfill

Among the primary long-lived GHGs directly emitted by human activities, only CH_4 and N_2O have potential to be produced from fossil fuel combustion sources (USEPA 2009c). CH_4 could also be produced during landfill operations in addition to production from combustion sources.

Although the USEPA final rule on Mandatory Reporting of Greenhouse Gases (October 30, 2009) provides various methodologies to estimate CO_2 equivalencies based on fuel test and consumption data, this rule is essentially designed for specific stationary facility reporting purposes and cannot be directly implemented in this PFEIS to addressing various source categories. Most of the USEPA tools that are widely used for NEPA study purposes (e.g., AP-42, NONROAD [USEPA 2008] and Mobile6 emissions factor models [USEPA 2003]) do not provide emission factors for CO_2 Eq other than for CO_2. Therefore, given the lack of regulatory tools to provide reasonable estimates of CO_2 Eq, this report utilizes the inventory ratios among CO_2, CH_4 and N_2O summarized in the most recent USEPA inventory report (USEPA 2009c) and provided in the introduction to this section as the basis for approximating and prorating CH_4 and N_2O emission levels.

The ratios among CO_2, CH_4 and N_2O based on above inventory levels were used to predict CH_4 and N_2O equivalencies from mobile and stationary combustion sources as follows:

$$CH_4 = (\text{tons per year [TPY] of } CO_2) * (9 / 5{,}736) = 0.16\% \text{ TPY of } CO_{2.}$$

$$N_2O = (\text{TPY of } CO_2) * (45/ 5{,}736) = 0.78\% \text{ TPY of } CO_{2.}$$

Based on these ratios, the GHG contribution from CH_4 and N_2O is less than 1% of the total CO_2 equivalency for fossil fuel combustion sources. CH_4 emissions from the landfill were predicted directly using the Landfill Gas Emissions model (LandGEM) (USEPA 2005).

Table I.3-263 provides the CO_2 Eq from combustions sources and the landfill under the preferred alternatives (see Chapter 3.2.2). The predicted construction CO_2 Eq emissions range from about 18,078 TPY in 2011 to 55,792 to 60,610 TPY from 2017 on. The upper end of the range would primarily be due to vehicular emissions.

Table I.3-263: Preferred Alternatives CO2 Emissions Equivalents (TPY)

	Combustion	*Landfill*		*Total*
Year	*CO_2*	*CO_2*	*CH_4*	*CO_2 Eq**
2011	16490.5	164.4	59.9	18077.7
2012	20317.8	571.8	208.4	25469.2
2013	31464.8	1194.8	435.5	42119.7
2014	18516.7	1903.0	13.9	20896.8
2015	58407.4	2900.0	21.1	62334.6
2016	53624.1	3664.9	26.7	58385.9
2017 and on	52032.2	4055.3 – 8235.0	29.6 – 60.0	57229.4 – 62047.5
** CO_2 Eq= Combustion CO_2 (1+0.01) +Landfill CO_2 + CH_4 (GWP of 21)*				

The different alternatives within Final EIS are unlikely to vary substantially in the quantity of CO_2 emissions from stationary and mobile combustion sources and landfill locations. For example, the same amount of construction activities would occur regardless of the different locations (alternatives), resulting in essentially the same amount of GHG emissions. Therefore, the GHG emissions for the different alternatives would be similar to those of the preferred alternatives.

In 2007, the U.S. generated about 7,150 Tg (million metric tons) CO_2 Eq (USEPA 2009c). This total includes emissions from Guam and Tinian, as after 2002 the United Nations no longer reports energy statistics for Guam separately (Marland et al. 2008) and emissions from Tinian were never reported separately. As the U.S. inventory does not provide a baseline for Guam, using the U.S. baseline condition for a comparison is considered appropriate for current conditions. The total maximum quantity of GHG emissions from the preferred alternatives comprises less than 0.00085% of the annual U.S. emissions.

The change in climate conditions caused by GHG resulting from the burning of fossil fuels from both stationary and mobile sources and landfilling is a global effect, and requires that the emissions be assessed on a global scale. Therefore, the disclosure of localized incremental has limited or no weight in addressing climate change. The proposed action mainly involves the relocation of the military operations that are already occurring in the West Pacific region; therefore, fossil fuel burning activities in the West Pacific region are unlikely to change significantly. Consequently, overall global GHG emissions are likely to remain near the current level on a regional or global scale under the proposed condition, resulting in an insignificant cumulative impact to global climate change. No specific GHG emission mitigation measures are warranted.

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Attachment A
Off Base Roadway Project Impact Analysis Support Data

Attachment B
Mobile Source Air Toxics Impact Analysis Support Data

Attachment A

1) Roadway Construction Emissions Worksheet

2) Sample CAL3QHC Input and Output Files (Site 1)

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2) hp/hr	Average Equipment Usage of HP (2) hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	Construction Activity Duration (4) hrs/month	Diesel Pollutant Emission Factors (3) CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
PTG8 - FDR													
WL	1	Diesel	197	116	116	11/3/2012	8/2/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/3/2012	8/2/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/3/2012	8/2/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/3/2012	8/2/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	11/3/2012	8/2/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/3/2012	8/2/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/3/2012	8/2/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/3/2012	8/2/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/3/2012	8/2/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/3/2012	8/2/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG9 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	10/1/2011	4/2/2012	7	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/1/2011	4/2/2012	7	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/1/2011	4/2/2012	7	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 10 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	10/1/2011	4/2/2012	7	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/1/2011	4/2/2012	7	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/1/2011	4/2/2012	7	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 22 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	10/1/2011	4/2/2012	7	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/1/2011	4/2/2012	7	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/1/2011	4/2/2012	7	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/1/2011	4/2/2012	7	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 22A - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	10/4/2012	9/3/2013	12	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/4/2012	9/3/2013	12	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/4/2012	9/3/2013	12	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/4/2012	9/3/2013	12	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/4/2012	9/3/2013	12	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/4/2012	9/3/2013	12	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/4/2012	9/3/2013	12	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/4/2012	9/3/2013	12	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/4/2012	9/3/2013	12	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/4/2012	9/3/2013	12	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 23 - Overlay													
Cold Planer	1	Diesel	545	322	322	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Gasoline	147	87	173	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	1	Electric	97	57	57	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Electric	130	77	77	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Construction Equipment Total	**5**												
PTG 38 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	10/2/2011	12/6/2011	3	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/2/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/2/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/2/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/2/2011	12/6/2011	3	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/2/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/2/2011	12/6/2011	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/2/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/2/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/2/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 39 - Widening													
Wheel Loader	1	Diesel	197	116	116	10/5/2011	12/7/2011	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/5/2011	12/7/2011	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/5/2011	12/7/2011	3	172	1.48	2.62	0.40	0.39
Reclaimer	2	Diesel	540	319	637	10/5/2011	12/7/2011	3	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	10/5/2011	12/7/2011	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/5/2011	12/7/2011	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	4.17	3.14	0.73	0.71

Guam Haul Road
Construction Emission Analysis
North- Equipment

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors [3] CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PTG 41 - FDR & Widening													
Wheel Loader	1	Diesel	197	116	116	10/5/2011	12/6/2011	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/5/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/5/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Reclaimer	2	Diesel	540	319	637	10/5/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/5/2011	12/6/2011	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PTG 42 - Widening													
Wheel Loader	1	Diesel	197	116	116	10/5/2011	12/6/2011	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/5/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/5/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Reclaimer	2	Diesel	540	319	637	10/5/2011	12/6/2011	3	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/5/2011	12/6/2011	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PTG 117 - FDR & Widening													
Wheel Loader	1	Diesel	197	116	116	10/28/2015	12/30/2015	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/28/2015	12/30/2015	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/28/2015	12/30/2015	3	172	1.48	2.62	0.40	0.39
Reclaimer	2	Diesel	540	319	637	10/28/2015	12/30/2015	3	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	10/28/2015	12/30/2015	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/28/2015	12/30/2015	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PTG 57 - FDR & Widening													
Wheel Loader	1	Diesel	197	116	116	10/4/2013	5/6/2015	20	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/4/2013	5/6/2015	20	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/4/2013	5/6/2015	20	172	1.48	2.62	0.40	0.39
Reclaimer	2	Diesel	540	319	637	10/4/2013	5/6/2015	20	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	10/4/2013	5/6/2015	20	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/4/2013	5/6/2015	20	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	4.17	3.14	0.73	0.71

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	Construction Activity Duration (4) hrs/month	Diesel Pollutant Emission Factors [3] CO g/hp-hr	Diesel Pollutant Emission Factors [3] NOx g/hp-hr	Diesel Pollutant Emission Factors [3] PM10 g/hp-hr	Diesel Pollutant Emission Factors [3] $PM_{2.5}$ g/hp-hr
PB1 - Pavement Strengthening													
WL	1	Diesel	197	116	116	11/8/2010	6/2/2011	8	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/8/2010	6/2/2011	8	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/8/2010	6/2/2011	8	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/8/2010	6/2/2011	8	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	11/8/2010	6/2/2011	8	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/8/2010	6/2/2011	8	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG2 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	11/8/2010	6/2/2011	8	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	11/8/2010	6/2/2011	8	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/8/2010	6/2/2011	8	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	11/8/2010	6/2/2011	8	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	11/8/2010	6/2/2011	8	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/8/2010	6/2/2011	8	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 3 - FDR & Widening													
Wheel Loader	0	Diesel	197	116	0	12/1/2010	10/31/2011	11	172	1.32	2.62	0.40	0.39
Scraper	0	Diesel	500	295	0	12/1/2010	10/31/2011	11	172	1.48	2.62	0.40	0.39
Reclaimer	0	Diesel	540	319	0	12/1/2010	10/31/2011	11	172	1.48	2.62	0.40	0.39
Grader	0	Diesel	540	319	0	12/1/2010	10/31/2011	11	172	1.48	2.62	0.40	0.39
Roller	0	Diesel	147	87	0	12/1/2010	10/31/2011	11	172	1.53	2.62	0.56	0.54
Back hoe	0	Diesel	97	57	0	12/1/2010	10/31/2011	11	172	4.17	3.14	0.73	0.71
Paving Machine	0	Diesel	130	77	0	12/1/2010	10/31/2011	11	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	12/1/2010	10/31/2011	11	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	12/1/2010	10/31/2011	11	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	12/1/2010	10/31/2011	11	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**0**												
PTG 6 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	8/5/2012	5/1/2013	10	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	8/5/2012	5/1/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	8/5/2012	5/1/2013	10	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	8/5/2012	5/1/2013	10	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	8/5/2012	5/1/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	8/5/2012	5/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	8/5/2012	5/1/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	8/5/2012	5/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/5/2012	5/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/5/2012	5/1/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 7 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	9/2/2012	6/3/2013	10	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PB17 - Overlay													
Cold Planer	1	Diesel	545	322	322	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Gasoline	147	87	173	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	1	Electric	97	57	57	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Electric	130	77	77	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Construction Equipment Total	**5**												
PTG 11 - FDR													
Wheel Loader	1	Diesel	197	116	116	10/2/2010	7/4/2011	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/2/2010	7/4/2011	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	10/2/2010	7/4/2011	10	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/2/2010	7/4/2011	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG 12 - FDR													
Wheel Loader	1	Diesel	197	116	116	10/2/2010	7/4/2011	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/2/2010	7/4/2011	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	10/2/2010	7/4/2011	10	172	1.53	2.62	0.56	0.54
Wheel Loader	1	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71

Guam Haul Road
Construction Emission Analysis
Central 1- Equipment

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors [3] CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG 13 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	1	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG 14 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	1	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG 15 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	1	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PTG 16 - Widening & Overlay													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Cold Planer	1	Diesel	545	322	322	9/1/2012	6/1/2013	10	172	1.48	2.62	0.40	0.39
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Roller	4	Diesel	147	87	347	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	3	Diesel	97	57	172	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**15**												
PB18 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/3/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	9/1/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PB19 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/3/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	9/1/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PB20 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/3/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	9/1/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												

Guam Haul Road
Construction Emission Analysis
Central 1- Equipment

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2) hp/hr	Average Equipment Usage of HP (2) hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors (3) CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
PB21 - Overlay													
Cold Planer	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	1.32	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	1	Diesel	97	57	57	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Roller	0	Diesel	147	87	0	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	0	Diesel	97	57	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	0	Diesel	130	77	0	9/1/2012	6/1/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**5**												
PB 28 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	10/1/2013	12/3/2014	15	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/1/2013	12/3/2014	15	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/1/2013	12/3/2014	15	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/1/2013	12/3/2014	15	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/1/2013	12/3/2014	15	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/1/2013	12/3/2014	15	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/1/2013	12/3/2014	15	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/1/2013	12/3/2014	15	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2013	12/3/2014	15	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2013	12/3/2014	15	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PB 29 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	8/7/2014	5/6/2015	10	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	8/7/2014	5/6/2015	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	8/7/2014	5/6/2015	10	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	8/7/2014	5/6/2015	10	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	8/7/2014	5/6/2015	10	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	8/7/2014	5/6/2015	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	8/7/2014	5/6/2015	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	8/7/2014	5/6/2015	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/7/2014	5/6/2015	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/7/2014	5/6/2015	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PB30 -Overlay													
Cold Planer	1	Diesel	545	322	322	8/2/2013	5/1/2014	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	8/2/2013	5/1/2014	10	172	1.53	2.62	0.56	0.54
Back hoe	1	Diesel	97	57	57	8/2/2013	5/1/2014	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	8/2/2013	5/1/2014	10	172	1.53	2.62	0.56	0.54
Roller	0	Diesel	147	87	0	8/2/2013	5/1/2014	10	172	1.53	2.62	0.56	0.54
Back hoe	0	Diesel	97	57	0	8/2/2013	5/1/2014	10	172	4.17	3.14	0.73	0.71
Paving Machine	0	Diesel	130	77	0	8/2/2013	5/1/2014	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	8/2/2013	5/1/2014	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/2/2013	5/1/2014	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/2/2013	5/1/2014	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**5**												
PB31 - FDR													
Wheel Loader	1	Diesel	197	116	116	11/1/2012	5/2/2014	19	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/1/2012	5/2/2014	19	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/1/2012	5/2/2014	19	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/1/2012	5/2/2014	19	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	11/1/2012	5/2/2014	19	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/1/2012	5/2/2014	19	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/1/2012	5/2/2014	19	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/1/2012	5/2/2014	19	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/1/2012	5/2/2014	19	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/1/2012	5/2/2014	19	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PB 33 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	8/1/2013	8/2/2014	13	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	8/1/2013	8/2/2014	13	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	8/1/2013	8/2/2014	13	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	8/1/2013	8/2/2014	13	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	8/1/2013	8/2/2014	13	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	8/1/2013	8/2/2014	13	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	8/1/2013	8/2/2014	13	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	8/1/2013	8/2/2014	13	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/1/2013	8/2/2014	13	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	8/1/2013	8/2/2014	13	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2) hp/hr	Average Equipment Usage of HP (2) hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors (3) CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
PTG36 - Widening													
WL	1	Diesel	197	116	116	10/1/2011	9/10/2013	24	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	10/1/2011	9/10/2013	24	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	10/1/2011	9/10/2013	24	172	1.48	2.62	0.40	0.39
Roller	1	Diesel	147	87	87	10/1/2011	9/10/2013	24	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	10/1/2011	9/10/2013	24	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	10/1/2011	9/10/2013	24	172	1.53	2.62	0.56	0.54
Paving Machine	0	Diesel	130	77	0	10/1/2011	9/10/2013	24	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/1/2011	9/10/2013	24	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	9/10/2013	24	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/1/2011	9/10/2013	24	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PTG44 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	11/28/2012	1/30/2013	3	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG46 - FDR & Widening													
Wheel Loader	2	Diesel	197	116	232	11/29/2012	1/30/2013	3	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	11/29/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	11/29/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	11/29/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG 47 - Widening													
WL	1	Diesel	197	116	116	11/28/2012	1/30/2013	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Roller	1	Diesel	147	87	87	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Paving Machine	2	Diesel	130	77	153	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Paving Machine	0	Diesel	130	77	0	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PB48 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	11/28/2013	1/29/2014	3	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	11/28/2013	1/29/2014	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/28/2013	1/29/2014	3	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	11/28/2013	1/29/2014	3	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	11/28/2013	1/29/2014	3	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/28/2013	1/29/2014	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
Cold Planer	0	Diesel	545	322	0	9/1/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	0	Gasoline	147	87	0	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	0	Electric	97	57	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	0	Electric	130	77	0	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Construction Equipment Total	**0**												
PB49 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	10/29/2014	12/31/2014	3	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/29/2014	12/31/2014	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/29/2014	12/31/2014	3	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/29/2014	12/31/2014	3	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/29/2014	12/31/2014	3	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/29/2014	12/31/2014	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PB49A - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	10/29/2014	12/31/2014	3	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	10/29/2014	12/31/2014	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	10/29/2014	12/31/2014	3	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	10/29/2014	12/31/2014	3	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	10/29/2014	12/31/2014	3	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	10/29/2014	12/31/2014	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2) hp/hr	Average Equipment Usage of HP (2) hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors (3) CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PB63 - FDR													
Wheel Loader	1	Diesel	197	116	116	11/28/2012	1/30/2013	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/28/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PB74 - FDR													
Wheel Loader	1	Diesel	197	116	116	11/28/2013	1/29/2014	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/28/2013	1/29/2014	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/28/2013	1/29/2014	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/28/2013	1/29/2014	3	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	11/28/2013	1/29/2014	3	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/28/2013	1/29/2014	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PB113 - Widening													
Wheel Loader	1	Diesel	197	116	116	9/28/2013	11/29/2013	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/28/2013	11/29/2013	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/28/2013	11/29/2013	3	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	9/28/2013	11/29/2013	3	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	9/28/2013	11/29/2013	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/28/2013	11/29/2013	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												
PB124 - Widening													
Wheel Loader	1	Diesel	197	116	116	2/28/2013	1/30/2015	24	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	2/28/2013	1/30/2015	24	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	2/28/2013	1/30/2015	24	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	2/28/2013	1/30/2015	24	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	2/28/2013	1/30/2015	24	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	2/28/2013	1/30/2015	24	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	2/28/2013	1/30/2015	24	172	4.17	3.14	0.73	0.71
Paving Machine	0	Diesel	130	77	0	2/28/2013	1/30/2015	24	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	2/28/2013	1/30/2015	24	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	2/28/2013	1/30/2015	24	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**8**												

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2]	Average Equipment Usage of HP [2]	Total Utilized Equipment HP (all units)	Start Date	End Date	Construction Activity Duration		Diesel Pollutant Emission Factors [3]			
			hp/hr	hrs	hp/hr			Months	(4) hrs/month	CO g/hp-hr	NOx g/hp-hr	PM10 g/hp-hr	$PM_{2.5}$ g/hp-hr
PTG4 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	1/3/2011	9/28/2011	9	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	1/3/2011	9/28/2011	9	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	1/3/2011	9/28/2011	9	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	1/3/2011	9/28/2011	9	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	1/3/2011	9/28/2011	9	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	1/3/2011	9/28/2011	9	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	1/3/2011	9/28/2011	9	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	1/3/2011	9/28/2011	9	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	1/3/2011	9/28/2011	9	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	1/3/2011	9/28/2011	9	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PTG5 - Widening & FDR													
Wheel Loader	2	Diesel	197	116	232	1/8/2011	10/3/2011	10	172	1.32	2.62	0.40	0.39
Scraper	2	Diesel	500	295	590	1/8/2011	10/3/2011	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	1/8/2011	10/3/2011	10	172	1.48	2.62	0.40	0.39
Grader	2	Diesel	540	319	637	1/8/2011	10/3/2011	10	172	1.48	2.62	0.40	0.39
Roller	4	Diesel	147	87	347	1/8/2011	10/3/2011	10	172	1.53	2.62	0.56	0.54
Back hoe	4	Diesel	97	57	229	1/8/2011	10/3/2011	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	1/8/2011	10/3/2011	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	1/8/2011	10/3/2011	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	1/8/2011	10/3/2011	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	1/8/2011	10/3/2011	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**16**												
PB 24 - FDR													
Wheel Loader	1	Diesel	197	116	116	9/2/2012	6/3/2013	10	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	9/2/2012	6/3/2013	10	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												
PB50 - FDR													
Wheel Loader	1	Diesel	197	116	116	11/29/2012	1/30/2013	3	172	1.32	2.62	0.40	0.39
Scraper	1	Diesel	500	295	295	11/29/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Grader	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	1.48	2.62	0.40	0.39
Roller	2	Diesel	147	87	173	11/29/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Back hoe	2	Diesel	97	57	114	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	1.53	2.62	0.56	0.54
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	4.17	3.14	0.73	0.71
Construction Equipment Total	**9**												

PM 2.5 Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.000	0.032	0.000	0.000	0.000	0.032	0.032
2010	0.000	0.941	0.000	0.000	0.000	0.941	1.725
2011	3.259	3.752	0.284	3.731	0.000	4.036	14.873
2012	3.803	5.487	1.764	0.617	1.741	7.251	20.585
2013	4.138	11.399	2.955	1.010	2.812	14.354	36.466
2014	2.163	7.181	2.304	0.000	0.000	9.484	19.810
2015	1.212	4.108	0.096	0.000	0.000	4.203	6.548
2016	0.000	0.932	0.000	0.000	0.000	0.932	0.932
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum Yearly Value	**4.138**	**11.3989**	**2.955**	**3.731**	**2.8124**	**14.354**	**36.466**
Year	**2013**	**2013**	**2013**	**2011**	**2013**	**2013**	**2013**
Highest month from highest year - 2009-2015	**0.448**	**1.489**	**0.723**	**0.439**	**0.808**	**2.190**	**5.931**
Highest Monthly Value - from all years	**1.295**	**1.489**	**0.723**	**0.439**	**0.808**	**2.190**	**5.931**
Daily	0.06	0.07	0.04	0.02	0.04	0.11	0.30

GUAM
AIR QUALITY CONSTRUCTION ANALYSIS
CO Schedule

CO Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	3.01	0.00	0.00	0.00	3.01	6.02
2011	11.72	13.66	1.08	13.54	0.00	14.75	54.75
2012	12.18	20.95	6.75	2.59	6.92	27.70	77.09
2013	12.95	43.27	11.28	4.15	11.09	54.56	137.31
2014	5.92	22.42	8.81	0.00	0.00	31.23	68.38
2015	3.45	3.98	0.36	0.00	0.00	4.35	12.15
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Yearly Value	**12.95**	**43.27**	**11.28**	**13.54**	**11.09**	**54.56**	**137.31**
Year	**2013.00**	**2013.00**	**2013.00**	**2011.00**	**2013.00**	**2013.00**	**2013.00**
Highest month from highest year - 2009-2015	**1.445**	**5.690**	**2.770**	**1.592**	**3.149**	**8.460**	**22.616**
Highest Monthly Value - from all years	**4.665**	**5.690**	**2.770**	**1.592**	**3.149**	**8.460**	**22.616**
Year highest monthly value occurs	**0.00**	0.28	0.14	0.08	0.16	0.42	1.13

GUAM
AIR QUALITY CONSTRUCTION ANALYSIS
NOx Schedule

NOx Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	0.000	4.702	0.000	0.000	0.000	4.702	9.404
2011	18.250	21.317	1.651	20.920	0.000	22.968	85.107
2012	18.914	32.351	10.328	4.150	10.820	42.679	119.241
2013	20.298	66.928	17.283	6.614	17.297	84.211	212.632
2014	9.428	34.693	13.529	0.000	0.000	48.222	105.872
2015	5.499	6.153	0.555	0.000	0.000	6.708	18.916
2016	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum Yearly Value	**20.298**	**66.9280**	**17.283**	**20.920**	**17.2966**	**84.211**	**212.632**
Year	**2013**	**2013**	**2013**	**2011**	**2013**	**2013**	**2013**
Highest month from highest year - 2009-2015	**2.268**	**8.793**	**4.275**	**2.461**	**4.926**	**13.068**	**35.082**
Highest Monthly Value - from all years	**7.279**	**8.793**	**4.275**	**2.461**	**4.926**	**13.068**	**35.082**
Daily	0.36	0.44	0.21	0.12	0.25	0.65	1.75

GUAM
AIR QUALITY CONSTRUCTION ANALYSIS
PM10 Schedule

PM10 Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.000	0.217	0.000	0.000	0.000	0.217	0.217
2010	0.000	1.875	0.000	0.000	0.000	1.875	2.680
2011	4.516	4.964	0.291	4.984	0.000	5.255	18.700
2012	7.494	6.074	1.809	0.632	1.784	7.883	25.149
2013	8.445	12.749	3.030	1.035	2.883	15.780	42.652
2014	5.545	13.093	2.363	0.000	0.000	15.456	29.372
2015	2.908	17.107	0.098	0.000	0.000	17.206	21.274
2016	0.000	4.775	0.000	0.000	0.000	4.775	4.775
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum Yearly Value	**8.445**	**17.1074**	**3.030**	**4.984**	**2.8825**	**17.206**	**42.652**
Year	**2013**	**2015**	**2013**	**2011**	**2013**	**2015**	**2013**
Highest month from highest year - 2009-2015	**0.881**	**1.655**	**0.742**	**0.588**	**0.828**	**0.311**	**6.632**
Highest Monthly Value - from all years	**1.800**	**2.082**	**0.742**	**0.588**	**0.828**	**2.245**	**6.632**
Daily	0.09	0.10	0.04	0.03	0.04	0.11	0.33

GUAM
AIR QUALITY CONSTRUCTION ANALYSIS
PM 2.5 Schedule

PM25 Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.000	0.032	0.000	0.000	0.000	0.032	0.032
2010	0.000	0.941	0.000	0.000	0.000	0.941	1.725
2011	3.259	3.752	0.284	3.731	0.000	4.036	14.873
2012	3.803	5.487	1.764	0.617	1.741	7.251	20.585
2013	4.138	11.399	2.955	1.010	2.812	14.354	36.466
2014	2.163	7.181	2.304	0.000	0.000	9.484	19.810
2015	1.212	4.108	0.096	0.000	0.000	4.203	6.548
2016	0.000	0.932	0.000	0.000	0.000	0.932	0.932
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum Yearly Value	**4.138**	**11.3989**	**2.955**	**3.731**	**2.8124**	**14.354**	**36.466**
Year	**2013**	**2013**	**2013**	**2011**	**2013**	**2013**	**2013**
Highest month from highest year - 2009-2015	**0.448**	**1.489**	**0.723**	**0.439**	**0.808**	**2.190**	**5.931**
Highest Monthly Value - from all years	**1.295**	**1.489**	**0.723**	**0.439**	**0.808**	**2.190**	**5.931**
Daily	0.06	0.07	0.04	0.02	0.04	0.11	0.30

Guam Haul Road
Equipment Size and Load Factors

Construction Equipment	Equipment Rated HP (2) hp/hr	Average Equipment HP Avg. load factor applied to rated HP hp/hr	Average Daily Load Factor
Back hoe	97	57	0.59
Cold Planer	545	322	0.59
Grader	540	319	0.59
Paving Machine	130	77	0.59
Reclaimer	540	319	0.59
Roller	147	87	0.59
Scraper	500	295	0.59
Wheel Loader	197	116	0.59

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2) hp/hr	Average Equipment Usage of HP (2) hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors (3) CO2 g/hp-hr	SO2 g/hp-hr
PTG8 - FDR											
WL	1	Diesel	197	116	116	11/3/2012	8/2/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/3/2012	8/2/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/3/2012	8/2/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/3/2012	8/2/2013	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/3/2012	8/2/2013	10	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/3/2012	8/2/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/3/2012	8/2/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/3/2012	8/2/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/3/2012	8/2/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/3/2012	8/2/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PTG9 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	10/1/2011	4/2/2012	7	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/1/2011	4/2/2012	7	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/1/2011	4/2/2012	7	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/1/2011	4/2/2012	7	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/1/2011	4/2/2012	7	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/1/2011	4/2/2012	7	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/1/2011	4/2/2012	7	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 10 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	10/1/2011	4/2/2012	7	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/1/2011	4/2/2012	7	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/1/2011	4/2/2012	7	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/1/2011	4/2/2012	7	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/1/2011	4/2/2012	7	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/1/2011	4/2/2012	7	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/1/2011	4/2/2012	7	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 22 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	10/1/2011	4/2/2012	7	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/1/2011	4/2/2012	7	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/1/2011	4/2/2012	7	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/1/2011	4/2/2012	7	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/1/2011	4/2/2012	7	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/1/2011	4/2/2012	7	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/1/2011	4/2/2012	7	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	4/2/2012	7	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 22A - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	10/4/2012	9/3/2013	12	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/4/2012	9/3/2013	12	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/4/2012	9/3/2013	12	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/4/2012	9/3/2013	12	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/4/2012	9/3/2013	12	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/4/2012	9/3/2013	12	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/4/2012	9/3/2013	12	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/4/2012	9/3/2013	12	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/4/2012	9/3/2013	12	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/4/2012	9/3/2013	12	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 23 - Overlay											
Cold Planer	1	Diesel	545	322	322	9/2/2012	6/3/2013	10	172	530.47	1.95
Roller	2	Gasoline	147	87	173	9/2/2012	6/3/2013	10	172	530.41	1.95
Back hoe	1	Electric	97	57	57	9/2/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Electric	130	77	77	9/2/2012	6/3/2013	10	172	530.41	1.95
Construction Equipment Total	**5**										
PTG 38 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	10/2/2011	12/6/2011	3	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/2/2011	12/6/2011	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/2/2011	12/6/2011	3	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/2/2011	12/6/2011	3	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/2/2011	12/6/2011	3	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/2/2011	12/6/2011	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/2/2011	12/6/2011	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/2/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/2/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/2/2011	12/6/2011	3	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 39 - Widening											
Wheel Loader	1	Diesel	197	116	116	10/5/2011	12/7/2011	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/5/2011	12/7/2011	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/5/2011	12/7/2011	3	172	530.47	1.95
Reclaimer	2	Diesel	540	319	637	10/5/2011	12/7/2011	3	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	10/5/2011	12/7/2011	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/5/2011	12/7/2011	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	589.74	2.17

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2)	Average Equipment Usage of HP (2)	Total Utilized Equipment HP (all units)	Start Date	End Date	Construction Activity Duration		Diesel Pollutant Emission Factors (3)	
			hp/hr	hrs	hp/hr			Months	(4) hrs/month	CO2 g/hp-hr	SO2 g/hp-hr
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/7/2011	3	172	589.74	2.17
Construction Equipment Total	**8**										
PTG 41 - FDR & Widening											
Wheel Loader	1	Diesel	197	116	116	10/5/2011	12/6/2011	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/5/2011	12/6/2011	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/5/2011	12/6/2011	3	172	530.47	1.95
Reclaimer	2	Diesel	540	319	637	10/5/2011	12/6/2011	3	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	10/5/2011	12/6/2011	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/5/2011	12/6/2011	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Construction Equipment Total	**8**										
PTG 42 - Widening											
Wheel Loader	1	Diesel	197	116	116	10/5/2011	12/6/2011	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/5/2011	12/6/2011	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/5/2011	12/6/2011	3	172	530.47	1.95
Reclaimer	2	Diesel	540	319	637	10/5/2011	12/6/2011	3	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	10/5/2011	12/6/2011	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/5/2011	12/6/2011	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/5/2011	12/6/2011	3	172	589.74	2.17
Construction Equipment Total	**8**										
PTG 117 - FDR & Widening											
Wheel Loader	1	Diesel	197	116	116	10/28/2015	12/30/2015	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/28/2015	12/30/2015	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/28/2015	12/30/2015	3	172	530.47	1.95
Reclaimer	2	Diesel	540	319	637	10/28/2015	12/30/2015	3	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	10/28/2015	12/30/2015	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/28/2015	12/30/2015	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/28/2015	12/30/2015	3	172	589.74	2.17
Construction Equipment Total	**8**										
PTG 57 - FDR & Widening											
Wheel Loader	1	Diesel	197	116	116	10/4/2013	5/6/2015	20	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/4/2013	5/6/2015	20	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/4/2013	5/6/2015	20	172	530.47	1.95
Reclaimer	2	Diesel	540	319	637	10/4/2013	5/6/2015	20	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	10/4/2013	5/6/2015	20	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/4/2013	5/6/2015	20	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/4/2013	5/6/2015	20	172	589.74	2.17

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	Construction Activity Duration (4) hrs/month	Diesel Pollutant Emission Factors [3] CO2 g/hp-hr	Diesel Pollutant Emission Factors [3] SO2 g/hp-hr
PB1 - Pavement Strengthening											
WL	1	Diesel	197	116	116	11/8/2010	6/2/2011	8	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/8/2010	6/2/2011	8	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/8/2010	6/2/2011	8	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/8/2010	6/2/2011	8	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/8/2010	6/2/2011	8	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/8/2010	6/2/2011	8	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/8/2010	6/2/2011	8	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	589.74	2.17
Construction Equipment Total	**9**										
PTG2 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	11/8/2010	6/2/2011	8	172	530.41	1.95
Scraper	2	Diesel	500	295	590	11/8/2010	6/2/2011	8	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/8/2010	6/2/2011	8	172	530.47	1.95
Grader	2	Diesel	540	319	637	11/8/2010	6/2/2011	8	172	530.47	1.95
Roller	4	Diesel	147	87	347	11/8/2010	6/2/2011	8	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	11/8/2010	6/2/2011	8	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/8/2010	6/2/2011	8	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/8/2010	6/2/2011	8	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 3 - FDR & Widening											
Wheel Loader	0	Diesel	197	116	0	12/1/2010	10/31/2011	11	172	530.41	1.95
Scraper	0	Diesel	500	295	0	12/1/2010	10/31/2011	11	172	530.47	1.95
Reclaimer	0	Diesel	540	319	0	12/1/2010	10/31/2011	11	172	530.47	1.95
Grader	0	Diesel	540	319	0	12/1/2010	10/31/2011	11	172	530.47	1.95
Roller	0	Diesel	147	87	0	12/1/2010	10/31/2011	11	172	530.41	1.95
Back hoe	0	Diesel	97	57	0	12/1/2010	10/31/2011	11	172	589.74	2.17
Paving Machine	0	Diesel	130	77	0	12/1/2010	10/31/2011	11	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	12/1/2010	10/31/2011	11	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	12/1/2010	10/31/2011	11	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	12/1/2010	10/31/2011	11	172	589.74	2.17
Construction Equipment Total	**0**										
PTG 6 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	8/5/2012	5/1/2013	10	172	530.41	1.95
Scraper	2	Diesel	500	295	590	8/5/2012	5/1/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	8/5/2012	5/1/2013	10	172	530.47	1.95
Grader	2	Diesel	540	319	637	8/5/2012	5/1/2013	10	172	530.47	1.95
Roller	4	Diesel	147	87	347	8/5/2012	5/1/2013	10	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	8/5/2012	5/1/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	8/5/2012	5/1/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	8/5/2012	5/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/5/2012	5/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/5/2012	5/1/2013	10	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 7 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	9/2/2012	6/3/2013	10	172	530.41	1.95
Scraper	2	Diesel	500	295	590	9/2/2012	6/3/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	530.47	1.95
Grader	2	Diesel	540	319	637	9/2/2012	6/3/2013	10	172	530.47	1.95
Roller	4	Diesel	147	87	347	9/2/2012	6/3/2013	10	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	9/2/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/2/2012	6/3/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Construction Equipment Total	**16**										
PB17 - Overlay											
Cold Planer	1	Diesel	545	322	322	9/1/2012	6/3/2013	10	172	530.47	1.95
Roller	2	Gasoline	147	87	173	9/2/2012	6/3/2013	10	172	530.41	1.95
Back hoe	1	Electric	97	57	57	9/2/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Electric	130	77	77	9/2/2012	6/3/2013	10	172	530.41	1.95
Construction Equipment Total	**5**										
PTG 11 - FDR											
Wheel Loader	1	Diesel	197	116	116	10/2/2010	7/4/2011	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/2/2010	7/4/2011	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	10/2/2010	7/4/2011	10	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	10/2/2010	7/4/2011	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/2/2010	7/4/2011	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17
Construction Equipment Total	**9**										
PTG 12 - FDR											
Wheel Loader	1	Diesel	197	116	116	10/2/2010	7/4/2011	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/2/2010	7/4/2011	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/2/2010	7/4/2011	10	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	10/2/2010	7/4/2011	10	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	10/2/2010	7/4/2011	10	172	530.41	1.95
Wheel Loader	1	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17

Guam Haul Road
Construction Emission Analysis
Central1 - Equipment

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	Construction Activity Duration (4) hrs/month	Diesel Pollutant Emission Factors [3] CO_2 g/hp-hr	Diesel Pollutant Emission Factors [3] SO_2 g/hp-hr
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/2/2010	7/4/2011	10	172	589.74	2.17
Construction Equipment Total	**9**										
PTG 13 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	530.41	1.95
Wheel Loader	1	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PTG 14 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	530.41	1.95
Wheel Loader	1	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PTG 15 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	530.41	1.95
Wheel Loader	1	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PTG 16 - Widening & Overlay											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/1/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/1/2013	10	172	530.47	1.95
Cold Planer	1	Diesel	545	322	322	9/1/2012	6/1/2013	10	172	530.47	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/1/2013	10	172	589.74	2.17
Roller	4	Diesel	147	87	347	9/1/2012	6/1/2013	10	172	530.41	1.95
Back hoe	3	Diesel	97	57	172	9/1/2012	6/1/2013	10	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	9/1/2012	6/1/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Construction Equipment Total	**15**										
PB18 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/3/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/3/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	9/1/2012	6/3/2013	10	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/3/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PB19 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/3/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/3/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	9/1/2012	6/3/2013	10	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/3/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PB20 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/1/2012	6/3/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/1/2012	6/3/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/1/2012	6/3/2013	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	9/1/2012	6/3/2013	10	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	9/1/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/3/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/3/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors [3] CO2 g/hp-hr	SO2 g/hp-hr
PB21 - Overlay											
Cold Planer	1	Diesel	197	116	116	9/1/2012	6/1/2013	10	172	530.41	1.95
Roller	2	Diesel	147	87	173	9/1/2012	6/1/2013	10	172	530.41	1.95
Back hoe	1	Diesel	97	57	57	9/1/2012	6/1/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/1/2012	6/1/2013	10	172	530.41	1.95
Roller	0	Diesel	147	87	0	9/1/2012	6/1/2013	10	172	530.41	1.95
Back hoe	0	Diesel	97	57	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Paving Machine	0	Diesel	130	77	0	9/1/2012	6/1/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/1/2012	6/1/2013	10	172	589.74	2.17
Construction Equipment Total	**5**										
PB 28 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	10/1/2013	12/3/2014	15	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/1/2013	12/3/2014	15	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/1/2013	12/3/2014	15	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/1/2013	12/3/2014	15	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/1/2013	12/3/2014	15	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/1/2013	12/3/2014	15	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/1/2013	12/3/2014	15	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/1/2013	12/3/2014	15	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2013	12/3/2014	15	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2013	12/3/2014	15	172	589.74	2.17
Construction Equipment Total	**16**										
PB 29 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	8/7/2014	5/6/2015	10	172	530.41	1.95
Scraper	2	Diesel	500	295	590	8/7/2014	5/6/2015	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	8/7/2014	5/6/2015	10	172	530.47	1.95
Grader	2	Diesel	540	319	637	8/7/2014	5/6/2015	10	172	530.47	1.95
Roller	4	Diesel	147	87	347	8/7/2014	5/6/2015	10	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	8/7/2014	5/6/2015	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	8/7/2014	5/6/2015	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	8/7/2014	5/6/2015	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/7/2014	5/6/2015	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/7/2014	5/6/2015	10	172	589.74	2.17
Construction Equipment Total	**16**										
PB30 -Overlay											
Cold Planer	1	Diesel	545	322	322	8/2/2013	5/1/2014	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	8/2/2013	5/1/2014	10	172	530.41	1.95
Back hoe	1	Diesel	97	57	57	8/2/2013	5/1/2014	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	8/2/2013	5/1/2014	10	172	530.41	1.95
Roller	0	Diesel	147	87	0	8/2/2013	5/1/2014	10	172	530.41	1.95
Back hoe	0	Diesel	97	57	0	8/2/2013	5/1/2014	10	172	589.74	2.17
Paving Machine	0	Diesel	130	77	0	8/2/2013	5/1/2014	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	8/2/2013	5/1/2014	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/2/2013	5/1/2014	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/2/2013	5/1/2014	10	172	589.74	2.17
Construction Equipment Total	**5**										
PB31 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/1/2012	5/2/2014	19	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/1/2012	5/2/2014	19	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/1/2012	5/2/2014	19	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/1/2012	5/2/2014	19	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/1/2012	5/2/2014	19	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/1/2012	5/2/2014	19	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/1/2012	5/2/2014	19	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/1/2012	5/2/2014	19	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/1/2012	5/2/2014	19	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/1/2012	5/2/2014	19	172	589.74	2.17
Construction Equipment Total	**9**										
PB 33 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	8/1/2013	8/2/2014	13	172	530.41	1.95
Scraper	2	Diesel	500	295	590	8/1/2013	8/2/2014	13	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	8/1/2013	8/2/2014	13	172	530.47	1.95
Grader	2	Diesel	540	319	637	8/1/2013	8/2/2014	13	172	530.47	1.95
Roller	4	Diesel	147	87	347	8/1/2013	8/2/2014	13	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	8/1/2013	8/2/2014	13	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	8/1/2013	8/2/2014	13	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	8/1/2013	8/2/2014	13	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/1/2013	8/2/2014	13	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	8/1/2013	8/2/2014	13	172	589.74	2.17
Construction Equipment Total	**16**										

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors [3] CO2 g/hp-hr	SO2 g/hp-hr
PTG36 - Widening											
WL	1	Diesel	197	116	116	10/1/2011	9/10/2013	24	172	530.41	1.95
Scraper	1	Diesel	500	295	295	10/1/2011	9/10/2013	24	172	530.47	1.95
Grader	1	Diesel	540	319	319	10/1/2011	9/10/2013	24	172	530.47	1.95
Roller	1	Diesel	147	87	87	10/1/2011	9/10/2013	24	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	10/1/2011	9/10/2013	24	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	10/1/2011	9/10/2013	24	172	530.41	1.95
Paving Machine	0	Diesel	130	77	0	10/1/2011	9/10/2013	24	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/1/2011	9/10/2013	24	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	9/10/2013	24	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/1/2011	9/10/2013	24	172	589.74	2.17
Construction Equipment Total	**8**										
PTG44 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	11/28/2012	1/30/2013	3	172	530.41	1.95
Scraper	2	Diesel	500	295	590	11/28/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	530.47	1.95
Grader	2	Diesel	540	319	637	11/28/2012	1/30/2013	3	172	530.47	1.95
Roller	4	Diesel	147	87	347	11/28/2012	1/30/2013	3	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	11/28/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/28/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**16**										
PTG46 - FDR & Widening											
Wheel Loader	2	Diesel	197	116	232	11/29/2012	1/30/2013	3	172	530.41	1.95
Scraper	2	Diesel	500	295	590	11/29/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Grader	2	Diesel	540	319	637	11/29/2012	1/30/2013	3	172	530.47	1.95
Roller	4	Diesel	147	87	347	11/29/2012	1/30/2013	3	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	11/29/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**16**										
PTG 47 - Widening											
WL	1	Diesel	197	116	116	11/28/2012	1/30/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/28/2012	1/30/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	530.47	1.95
Roller	1	Diesel	147	87	87	11/28/2012	1/30/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/28/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	2	Diesel	130	77	153	11/28/2012	1/30/2013	3	172	530.41	1.95
Paving Machine	0	Diesel	130	77	0	11/28/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**8**										
PB48 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	11/28/2013	1/29/2014	3	172	530.41	1.95
Scraper	2	Diesel	500	295	590	11/28/2013	1/29/2014	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/28/2013	1/29/2014	3	172	530.47	1.95
Grader	2	Diesel	540	319	637	11/28/2013	1/29/2014	3	172	530.47	1.95
Roller	4	Diesel	147	87	347	11/28/2013	1/29/2014	3	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	11/28/2013	1/29/2014	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/28/2013	1/29/2014	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	589.74	2.17
Construction Equipment Total	**16**										
Cold Planer	0	Diesel	545	322	0	9/1/2012	6/3/2013	10	172	530.47	1.95
Roller	0	Gasoline	147	87	0	9/2/2012	6/3/2013	10	172	530.41	1.95
Back hoe	0	Electric	97	57	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	0	Electric	130	77	0	9/2/2012	6/3/2013	10	172	530.41	1.95
Construction Equipment Total	**0**										
PB49 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	10/29/2014	12/31/2014	3	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/29/2014	12/31/2014	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/29/2014	12/31/2014	3	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/29/2014	12/31/2014	3	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/29/2014	12/31/2014	3	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/29/2014	12/31/2014	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/29/2014	12/31/2014	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	589.74	2.17
Construction Equipment Total	**16**										
PB49A - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	10/29/2014	12/31/2014	3	172	530.41	1.95
Scraper	2	Diesel	500	295	590	10/29/2014	12/31/2014	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	10/29/2014	12/31/2014	3	172	530.47	1.95
Grader	2	Diesel	540	319	637	10/29/2014	12/31/2014	3	172	530.47	1.95
Roller	4	Diesel	147	87	347	10/29/2014	12/31/2014	3	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	10/29/2014	12/31/2014	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	10/29/2014	12/31/2014	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	589.74	2.17

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP (2) hp/hr	Average Equipment Usage of HP (2) hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors (3) CO2 g/hp-hr	SO2 g/hp-hr
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	10/29/2014	12/31/2014	3	172	589.74	2.17
Construction Equipment Total	**16**										
PB63 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/28/2012	1/30/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/28/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/28/2012	1/30/2013	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/28/2012	1/30/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/28/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/28/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**9**										
PB74 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/28/2013	1/29/2014	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/28/2013	1/29/2014	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/28/2013	1/29/2014	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/28/2013	1/29/2014	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/28/2013	1/29/2014	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/28/2013	1/29/2014	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/28/2013	1/29/2014	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/28/2013	1/29/2014	3	172	589.74	2.17
Construction Equipment Total	**9**										
PB113 - Widening											
Wheel Loader	1	Diesel	197	116	116	9/28/2013	11/29/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/28/2013	11/29/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/28/2013	11/29/2013	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	9/28/2013	11/29/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	9/28/2013	11/29/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/28/2013	11/29/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/28/2013	11/29/2013	3	172	589.74	2.17
Construction Equipment Total	**8**										
PB124 - Widening											
Wheel Loader	1	Diesel	197	116	116	2/28/2013	1/30/2015	24	172	530.41	1.95
Scraper	1	Diesel	500	295	295	2/28/2013	1/30/2015	24	172	530.47	1.95
Grader	1	Diesel	540	319	319	2/28/2013	1/30/2015	24	172	530.47	1.95
Roller	2	Diesel	147	87	173	2/28/2013	1/30/2015	24	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	2/28/2013	1/30/2015	24	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	2/28/2013	1/30/2015	24	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	2/28/2013	1/30/2015	24	172	589.74	2.17
Paving Machine	0	Diesel	130	77	0	2/28/2013	1/30/2015	24	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	2/28/2013	1/30/2015	24	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	2/28/2013	1/30/2015	24	172	589.74	2.17
Construction Equipment Total	**8**										

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2]	Average Equipment Usage of HP [2]	Total Utilized Equipment HP (all units)	Start Date	End Date	Construction Activity Duration		Diesel Pollutant Emission Factors [3]	
			hp/hr	hrs	hp/hr			Months	(4) hrs/month	CO_2 g/hp-hr	SO_2 g/hp-hr
PTG4 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	1/3/2011	9/28/2011	9	172	530.41	1.95
Scraper	2	Diesel	500	295	590	1/3/2011	9/28/2011	9	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	1/3/2011	9/28/2011	9	172	530.47	1.95
Grader	2	Diesel	540	319	637	1/3/2011	9/28/2011	9	172	530.47	1.95
Roller	4	Diesel	147	87	347	1/3/2011	9/28/2011	9	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	1/3/2011	9/28/2011	9	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	1/3/2011	9/28/2011	9	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	1/3/2011	9/28/2011	9	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	1/3/2011	9/28/2011	9	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	1/3/2011	9/28/2011	9	172	589.74	2.17
Construction Equipment Total	**16**										
PTG5 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	1/8/2011	10/3/2011	10	172	530.41	1.95
Scraper	2	Diesel	500	295	590	1/8/2011	10/3/2011	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	1/8/2011	10/3/2011	10	172	530.47	1.95
Grader	2	Diesel	540	319	637	1/8/2011	10/3/2011	10	172	530.47	1.95
Roller	4	Diesel	147	87	347	1/8/2011	10/3/2011	10	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	1/8/2011	10/3/2011	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	1/8/2011	10/3/2011	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	1/8/2011	10/3/2011	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	1/8/2011	10/3/2011	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	1/8/2011	10/3/2011	10	172	589.74	2.17
Construction Equipment Total	**16**										
PB 24 - FDR											
Wheel Loader	1	Diesel	197	116	116	9/2/2012	6/3/2013	10	172	530.41	1.95
Scraper	1	Diesel	500	295	295	9/2/2012	6/3/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	530.47	1.95
Grader	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	530.47	1.95
Roller	2	Diesel	147	87	173	9/2/2012	6/3/2013	10	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	9/2/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/2/2012	6/3/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Construction Equipment Total	**9**										
PB50 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/29/2012	1/30/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/29/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/29/2012	1/30/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/29/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**9**										

Guam Haul Road
Construction Emission Analysis
South- Equipment

Construction Equipment	Number of Units	Type of Fuel	Equipment Rated HP [2] hp/hr	Average Equipment Usage of HP [2] hrs	Total Utilized Equipment HP (all units) hp/hr	Start Date	End Date	Construction Activity Duration Months	(4) hrs/month	Diesel Pollutant Emission Factors [3] CO2 g/hp-hr	SO2 g/hp-hr
PB25 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	9/2/2012	6/3/2013	10	172	530.41	1.95
Scraper	2	Diesel	500	295	590	9/2/2012	6/3/2013	10	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/2/2012	6/3/2013	10	172	530.47	1.95
Grader	2	Diesel	540	319	637	9/2/2012	6/3/2013	10	172	530.47	1.95
Roller	4	Diesel	147	87	347	9/2/2012	6/3/2013	10	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	9/2/2012	6/3/2013	10	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/2/2012	6/3/2013	10	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	6/3/2013	10	172	589.74	2.17
Construction Equipment Total	**16**										
PB27 - Widening & FDR											
Wheel Loader	2	Diesel	197	116	232	9/2/2012	5/1/2013	9	172	530.41	1.95
Scraper	2	Diesel	500	295	590	9/2/2012	5/1/2013	9	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	9/2/2012	5/1/2013	9	172	530.47	1.95
Grader	2	Diesel	540	319	637	9/2/2012	5/1/2013	9	172	530.47	1.95
Roller	4	Diesel	147	87	347	9/2/2012	5/1/2013	9	172	530.41	1.95
Back hoe	4	Diesel	97	57	229	9/2/2012	5/1/2013	9	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	9/2/2012	5/1/2013	9	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	9/2/2012	5/1/2013	9	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	5/1/2013	9	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	9/2/2012	5/1/2013	9	172	589.74	2.17
Construction Equipment Total	**16**										
PB52 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/29/2012	1/30/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/29/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/29/2012	1/30/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/29/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**9**										
PB50 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/29/2012	1/30/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/29/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/29/2012	1/30/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/29/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**9**										
PB52 - FDR											
Wheel Loader	1	Diesel	197	116	116	11/29/2012	1/30/2013	3	172	530.41	1.95
Scraper	1	Diesel	500	295	295	11/29/2012	1/30/2013	3	172	530.47	1.95
Reclaimer	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Grader	1	Diesel	540	319	319	11/29/2012	1/30/2013	3	172	530.47	1.95
Roller	2	Diesel	147	87	173	11/29/2012	1/30/2013	3	172	530.41	1.95
Back hoe	2	Diesel	97	57	114	11/29/2012	1/30/2013	3	172	589.74	2.17
Paving Machine	1	Diesel	130	77	77	11/29/2012	1/30/2013	3	172	530.41	1.95
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Wheel Loader	0	Diesel	0	0	0	11/29/2012	1/30/2013	3	172	589.74	2.17
Construction Equipment Total	**9**										
PTG 26 - Overlay											
Cold Planer	1	Diesel	545	322	322	8/3/2012	5/2/2013	10	172	530.47	1.95
Roller	2	Gasoline	147	87	173	8/3/2012	5/2/2013	10	172	530.41	1.95
Back hoe	1	Electric	97	57	57	8/3/2012	5/2/2013	10	172	589.74	2.17
Paving Machine	1	Electric	130	77	77	8/3/2012	5/2/2013	10	172	530.41	1.95
Construction Equipment Total	**5**										

GUAM
AIR QUALITY CONSTRUCTION ANALYSIS
CO2 Schedule

CO_2 Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	944.59	0.00	0.00	0.00	944.59	1889.17
2011	3665.49	4282.16	331.05	4199.75	0.00	4613.20	17091.65
2012	3699.35	6395.81	2072.02	703.38	2042.24	8467.83	23380.63
2013	3881.26	13239.94	3467.70	1166.02	3309.91	16707.64	41772.47
2014	1896.00	6965.54	2714.91	0.00	0.00	9680.45	21256.90
2015	1106.00	1235.22	111.36	0.00	0.00	1346.58	3799.16
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Yearly Value	**3881.26**	**13239.94**	**3467.70**	**4199.75**	**3309.91**	**16707.64**	**41772.47**
Year	**2013.00**	**2013.00**	**2013.00**	**2011.00**	**2013.00**	**2013.00**	**2013.00**
Highest month from highest year - 2009-2015	**422.889**	**1732.440**	**858.186**	**494.088**	**956.734**	**2590.626**	**6880.118**
Highest Monthly Value - from all years	**1462.176**	**1732.440**	**858.186**	**494.088**	**956.734**	**2590.626**	**6880.118**
Year highest monthly value occurs	**0.00**	86.62	42.91	24.70	47.84	129.53	344.01

GUAM
AIR QUALITY CONSTRUCTION ANALYSIS
SO2 Schedule

SO_2 Summary Table

Year	North	Central	Central 2	Apra	South	Central Total	All Locations
2009	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	0.000	3.473	0.000	0.000	0.000	3.473	6.947
2011	13.478	15.746	1.217	15.443	0.000	16.963	62.848
2012	14.094	24.009	7.619	3.241	8.165	31.629	88.757
2013	15.254	49.667	12.751	5.106	12.990	62.419	158.187
2014	6.972	25.613	9.983	0.000	0.000	35.596	78.164
2015	4.067	4.542	0.409	0.000	0.000	4.952	13.970
2016	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum Yearly Value	**15.254**	**49.6674**	**12.751**	**15.443**	**12.9896**	**62.419**	**158.187**
Year	**2013**	**2013**	**2013**	**2011**	**2013**	**2013**	**2013**
Highest month from highest year - 2009-2015	**1.719**	**6.534**	**3.156**	**1.817**	**3.682**	**9.690**	**26.118**
Highest Monthly Value - from all years	**5.377**	**6.534**	**3.156**	**1.817**	**3.682**	**9.690**	**26.118**
Daily	0.27	0.33	0.16	0.09	0.18	0.48	1.31

Guam Haul Road
Equipment Size and Load Factors

Construction Equipment	Equipment Rated HP (2) hp/hr	Average Equipment HP Avg. load factor applied to rated HP hp/hr	Average Daily Load Factor
Back hoe	97	57	0.59
Cold Planer	545	322	0.59
Grader	540	319	0.59
Paving Machine	130	77	0.59
Reclaimer	540	319	0.59
Roller	147	87	0.59
Scraper	500	295	0.59
Wheel Loader	197	116	0.59

CAL3QHC Input and Output Files

Site 1

```
Site 1 Existing AM - 1EXAM.DAT          60.0321.0.0000.000240.30480000    1
1
SE MID S                  650.     1369.       5.0
SE 164 S                  792.     1375.       5.0
SE 82 S                   874.     1379.       5.0
SE CNR                    960.     1383.       5.0
SE 82 E                   947.     1304.       5.0
NE 82 E                  1016.     1306.       5.0
NE CNR                   1022.     1387.       5.0
NE 82 N                  1094.     1391.       5.0
NE 164 N                 1175.     1396.       5.0
NE MID N                 1298.     1405.       5.0
NW MID N                 1318.     1496.       5.0
NW 164 N                 1218.     1493.       5.0
NW 82 N                  1136.     1488.       5.0
NW CNR                   1054.     1503.       5.0
NW 82 W                  1043.     1586.       5.0
NW 164 W                 1057.     1667.       5.0
NW MID W                 1083.     1784.       5.0
SW MID W                 1024.     1777.       5.0
SW 164 W                  994.     1650.       5.0
SW 82 W                   975.     1570.       5.0
SW CNR                    935.     1495.       5.0
SW 82 S                   853.     1474.       5.0
SW 164 S                  771.     1470.       5.0
SW MID S                  631.     1463.       5.0
Site 1 Existing AM                        24  1   0
  1
NB         Rt1 aprch AG     3.  1362.   559.  1390.     72515.5  0.  56   30.
  1
NB         Rt1 th+rt AG   559.  1390.  1016.  1410.     58515.5  0.  56   30.
  2
NB         Rt1 th+rt AG   936.  1407.   568.  1390.      0.  36   3
       167        57       2.0  585  141.4 1679 1 3
  1
NB         Rt1 left  AG   552.  1408.  1013.  1432.     14015.5  0.  32   30.
  2
NB         Rt1 left  AG   934.  1428.   569.  1409.      0.  12   1
       167       145       2.0  140  141.4 1752 1 3
  1
NB         Rt1 departAG  1017.  1410.  1345.  1432.     69015.5  0.  56   30.
  1
NB         Rt1 departAG  1345.  1432.  1632.  1463.     69015.5  0.  44   30.
  1
NB         Rt1 departAG  1632.  1463.  1999.  1510.     69015.5  0.  44   30.
  1
SB         Rt1 aprch AG  1995.  1546.  1680.  1502.    152015.5  0.  44   30.
  1
SB         Rt1 aprch AG  1680.  1502.  1429.  1473.    152015.5  0.  44   30.
  1
SB         Rt1 aprch AG  1429.  1473.  1228.  1465.    152015.5  0.  44   30.
  1
SB         Rt1 th+rt AG  1228.  1465.  1017.  1455.    150015.5  0.  56   30.
  2
SB         Rt1 th+rt AG  1066.  1457.  1221.  1465.      0.  36   3
       167        72       2.0 1500  141.4 1668 1 3
```

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  1
SB        Rt1 left  AG  1165.  1444.  1020.  1436.      2015.5  0.  32   30.
  2
SB        Rt1 left  AG  1068.  1439.  1161.  1444.      0.  12   1
       167       160       2.0   20  141.4 1752 1 3
  1
SB        Rt1 departAG  1017.  1455.     2.  1403.    176015.5  0.  56   30.
  1
EB        Rt28 aprchAG  1191.  2428.  1007.  1603.     39515.5  0.  32   30.
  1
EB        Rt28 aprchAG  1007.  1603.   961.  1435.     39515.5  0.  44   30.
  2
EB        Rt28 aprchAG   979.  1500.  1000.  1578.      0.  24   2
       167       147       2.0  395  141.4 1688 1 3
  1
EB        Rt28 deparAG   987.  1425.   978.  1298.      4515.5  0.  32   30.
  1
WB        Rt28 aprchAG   986.  1300.   997.  1445.      8515.5  0.  44   30.
  2
WB        Rt28 aprchAG   993.  1391.   986.  1306.      0.  24   2
       167       152       2.0   85  141.4 1694 1 3
  1
WB        Rt28 deparAG   999.  1445.  1024.  1615.     23015.5  0.  32   30.
  1
WB        Rt28 deparAG  1024.  1615.  1201.  2425.     23015.5  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

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1                     CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000                PAGE  1

      JOB: Site 1 Existing AM - 1EXAM.DAT                  RUN: Site 1 Existing AM
      DATE: 05/08/2009   TIME: 17:42:17.24


       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =    .0 CM/S       VD =    .0 CM/S       Z0 = 321. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =  1000. M   AMB =    .0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *          LINK COORDINATES (FT)          *   LENGTH  BRG TYPE  VPH    EF      H   W    V/C QUEUE
                              *   X1         Y1         X2         Y2   *    (FT)  (DEG)            (G/MI)  (FT) (FT)        (VEH)
      ------------------------*-----------------------------------------*-----------------------------------------------------------
       1. NB         Rt1 aprch *     3.0     1362.0      559.0     1390.0 *    557.    87. AG     725.  15.5    .0 56.0
       2. NB         Rt1 th+rt *   559.0     1390.0     1016.0     1410.0 *    457.    87. AG     585.  15.5    .0 56.0
       3. NB         Rt1 th+rt *   936.0     1407.0      875.3     1404.2 *     61.   267. AG     388. 100.0    .0 36.0  .18    3.1
       4. NB         Rt1 left  *   552.0     1408.0     1013.0     1432.0 *    462.    87. AG     140.  15.5    .0 32.0
       5. NB         Rt1 left  *   934.0     1428.0      816.0     1421.9 *    118.   267. AG     329. 100.0    .0 12.0  .74    6.0
       6. NB         Rt1 depart*  1017.0     1410.0     1345.0     1432.0 *    329.    86. AG     690.  15.5    .0 56.0
       7. NB         Rt1 depart*  1345.0     1432.0     1632.0     1463.0 *    289.    84. AG     690.  15.5    .0 44.0
       8. NB         Rt1 depart*  1632.0     1463.0     1999.0     1510.0 *    370.    83. AG     690.  15.5    .0 44.0
       9. SB         Rt1 aprch *  1995.0     1546.0     1680.0     1502.0 *    318.   262. AG    1520.  15.5    .0 44.0
      10. SB         Rt1 aprch *  1680.0     1502.0     1429.0     1473.0 *    253.   263. AG    1520.  15.5    .0 44.0
      11. SB         Rt1 aprch *  1429.0     1473.0     1228.0     1465.0 *    201.   268. AG    1520.  15.5    .0 44.0
      12. SB         Rt1 th+rt *  1228.0     1465.0     1017.0     1455.0 *    211.   267. AG    1500.  15.5    .0 56.0
      13. SB         Rt1 th+rt *  1066.0     1457.0     1262.6     1467.1 *    197.    87. AG     491. 100.0    .0 36.0  .55   10.0
      14. SB         Rt1 left  *  1165.0     1444.0     1020.0     1436.0 *    145.   267. AG      20.  15.5    .0 32.0
      15. SB         Rt1 left  *  1068.0     1439.0     1088.5     1440.1 *     21.    87. AG     363. 100.0    .0 12.0  .65    1.0
      16. SB         Rt1 depart*  1017.0     1455.0        2.0     1403.0 *   1016.   267. AG    1760.  15.5    .0 56.0
      17. EB         Rt28 aprch*  1191.0     2428.0     1007.0     1603.0 *    845.   193. AG     395.  15.5    .0 32.0
      18. EB         Rt28 aprch*  1007.0     1603.0      961.0     1435.0 *    174.   195. AG     395.  15.5    .0 44.0
      19. EB         Rt28 aprch*   979.0     1500.0     1131.9     2067.9 *    588.    15. AG     668. 100.0    .0 24.0 1.22   29.9
      20. EB         Rt28 depar*   987.0     1425.0      978.0     1298.0 *    127.   184. AG      45.  15.5    .0 32.0
      21. WB         Rt28 aprch*   986.0     1300.0      997.0     1445.0 *    145.     4. AG      85.  15.5    .0 44.0
      22. WB         Rt28 aprch*   993.0     1391.0      990.1     1356.2 *     35.   185. AG     690. 100.0    .0 24.0  .38    1.8
      23. WB         Rt28 depar*   999.0     1445.0     1024.0     1615.0 *    172.     8. AG     230.  15.5    .0 32.0
      24. WB         Rt28 depar*  1024.0     1615.0     1201.0     2425.0 *    829.    12. AG     230.  15.5    .0 32.0
1
                                                                                                          PAGE  2
      JOB: Site 1 Existing AM - 1EXAM.DAT                  RUN: Site 1 Existing AM
      DATE: 05/08/2009   TIME: 17:42:17.24

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *   CYCLE    RED    CLEARANCE  APPROACH  SATURATION   IDLE   SIGNAL   ARRIVAL
                              *   LENGTH   TIME   LOST TIME    VOL     FLOW RATE   EM FAC   TYPE     RATE
                              *   (SEC)   (SEC)    (SEC)      (VPH)      (VPH)    (gm/hr)
      ------------------------*---------------------------------------------------------------------------
       3. NB         Rt1 th+rt *    167      57       2.0       585        1679    141.40      1        3
       5. NB         Rt1 left  *    167     145       2.0       140        1752    141.40      1        3
      13. SB         Rt1 th+rt *    167      72       2.0      1500        1668    141.40      1        3
      15. SB         Rt1 left  *    167     160       2.0        20        1752    141.40      1        3
      19. EB         Rt28 aprch*    167     147       2.0       395        1688    141.40      1        3
      22. WB         Rt28 aprch*    167     152       2.0        85        1694    141.40      1        3

       RECEPTOR LOCATIONS
       ------------------
                              *            COORDINATES (FT)           *
         RECEPTOR             *       X           Y           Z       *
      ------------------------*---------------------------------------*
       1. SE MID S            *      650.0      1369.0        5.0     *
       2. SE 164 S            *      792.0      1375.0        5.0     *
       3. SE 82 S             *      874.0      1379.0        5.0     *
       4. SE CNR              *      960.0      1383.0        5.0     *
       5. SE 82 E             *      947.0      1304.0        5.0     *
       6. NE 82 E             *     1016.0      1306.0        5.0     *
       7. NE CNR              *     1022.0      1387.0        5.0     *
       8. NE 82 N             *     1094.0      1391.0        5.0     *
       9. NE 164 N            *     1175.0      1396.0        5.0     *
      10. NE MID N            *     1298.0      1405.0        5.0     *
      11. NW MID N            *     1318.0      1496.0        5.0     *
      12. NW 164 N            *     1218.0      1493.0        5.0     *
      13. NW 82 N             *     1136.0      1488.0        5.0     *
      14. NW CNR              *     1054.0      1503.0        5.0     *
      15. NW 82 W             *     1043.0      1586.0        5.0     *
      16. NW 164 W            *     1057.0      1667.0        5.0     *
      17. NW MID W            *     1083.0      1784.0        5.0     *
      18. SW MID W            *     1024.0      1777.0        5.0     *
      19. SW 164 W            *      994.0      1650.0        5.0     *
      20. SW 82 W             *      975.0      1570.0        5.0     *
      21. SW CNR              *      935.0      1495.0        5.0     *
      22. SW 82 S             *      853.0      1474.0        5.0     *
      23. SW 164 S            *      771.0      1470.0        5.0     *
      24. SW MID S            *      631.0      1463.0        5.0     *
1
                                                                                                          PAGE  3
      JOB: Site 1 Existing AM - 1EXAM.DAT                  RUN: Site 1 Existing AM

       MODEL RESULTS
       -------------

       REMARKS : In search of the angle corresponding to
                 the maximum concentration, only the first
                 angle, of the angles with same maximum
                 concentrations, is indicated as maximum.

 WIND ANGLE RANGE:   0.-360.

 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
 ------*-----------------------------------------------------------------------------------------------------------------------------
   0.  *    .8    .8   1.9   1.7   1.4   1.8   2.2   2.5   1.9   1.0    .0    .1    .5   1.2   2.0   2.3   2.5    .4    .6    .7
```

5.	*	.8	.9	2.1	2.0	1.5	1.6	2.0	2.3	1.8	.8	.0	.1	.3	1.1	1.8	2.2	2.3	.8	1.0	1.2
10.	*	.8	1.0	2.4	2.1	1.6	1.4	1.8	2.0	1.6	.8	.0	.0	.2	.9	1.5	1.9	1.9	1.2	1.5	1.9
15.	*	.8	1.1	2.8	2.2	1.6	1.1	1.6	1.9	1.5	.8	.0	.0	.1	.6	1.2	1.4	1.5	1.6	1.9	2.3
20.	*	.9	1.3	3.0	2.2	1.6	.9	1.3	1.7	1.6	.8	.0	.0	.0	.3	.9	1.1	1.2	1.9	2.4	2.7
25.	*	1.0	1.4	3.3	1.8	1.4	.9	1.3	1.7	1.7	.8	.0	.0	.1	.2	.5	.8	.7	2.2	2.7	3.0
30.	*	1.1	1.7	3.3	1.6	1.4	1.0	1.4	1.7	1.6	.8	.0	.0	.1	.1	.2	.3	.4	2.4	2.9	3.2
35.	*	1.2	1.7	3.2	1.3	1.4	.9	1.5	1.8	1.6	.7	.0	.0	.1	.0	.1	.2	.2	2.5	2.9	3.2
40.	*	1.3	2.0	3.0	1.3	1.3	.8	1.6	1.8	1.6	.9	.0	.0	.1	.0	.0	.1	.1	2.5	2.9	3.1
45.	*	1.5	2.1	3.1	1.3	1.0	.9	1.7	1.8	1.5	.9	.0	.0	.1	.0	.0	.0	.0	2.5	2.8	3.0
50.	*	1.5	2.2	3.0	1.4	1.1	.9	1.7	1.8	1.4	.9	.0	.0	.1	.0	.0	.0	.0	2.4	2.6	2.9
55.	*	1.6	2.4	2.7	1.7	1.0	.7	2.0	1.8	1.4	1.1	.0	.0	.1	.0	.0	.0	.0	2.3	2.5	2.8
60.	*	1.5	2.1	2.8	2.1	1.0	.7	1.9	1.7	1.4	1.0	.1	.0	.2	.0	.0	.0	.0	2.2	2.4	2.6
65.	*	1.7	2.1	2.7	2.2	.8	.6	1.8	1.7	1.4	1.3	.2	.1	.3	.0	.0	.0	.0	2.2	2.3	2.5
70.	*	1.7	2.1	2.4	2.3	.7	.6	1.9	1.6	1.2	1.2	.3	.2	.5	.0	.0	.0	.0	2.1	2.2	2.4
75.	*	1.5	2.1	2.4	2.4	.5	.6	1.8	1.4	1.2	1.2	.5	.4	.8	.3	.0	.0	.0	2.0	2.2	2.3
80.	*	1.5	1.8	2.0	2.3	.4	.4	1.5	1.3	.9	1.0	.6	.6	1.2	.5	.0	.0	.0	2.0	2.2	2.3
85.	*	1.3	1.5	1.9	2.3	.0	.0	1.2	1.1	.8	.9	1.0	1.0	1.7	.8	.0	.0	.0	2.0	2.2	2.3
90.	*	1.2	1.2	1.4	2.1	.0	.0	.9	.8	.7	.7	1.1	1.5	2.2	1.3	.2	.0	.0	2.0	2.2	2.7
95.	*	.8	.9	1.0	1.8	.0	.0	.5	.4	.5	.4	1.3	1.6	2.7	1.7	.3	.1	.0	2.0	2.4	2.7
100.	*	.2	.4	.8	1.6	.0	.0	.3	.2	.2	.2	1.4	1.9	2.8	1.8	.4	.2	.0	2.0	2.3	2.8
105.	*	.2	.3	.4	1.6	.0	.0	.2	.2	.2	.2	1.3	2.0	3.0	2.0	.4	.2	.1	2.1	2.3	3.0
110.	*	.1	.2	.3	1.5	.0	.0	.1	.1	.1	.1	1.2	2.0	3.1	2.0	.7	.2	.2	2.2	2.4	3.1
115.	*	.1	.1	.2	1.4	.0	.0	.1	.1	.1	.1	1.1	2.2	2.9	2.0	.8	.2	.2	2.1	2.5	3.0
120.	*	.1	.1	.2	1.3	.0	.0	.1	.1	.1	.1	1.1	2.3	3.0	2.2	.7	.3	.1	2.1	2.6	3.2
125.	*	.1	.1	.1	1.1	.0	.0	.1	.1	.1	.1	1.1	2.3	2.9	2.0	.8	.2	.1	2.2	2.7	3.2
130.	*	.0	.0	.0	1.0	.0	.0	.1	.1	.1	.1	1.0	2.3	2.8	1.9	.9	.4	.2	2.2	2.8	3.1
135.	*	.0	.0	.0	.8	.0	.0	.1	.0	.0	.0	1.0	2.3	2.6	2.0	1.0	.5	.1	2.2	2.9	3.1
140.	*	.0	.0	.0	.7	.0	.0	.0	.0	.0	.0	1.0	2.3	2.6	1.9	.9	.6	.2	2.4	2.7	3.0
145.	*	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	1.0	2.3	2.4	1.8	.9	.6	.2	2.5	2.9	3.0
150.	*	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.9	2.4	2.4	1.7	.9	.6	.3	2.7	3.1	3.0
155.	*	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.9	2.3	2.3	1.8	.8	.6	.5	2.7	3.1	3.0
160.	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.9	2.4	2.3	1.7	.8	.6	.5	2.8	3.1	3.1
165.	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.9	2.3	2.3	1.5	.7	.6	.4	2.9	3.0	2.9
170.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	2.3	2.4	1.3	.7	.6	.5	2.9	3.0	2.8
175.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.4	2.5	1.2	.6	.6	.6	2.8	2.8	2.5
180.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.3	2.5	1.2	.6	.8	.7	2.6	2.7	2.3
185.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	2.4	2.3	1.0	.8	.8	1.0	2.4	2.5	2.1
190.	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.9	2.3	2.3	.9	.7	1.1	1.5	1.8	2.1	1.8
195.	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.9	2.3	2.3	.9	.9	1.4	1.8	1.7	1.6	1.6
200.	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.9	2.3	2.3	1.0	1.1	1.9	2.0	1.4	1.4	1.4
205.	*	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.9	2.4	2.5	1.1	1.5	2.2	2.4	1.1	1.2	1.2

1

JOB: Site 1 Existing AM - 1EXAM.DAT RUN: Site 1 Existing AM

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	*	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	1.1	2.4	2.7	1.1	1.6	2.4	2.9	.7	.9	1.1
215.	*	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0	1.1	2.5	2.7	1.1	1.8	2.6	3.1	.5	.7	1.0
220.	*	.0	.0	.0	.0	.0	.0	.9	.1	.1	.1	1.2	2.6	2.8	1.1	2.1	2.7	2.8	.3	.6	.8
225.	*	.0	.0	.0	.0	.0	.0	1.0	.1	.1	.1	1.4	2.8	2.9	1.2	2.2	2.6	2.7	.2	.5	.7
230.	*	.0	.1	.1	.1	.0	.0	1.2	.2	.1	.1	1.5	2.9	3.0	1.5	2.3	2.6	2.7	.2	.4	.6
235.	*	.1	.1	.1	.1	.0	.0	1.4	.2	.1	.1	1.8	3.1	3.0	1.5	2.4	2.4	2.6	.2	.4	.6
240.	*	.1	.1	.1	.1	.0	.0	1.5	.3	.1	.1	2.0	3.2	3.1	1.7	2.3	2.4	2.5	.2	.3	.6
245.	*	.1	.1	.1	.1	.0	.0	1.6	.3	.2	.2	2.4	3.4	3.1	1.8	2.3	2.3	2.4	.2	.4	.6
250.	*	.2	.1	.2	.4	.0	.0	1.9	.6	.4	.3	2.7	3.5	3.0	1.7	2.3	2.1	2.2	.1	.3	.6
255.	*	.3	.4	.3	.5	.0	.0	1.9	.8	.5	.5	2.6	3.4	2.7	1.9	2.1	2.1	2.2	.1	.2	.5
260.	*	.6	.6	.6	.9	.0	.1	2.1	1.1	.9	1.0	2.7	3.0	2.5	1.7	2.0	2.0	2.2	.0	.1	.4
265.	*	.7	.7	.8	1.3	.1	.1	2.3	1.5	1.1	1.2	2.5	2.5	2.4	1.6	1.8	2.0	2.1	.0	.1	.2
270.	*	1.0	.9	.9	1.6	.3	.3	2.6	1.7	1.3	1.7	1.9	2.2	1.9	1.2	1.7	1.9	2.1	.0	.0	.1
275.	*	1.1	1.0	1.1	2.0	.4	.4	2.7	1.6	1.5	1.9	1.3	1.5	1.4	1.2	1.7	1.9	2.1	.0	.0	.1
280.	*	1.1	1.1	1.2	2.2	.5	.5	2.6	1.7	1.8	1.9	1.2	1.2	1.2	1.1	1.6	1.9	2.1	.0	.0	.0
285.	*	1.1	1.2	1.5	2.4	.5	.6	2.4	1.6	1.9	2.0	.8	1.0	1.0	1.1	1.6	1.9	2.1	.0	.0	.0
290.	*	1.2	1.1	1.3	2.4	.5	.7	2.4	1.5	1.8	2.1	.6	.8	.9	1.2	1.7	1.9	2.1	.0	.0	.0
295.	*	1.1	1.2	1.3	2.4	.5	.7	2.0	1.4	1.8	2.3	.4	.5	.7	1.1	1.7	1.9	2.1	.0	.0	.0
300.	*	1.1	1.1	1.3	2.4	.6	.9	1.7	1.4	2.0	2.2	.3	.5	.7	1.1	1.7	1.9	2.1	.0	.0	.0
305.	*	1.0	1.1	1.4	2.3	.7	1.0	1.4	1.4	2.0	2.1	.3	.5	.7	1.1	1.7	1.9	2.1	.0	.0	.0
310.	*	.9	1.1	1.4	2.2	.6	1.0	1.5	1.6	2.2	2.0	.3	.5	.7	1.2	1.6	1.9	2.1	.0	.0	.0
315.	*	.9	1.0	1.4	1.9	.7	1.1	1.3	1.5	2.1	1.9	.4	.5	.7	1.2	1.6	1.9	2.1	.0	.0	.0
320.	*	.9	.9	1.4	1.7	.8	1.2	1.1	1.8	2.1	1.9	.4	.5	.7	1.2	1.6	1.9	2.1	.0	.0	.0
325.	*	.9	.8	1.3	1.5	.9	1.3	1.1	1.8	2.2	1.8	.3	.6	.8	1.2	1.8	2.0	2.2	.0	.0	.0
330.	*	.9	.8	1.4	1.3	.9	1.2	1.2	2.0	2.1	1.5	.3	.5	.8	1.3	2.0	2.1	2.3	.0	.0	.0
335.	*	.8	.8	1.4	1.2	.9	1.4	1.4	1.9	2.1	1.3	.3	.5	.7	1.4	2.0	2.1	2.4	.0	.0	.0
340.	*	.8	.8	1.4	1.2	.9	1.5	1.6	2.1	2.1	1.2	.2	.4	.7	1.3	2.1	2.3	2.5	.0	.0	.0
345.	*	.8	.8	1.5	1.3	1.0	1.5	1.8	2.3	2.2	1.1	.2	.4	.7	1.3	2.0	2.4	2.6	.0	.1	.1
350.	*	.8	.8	1.6	1.4	1.1	1.5	1.9	2.5	2.2	1.1	.1	.3	.7	1.3	2.0	2.4	2.6	.1	.1	.2
355.	*	.8	.8	1.7	1.4	1.0	1.6	2.1	2.5	2.0	1.0	.1	.2	.6	1.3	2.0	2.4	2.6	.3	.4	.4
360.	*	.8	.8	1.9	1.7	1.4	1.8	2.2	2.5	1.9	1.0	.0	.1	.5	1.2	2.0	2.3	2.5	.4	.6	.7
MAX	*	1.7	2.4	3.3	2.4	1.6	1.8	2.7	2.5	2.2	2.3	2.7	3.5	3.1	2.2	2.4	2.7	3.1	2.9	3.1	3.2
DEGR.	*	65	55	30	75	10	0	275	0	310	295	250	250	110	120	235	220	215	165	150	30

1

JOB: Site 1 Existing AM - 1EXAM.DAT RUN: Site 1 Existing AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0.	*	.3	.0	.0	.0
5.	*	.6	.1	.0	.0
10.	*	.8	.1	.0	.0
15.	*	1.2	.3	.1	.0

20.	*	1.6	.5	.1	.0
25.	*	1.9	.7	.3	.1
30.	*	2.0	.9	.4	.2
35.	*	2.0	1.0	.6	.3
40.	*	1.9	1.0	.7	.3
45.	*	1.8	1.0	.6	.4
50.	*	1.8	.9	.6	.4
55.	*	1.7	.9	.6	.5
60.	*	1.6	1.0	.7	.6
65.	*	1.5	.9	.8	.6
70.	*	1.5	1.1	.9	.7
75.	*	1.4	1.3	1.0	1.0
80.	*	1.6	1.5	1.3	1.3
85.	*	1.7	1.9	1.7	1.6
90.	*	1.9	2.0	2.0	1.9
95.	*	2.1	2.0	2.2	2.0
100.	*	2.1	2.2	2.2	2.0
105.	*	2.1	2.0	2.3	1.9
110.	*	1.9	2.0	2.4	1.8
115.	*	1.5	2.0	2.1	1.7
120.	*	1.4	2.2	2.0	1.5
125.	*	1.1	2.1	2.0	1.3
130.	*	1.3	2.2	1.8	1.2
135.	*	1.2	2.1	1.6	1.2
140.	*	1.3	2.0	1.4	1.1
145.	*	1.2	2.0	1.3	1.1
150.	*	1.1	2.0	1.2	1.1
155.	*	1.1	1.8	1.1	1.0
160.	*	1.2	1.7	1.0	1.0
165.	*	1.3	1.7	1.0	1.0
170.	*	1.4	1.7	1.1	1.1
175.	*	1.2	1.6	1.1	1.1
180.	*	1.4	1.6	1.1	1.1
185.	*	1.4	1.6	1.1	1.1
190.	*	1.6	1.4	1.0	1.0
195.	*	1.6	1.4	1.0	1.0
200.	*	1.5	1.4	1.0	1.0
205.	*	1.7	1.4	1.1	1.1

1

JOB: Site 1 Existing AM - 1EXAM.DAT RUN: Site 1 Existing AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	1.6	1.4	1.1	1.1
215.	*	1.7	1.3	1.1	1.1
220.	*	1.6	1.4	1.2	1.2
225.	*	1.4	1.4	1.2	1.2
230.	*	1.5	1.4	1.3	1.3
235.	*	1.5	1.5	1.4	1.5
240.	*	1.3	1.5	1.6	1.4
245.	*	1.3	1.6	1.5	1.5
250.	*	1.3	1.7	1.6	1.6
255.	*	1.3	1.7	1.7	1.6
260.	*	1.1	1.6	1.6	1.6
265.	*	.9	1.5	1.4	1.4
270.	*	.7	1.2	1.2	1.2
275.	*	.4	.9	1.0	.9
280.	*	.2	.6	.6	.6
285.	*	.1	.4	.4	.4
290.	*	.1	.3	.3	.3
295.	*	.0	.2	.2	.2
300.	*	.0	.2	.1	.1
305.	*	.0	.1	.1	.1
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.0	.0	.0
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.3	.0	.0	.0
MAX	*	2.1	2.2	2.4	2.0
DEGR.	*	95	120	110	95

THE HIGHEST CONCENTRATION IS 3.50 PPM AT 250 DEGREES FROM REC12.
THE 2ND HIGHEST CONCENTRATION IS 3.30 PPM AT 30 DEGREES FROM REC3 .
THE 3RD HIGHEST CONCENTRATION IS 3.20 PPM AT 30 DEGREES FROM REC20.

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Site 1 Existing PM - 1EXPM.DAT          60.0321.0.0000.000240.30480000    1
1
SE MID S                  650.     1369.       5.0
SE 164 S                  792.     1375.       5.0
SE 82 S                   874.     1379.       5.0
SE CNR                    960.     1383.       5.0
SE 82 E                   947.     1304.       5.0
NE 82 E                  1016.     1306.       5.0
NE CNR                   1022.     1387.       5.0
NE 82 N                  1094.     1391.       5.0
NE 164 N                 1175.     1396.       5.0
NE MID N                 1298.     1405.       5.0
NW MID N                 1318.     1496.       5.0
NW 164 N                 1218.     1493.       5.0
NW 82 N                  1136.     1488.       5.0
NW CNR                   1054.     1503.       5.0
NW 82 W                  1043.     1586.       5.0
NW 164 W                 1057.     1667.       5.0
NW MID W                 1083.     1784.       5.0
SW MID W                 1024.     1777.       5.0
SW 164 W                  994.     1650.       5.0
SW 82 W                   975.     1570.       5.0
SW CNR                    935.     1495.       5.0
SW 82 S                   853.     1474.       5.0
SW 164 S                  771.     1470.       5.0
SW MID S                  631.     1463.       5.0
Site 1 Existing PM                          24  1   0
  1
NB         Rt1 aprch AG     3.  1362.   559.  1390.    173015.5  0.  56   30.
  1
NB         Rt1 th+rt AG   559.  1390.  1016.  1410.    136015.5  0.  56   30.
  2
NB         Rt1 th+rt AG   936.  1407.   568.  1390.      0.  36   3
       206        65       2.0 1360  141.4 1678 1 3
  1
NB         Rt1 left  AG   552.  1408.  1013.  1432.     37015.5  0.  32   30.
  2
NB         Rt1 left  AG   934.  1428.   569.  1409.      0.  12   1
       206       157       2.0  370  141.4 1752 1 3
  1
NB         Rt1 departAG  1017.  1410.  1345.  1432.    153015.5  0.  56   30.
  1
NB         Rt1 departAG  1345.  1432.  1632.  1463.    153015.5  0.  44   30.
  1
NB         Rt1 departAG  1632.  1463.  1999.  1510.    153015.5  0.  44   30.
  1
SB         Rt1 aprch AG  1995.  1546.  1680.  1502.    114515.5  0.  44   30.
  1
SB         Rt1 aprch AG  1680.  1502.  1429.  1473.    114515.5  0.  44   30.
  1
SB         Rt1 aprch AG  1429.  1473.  1228.  1465.    114515.5  0.  44   30.
  1
SB         Rt1 th+rt AG  1228.  1465.  1017.  1455.    114015.5  0.  56   30.
  2
SB         Rt1 th+rt AG  1066.  1457.  1221.  1465.      0.  36   3
       206       111       2.0 1140  141.4 1653 1 3
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  1
SB        Rt1 left  AG  1165.  1444.  1020.  1436.       515.5  0.  32   30.
  2
SB        Rt1 left  AG  1068.  1439.  1161.  1444.      0.  12   1
       206       203       2.0    5  141.4 1752 1 3
  1
SB        Rt1 departAG  1017.  1455.     2.  1403.    130015.5  0.  56   30.
  1
EB        Rt28 aprchAG  1191.  2428.  1007.  1603.     39015.5  0.  32   30.
  1
EB        Rt28 aprchAG  1007.  1603.   961.  1435.     39015.5  0.  44   30.
  2
EB        Rt28 aprchAG   979.  1500.  1000.  1578.      0.  24   2
       206       180       2.0  390  141.4 1684 1 3
  1
EB        Rt28 deparAG   987.  1425.   978.  1298.      3015.5  0.  32   30.
  1
WB        Rt28 aprchAG   986.  1300.   997.  1445.     16015.5  0.  44   30.
  2
WB        Rt28 aprchAG   993.  1391.   986.  1306.      0.  24   2
       206       186       2.0  160  141.4 1706 1 3
  1
WB        Rt28 deparAG   999.  1445.  1024.  1615.     56515.5  0.  32   30.
  1
WB        Rt28 deparAG  1024.  1615.  1201.  2425.     56515.5  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000

JOB: Site 1 Existing PM - 1EXPM.DAT RUN: Site 1 Existing PM
DATE: 05/08/2009 TIME: 22:45:46.85

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB Rt1 aprch	3.0	1362.0	559.0	1390.0	557.	87.	AG	1730.	15.5	.0	56.0		
2. NB Rt1 th+rt	559.0	1390.0	1016.0	1410.0	457.	87.	AG	1360.	15.5	.0	56.0		
3. NB Rt1 th+rt	936.0	1407.0	775.2	1399.6	161.	267.	AG	359.	100.0	.0	36.0	.41	8.2
4. NB Rt1 left	552.0	1408.0	1013.0	1432.0	462.	87.	AG	370.	15.5	.0	32.0		
5. NB Rt1 left	934.0	1428.0	546.7	1407.8	388.	267.	AG	289.	100.0	.0	12.0	.97	19.7
6. NB Rt1 depart	1017.0	1410.0	1345.0	1432.0	329.	86.	AG	1530.	15.5	.0	56.0		
7. NB Rt1 depart	1345.0	1432.0	1632.0	1463.0	289.	84.	AG	1530.	15.5	.0	44.0		
8. NB Rt1 depart	1632.0	1463.0	1999.0	1510.0	370.	83.	AG	1530.	15.5	.0	44.0		
9. SB Rt1 aprch	1995.0	1546.0	1680.0	1502.0	318.	262.	AG	1145.	15.5	.0	44.0		
10. SB Rt1 aprch	1680.0	1502.0	1429.0	1473.0	253.	263.	AG	1145.	15.5	.0	44.0		
11. SB Rt1 aprch	1429.0	1473.0	1228.0	1465.0	201.	268.	AG	1145.	15.5	.0	44.0		
12. SB Rt1 th+rt	1228.0	1465.0	1017.0	1455.0	211.	267.	AG	1140.	15.5	.0	56.0		
13. SB Rt1 th+rt	1066.0	1457.0	1296.3	1468.9	231.	87.	AG	613.	100.0	.0	36.0	.52	11.7
14. SB Rt1 left	1165.0	1444.0	1020.0	1436.0	145.	267.	AG	5.	15.5	.0	32.0		
15. SB Rt1 left	1068.0	1439.0	1074.3	1439.3	6.	87.	AG	374.	100.0	.0	12.0	-.63	.3
16. SB Rt1 depart	1017.0	1455.0	2.0	1403.0	1016.	267.	AG	1300.	15.5	.0	56.0		
17. EB Rt28 aprch	1191.0	2428.0	1007.0	1603.0	845.	193.	AG	390.	15.5	.0	32.0		
18. EB Rt28 aprch	1007.0	1603.0	961.0	1435.0	174.	195.	AG	390.	15.5	.0	44.0		
19. EB Rt28 aprch	979.0	1500.0	1088.2	1905.5	420.	15.	AG	663.	100.0	.0	24.0	1.09	21.3
20. EB Rt28 depar	987.0	1425.0	978.0	1298.0	127.	184.	AG	30.	15.5	.0	32.0		
21. WB Rt28 aprch	986.0	1300.0	997.0	1445.0	145.	4.	AG	160.	15.5	.0	44.0		
22. WB Rt28 aprch	993.0	1391.0	986.2	1309.0	82.	185.	AG	685.	100.0	.0	24.0	.61	4.2
23. WB Rt28 depar	999.0	1445.0	1024.0	1615.0	172.	8.	AG	565.	15.5	.0	32.0		
24. WB Rt28 depar	1024.0	1615.0	1201.0	2425.0	829.	12.	AG	565.	15.5	.0	32.0		

1

JOB: Site 1 Existing PM - 1EXPM.DAT RUN: Site 1 Existing PM
DATE: 05/08/2009 TIME: 22:45:46.85

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB Rt1 th+rt	206	65	2.0	1360	1678	141.40	1	3
5. NB Rt1 left	206	157	2.0	370	1752	141.40	1	3
13. SB Rt1 th+rt	206	111	2.0	1140	1653	141.40	1	3
15. SB Rt1 left	206	203	2.0	5	1752	141.40	1	3
19. EB Rt28 aprch	206	180	2.0	390	1684	141.40	1	3
22. WB Rt28 aprch	206	186	2.0	160	1706	141.40	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	650.0	1369.0	5.0
2. SE 164 S	792.0	1375.0	5.0
3. SE 82 S	874.0	1379.0	5.0
4. SE CNR	960.0	1383.0	5.0
5. SE 82 E	947.0	1304.0	5.0
6. NE 82 E	1016.0	1306.0	5.0
7. NE CNR	1022.0	1387.0	5.0
8. NE 82 N	1094.0	1391.0	5.0
9. NE 164 N	1175.0	1396.0	5.0
10. NE MID N	1298.0	1405.0	5.0
11. NW MID N	1318.0	1496.0	5.0
12. NW 164 N	1218.0	1493.0	5.0
13. NW 82 N	1136.0	1488.0	5.0
14. NW CNR	1054.0	1503.0	5.0
15. NW 82 W	1043.0	1586.0	5.0
16. NW 164 W	1057.0	1667.0	5.0
17. NW MID W	1083.0	1784.0	5.0
18. SW MID W	1024.0	1777.0	5.0
19. SW 164 W	994.0	1650.0	5.0
20. SW 82 W	975.0	1570.0	5.0
21. SW CNR	935.0	1495.0	5.0
22. SW 82 S	853.0	1474.0	5.0
23. SW 164 S	771.0	1470.0	5.0
24. SW MID S	631.0	1463.0	5.0

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JOB: Site 1 Existing PM - 1EXPM.DAT RUN: Site 1 Existing PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.6	2.7	2.8	2.2	1.6	2.2	2.6	2.7	2.4	1.6	.0	.0	.4	1.3	2.1	2.4	2.1	.4	.6	.8

CONCENTRATION (PPM)

5.	*	1.6	2.7	2.9	2.5	1.9	1.9	2.2	2.6	2.3	1.5	.0	.0	.3	1.0	1.8	2.1	1.9	.6	.9	1.2
10.	*	1.6	2.8	3.1	2.6	2.0	1.8	2.3	2.4	2.2	1.4	.0	.0	.1	.7	1.5	1.8	1.5	.9	1.4	1.8
15.	*	1.6	2.8	3.4	2.6	2.1	1.4	2.2	2.2	2.1	1.3	.0	.0	.0	.6	1.1	1.3	1.1	1.2	1.8	2.2
20.	*	1.6	3.0	3.5	2.5	2.3	1.1	1.8	2.2	2.3	1.2	.0	.0	.0	.3	.9	.9	.8	1.6	2.3	2.6
25.	*	1.7	3.1	3.7	2.2	2.2	1.0	1.7	2.3	2.2	1.2	.0	.0	.0	.1	.4	.7	.5	1.9	2.6	2.9
30.	*	1.7	3.4	3.8	2.1	2.3	1.1	1.8	2.3	2.2	1.2	.0	.0	.1	.0	.3	.3	.3	2.1	2.9	3.1
35.	*	1.9	3.4	3.8	2.0	2.4	1.1	1.9	2.4	2.2	1.1	.0	.0	.1	.0	.1	.2	.2	2.3	3.0	3.3
40.	*	2.1	3.6	3.6	2.0	2.4	1.2	2.0	2.3	2.3	1.3	.0	.0	.1	.0	.0	.0	.0	2.4	3.0	3.2
45.	*	2.1	3.6	3.6	2.1	2.5	1.3	2.3	2.5	2.3	1.4	.0	.0	.1	.0	.0	.0	.0	2.5	2.8	3.0
50.	*	2.4	3.5	3.6	2.1	2.6	1.1	2.5	2.5	2.3	1.4	.0	.0	.1	.0	.0	.0	.0	2.4	2.8	2.9
55.	*	2.4	3.7	3.4	2.4	2.5	1.1	2.5	2.6	2.3	1.5	.0	.0	.1	.0	.0	.0	.0	2.4	2.6	2.8
60.	*	2.7	3.9	3.3	2.6	2.2	1.0	2.5	2.4	2.4	1.6	.0	.0	.2	.0	.0	.0	.0	2.3	2.5	2.7
65.	*	2.5	3.8	3.3	2.8	2.3	1.0	2.7	2.6	2.2	1.8	.1	.2	.2	.0	.0	.0	.0	2.2	2.4	2.6
70.	*	3.0	3.7	3.3	3.1	2.2	.8	2.6	2.5	2.2	1.8	.2	.2	.5	.1	.0	.0	.0	2.1	2.3	2.5
75.	*	2.8	3.6	3.2	3.3	1.8	.7	2.5	2.3	1.9	1.8	.5	.7	.9	.1	.0	.0	.0	2.1	2.3	2.4
80.	*	2.8	3.4	3.0	3.2	1.3	.4	2.2	2.2	1.9	1.6	.7	1.0	1.5	.6	.0	.0	.0	2.1	2.3	2.4
85.	*	2.4	2.9	2.6	3.2	1.1	.3	2.0	1.7	1.6	1.3	.9	1.4	2.1	1.1	.0	.0	.0	2.1	2.2	2.3
90.	*	1.9	2.4	2.1	2.9	.6	.1	1.6	1.4	1.3	1.2	1.2	1.7	2.7	1.4	.1	.0	.0	2.1	2.3	2.7
95.	*	1.4	1.6	1.6	2.3	.4	.0	1.0	.9	.9	.9	1.4	2.3	3.1	1.8	.5	.1	.0	2.1	2.3	3.0
100.	*	1.1	1.3	1.3	2.2	.3	.0	.7	.6	.6	.5	1.3	2.5	3.4	2.1	.5	.1	.0	2.1	2.5	3.2
105.	*	.6	.9	1.0	2.0	.2	.0	.4	.4	.4	.3	1.3	2.9	3.6	2.2	.7	.3	.1	2.2	2.7	3.2
110.	*	.5	.5	.9	2.0	.1	.0	.3	.3	.3	.3	1.4	2.9	3.5	2.4	.8	.4	.1	2.2	2.7	3.3
115.	*	.2	.5	.7	1.9	.1	.0	.2	.2	.2	.2	1.2	2.9	3.5	2.6	.8	.4	.2	2.4	2.7	3.5
120.	*	.1	.2	.5	1.8	.0	.0	.2	.2	.2	.1	1.2	3.0	3.6	2.5	1.0	.4	.3	2.3	3.0	3.4
125.	*	.1	.2	.4	1.8	.0	.0	.1	.1	.1	.1	1.1	3.1	3.5	2.4	1.1	.5	.2	2.4	3.2	3.4
130.	*	.1	.1	.3	1.8	.0	.0	.1	.1	.1	.1	1.0	3.0	3.2	2.3	1.1	.6	.3	2.4	3.2	3.5
135.	*	.1	.1	.3	1.8	.0	.0	.1	.1	.1	.1	1.1	3.1	3.1	2.2	1.1	.7	.3	2.6	3.0	3.4
140.	*	.1	.1	.2	1.8	.0	.0	.1	.1	.1	.1	1.1	3.0	3.0	2.1	1.1	.8	.4	2.6	3.0	3.2
145.	*	.1	.1	.2	1.7	.0	.0	.1	.1	.1	.1	1.0	3.0	3.0	2.0	1.0	.8	.5	2.8	3.2	3.2
150.	*	.1	.1	.1	1.6	.0	.0	.1	.1	.1	.1	1.0	2.9	2.8	1.9	1.0	.7	.4	2.8	3.5	3.3
155.	*	.1	.0	.1	1.5	.0	.0	.1	.1	.1	.1	.9	2.8	2.8	1.7	1.0	.7	.6	3.0	3.3	3.2
160.	*	.0	.0	.0	1.2	.0	.0	.0	.0	.0	.0	1.0	2.8	2.8	1.7	.9	.7	.5	3.0	3.3	3.3
165.	*	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.9	2.8	2.8	1.6	.8	.7	.5	3.0	3.2	3.1
170.	*	.0	.0	.0	.7	.0	.0	.1	.0	.0	.0	1.1	2.9	2.9	1.4	.8	.6	.6	3.2	3.2	3.0
175.	*	.0	.0	.0	.5	.0	.0	.1	.0	.0	.0	1.1	2.9	2.9	1.3	.9	.9	.8	3.2	3.2	2.8
180.	*	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	1.0	2.9	2.9	1.1	1.1	.8	1.0	3.1	3.0	2.6
185.	*	.0	.0	.0	.2	.0	.0	.4	.0	.0	.0	1.2	2.9	2.9	1.2	1.0	1.1	1.3	2.7	2.4	2.4
190.	*	.0	.0	.0	.1	.0	.0	.6	.0	.0	.0	1.2	2.8	2.8	1.2	1.0	1.5	2.0	2.3	2.2	2.0
195.	*	.0	.0	.0	.1	.0	.0	.9	.1	.0	.1	1.3	2.8	2.8	1.4	1.2	1.9	2.4	1.9	1.9	1.8
200.	*	.1	.0	.1	.1	.0	.0	1.1	.1	.1	.1	1.4	2.8	2.9	1.2	1.6	1.9	2.6	1.4	1.6	1.6
205.	*	.1	.1	.1	.1	.0	.0	1.4	.1	.1	.1	1.6	2.8	3.0	1.2	1.7	2.5	3.0	1.0	1.3	1.4

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JOB: Site 1 Existing PM - 1EXPM.DAT RUN: Site 1 Existing PM

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	*	.1	.1	.1	.1	.0	.0	1.7	.2	.1	.1	1.8	3.0	3.2	1.3	1.9	2.8	3.1	.7	1.0	1.3
215.	*	.1	.1	.1	.1	.0	.0	1.8	.2	.1	.1	2.0	3.1	3.2	1.5	2.3	3.0	3.3	.6	.9	1.3
220.	*	.1	.1	.1	.1	.0	.0	1.9	.3	.1	.1	2.2	3.2	3.4	1.4	2.5	3.0	3.2	.5	.8	1.1
225.	*	.1	.1	.1	.1	.0	.0	2.0	.4	.1	.1	2.4	3.4	3.5	1.5	2.7	3.0	3.2	.4	.7	1.0
230.	*	.1	.1	.1	.1	.0	.0	2.0	.5	.2	.2	2.7	3.6	3.6	1.7	2.8	3.0	3.0	.4	.7	1.0
235.	*	.1	.1	.2	.2	.0	.0	1.9	.7	.3	.2	2.9	3.7	3.6	2.0	2.9	2.8	3.0	.4	.5	1.0
240.	*	.3	.2	.3	.3	.0	.0	2.0	.8	.4	.4	3.3	3.8	3.5	1.9	2.9	2.8	2.8	.2	.5	1.0
245.	*	.3	.2	.4	.4	.0	.1	2.2	.9	.6	.4	3.6	4.0	3.6	2.3	2.8	2.7	2.6	.2	.5	.9
250.	*	.5	.4	.6	.7	.0	.2	2.2	1.2	.9	.7	3.7	3.9	3.5	2.2	2.6	2.5	2.5	.2	.4	.7
255.	*	.7	.8	1.0	1.1	.0	.3	2.7	1.7	1.4	1.1	4.0	3.8	3.5	2.1	2.5	2.3	2.5	.2	.2	.7
260.	*	.9	1.0	1.5	1.6	.1	.5	3.1	2.0	1.7	1.7	3.7	3.6	3.1	2.0	2.4	2.3	2.3	.0	.2	.4
265.	*	1.2	1.4	2.0	2.2	.2	.8	3.4	2.6	2.1	2.1	3.1	2.8	2.5	1.9	2.0	2.2	2.3	.0	.2	.3
270.	*	1.6	1.8	2.6	2.7	.4	1.2	3.6	2.7	2.4	2.3	2.6	2.4	2.2	1.6	2.0	2.0	2.3	.0	.0	.2
275.	*	1.8	2.1	3.0	3.2	.6	1.7	3.7	2.7	2.6	2.8	2.1	2.0	1.8	1.5	1.8	2.0	2.3	.0	.0	.1
280.	*	1.9	2.3	3.3	3.4	.8	1.8	3.7	2.7	2.6	3.0	1.2	1.1	1.4	1.2	1.8	2.1	2.3	.0	.0	.0
285.	*	2.0	2.4	3.4	3.4	.9	2.3	3.4	2.4	2.5	3.1	.9	1.0	1.0	1.2	1.8	2.1	2.2	.0	.0	.0
290.	*	2.1	2.4	3.4	3.1	1.2	2.7	2.9	2.2	2.2	2.9	.6	.7	1.0	1.2	1.9	2.1	2.3	.0	.0	.0
295.	*	2.0	2.4	3.3	3.1	1.2	2.7	2.6	2.1	2.5	2.9	.4	.6	.8	1.2	1.9	2.1	2.3	.0	.0	.0
300.	*	2.0	2.3	3.3	2.9	1.2	2.9	2.3	2.1	2.6	2.9	.3	.5	.7	1.2	1.8	2.1	2.3	.0	.0	.0
305.	*	1.9	2.3	3.3	2.8	1.3	3.0	1.9	1.9	2.6	2.9	.3	.5	.8	1.2	1.8	2.1	2.3	.0	.0	.0
310.	*	1.8	2.2	3.1	2.4	1.4	2.9	1.9	1.9	2.7	2.8	.3	.5	.8	1.3	1.8	2.1	2.3	.0	.0	.0
315.	*	1.6	2.3	3.0	2.3	1.2	2.9	1.7	1.9	2.8	2.7	.4	.6	.8	1.3	1.8	2.1	2.3	.0	.0	.0
320.	*	1.6	2.1	2.8	2.1	1.2	2.9	1.6	2.1	2.7	2.6	.4	.6	.7	1.3	1.8	2.1	2.3	.0	.0	.0
325.	*	1.6	2.2	2.8	1.9	1.2	2.8	1.7	2.3	2.7	2.7	.4	.5	.8	1.3	1.9	2.2	2.3	.0	.0	.0
330.	*	1.6	2.3	2.7	1.7	1.2	2.7	1.8	2.4	2.7	2.5	.3	.5	.8	1.3	2.1	2.3	2.5	.0	.0	.0
335.	*	1.6	2.4	2.7	1.6	1.2	2.7	1.8	2.3	2.7	2.4	.2	.5	.8	1.6	2.1	2.4	2.6	.0	.0	.0
340.	*	1.6	2.5	2.7	1.6	1.2	2.6	2.1	2.5	2.7	2.3	.2	.4	.8	1.4	2.1	2.5	2.6	.0	.0	.0
345.	*	1.6	2.5	2.7	1.7	1.2	2.5	2.4	2.8	2.9	2.1	.1	.3	.7	1.4	2.3	2.5	2.5	.0	.0	.1
350.	*	1.6	2.6	2.7	1.7	1.2	2.3	2.3	2.8	2.7	1.9	.0	.3	.6	1.4	2.3	2.5	2.5	.0	.1	.2
355.	*	1.6	2.7	2.7	1.8	1.2	2.2	2.5	2.7	2.6	1.7	.0	.2	.5	1.4	2.2	2.5	2.3	.2	.3	.3
360.	*	1.6	2.7	2.8	2.2	1.6	2.2	2.6	2.7	2.4	1.6	.0	.0	.4	1.3	2.1	2.4	2.1	.4	.6	.8
MAX	*	3.0	3.9	3.8	3.4	2.6	3.0	3.7	2.8	2.9	3.1	4.0	4.0	3.6	2.6	2.9	3.0	3.3	3.2	3.5	3.5
DEGR.	*	70	60	35	280	50	305	275	345	345	285	255	245	120	115	235	215	215	170	150	115

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JOB: Site 1 Existing PM - 1EXPM.DAT RUN: Site 1 Existing PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0.	*	.2	.0	.0	.0
5.	*	.6	.0	.0	.0
10.	*	.8	.1	.0	.0
15.	*	1.1	.3	.0	.0

```
  20.  *   1.5    .5    .1    .0
  25.  *   1.7    .6    .2    .0
  30.  *   2.0    .8    .4    .1
  35.  *   2.1   1.0    .6    .2
  40.  *   2.1   1.0    .7    .2
  45.  *   2.0   1.0    .7    .3
  50.  *   1.8   1.0    .7    .4
  55.  *   1.7   1.0    .6    .4
  60.  *   1.6   1.0    .6    .4
  65.  *   1.5   1.1    .7    .5
  70.  *   1.4   1.1    .8    .7
  75.  *   1.5   1.3   1.1    .8
  80.  *   1.7   1.4   1.3   1.3
  85.  *   2.1   2.0   1.7   1.7
  90.  *   2.2   2.3   2.1   2.2
  95.  *   2.5   2.3   2.4   2.4
 100.  *   2.3   2.4   2.5   2.5
 105.  *   2.3   2.1   2.5   2.5
 110.  *   2.0   2.0   2.5   2.5
 115.  *   1.6   2.2   2.7   2.3
 120.  *   1.5   2.2   2.5   2.3
 125.  *   1.6   2.3   2.5   2.1
 130.  *   1.5   2.4   2.5   1.9
 135.  *   1.6   2.3   2.3   1.7
 140.  *   1.3   2.4   2.3   1.6
 145.  *   1.4   2.3   2.2   1.6
 150.  *   1.5   2.3   2.1   1.5
 155.  *   1.4   2.2   2.0   1.5
 160.  *   1.5   2.2   2.0   1.5
 165.  *   1.6   2.1   1.9   1.5
 170.  *   1.6   2.1   1.9   1.5
 175.  *   1.5   2.2   1.9   1.6
 180.  *   1.6   2.2   1.9   1.6
 185.  *   1.5   2.1   1.7   1.5
 190.  *   1.7   2.1   1.6   1.5
 195.  *   1.6   2.1   1.6   1.5
 200.  *   1.7   2.1   1.6   1.5
 205.  *   1.7   2.1   1.5   1.6
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                                                                                                   PAGE  6
      JOB: Site 1 Existing PM - 1EXPM.DAT                        RUN: Site 1 Existing PM

 WIND ANGLE RANGE:   0.-360.

 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC21 REC22 REC23 REC24
 ------*------------------------
 210.  *   1.8   2.1   1.6   1.7
 215.  *   1.9   2.1   1.6   1.7
 220.  *   2.0   2.0   1.6   1.7
 225.  *   2.0   2.2   1.7   1.7
 230.  *   1.9   2.1   1.9   1.8
 235.  *   2.0   2.1   1.9   1.9
 240.  *   2.0   2.2   2.0   1.8
 245.  *   1.8   2.2   2.0   1.8
 250.  *   1.9   2.2   2.2   1.6
 255.  *   1.6   2.1   2.0   1.6
 260.  *   1.5   1.9   1.8   1.4
 265.  *   1.0   1.7   1.6   1.2
 270.  *    .7   1.2   1.2   1.0
 275.  *    .5   1.0    .8    .7
 280.  *    .2    .6    .6    .5
 285.  *    .1    .3    .3    .3
 290.  *    .0    .2    .2    .2
 295.  *    .0    .2    .1    .1
 300.  *    .0    .1    .1    .1
 305.  *    .0    .1    .1    .1
 310.  *    .0    .1    .1    .1
 315.  *    .0    .1    .1    .1
 320.  *    .0    .1    .1    .1
 325.  *    .0    .1    .1    .1
 330.  *    .0    .0    .0    .0
 335.  *    .0    .0    .0    .0
 340.  *    .0    .0    .0    .0
 345.  *    .0    .0    .0    .0
 350.  *    .0    .0    .0    .0
 355.  *    .1    .0    .0    .0
 360.  *    .2    .0    .0    .0
 ------*------------------------
 MAX   *   2.5   2.4   2.7   2.5
 DEGR. *   95   130   115   100

 THE HIGHEST CONCENTRATION IS    4.00 PPM AT  255 DEGREES FROM REC11.
 THE 2ND HIGHEST CONCENTRATION IS    4.00 PPM AT  245 DEGREES FROM REC12.
 THE 3RD HIGHEST CONCENTRATION IS    3.90 PPM AT   60 DEGREES FROM REC2 .
```

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Site 1 No Build 2014 AM - 1NBAM14.DAT   60.0321.0.0000.000240.30480000    1
1
SE MID S                  650.     1369.       5.0
SE 164 S                  792.     1375.       5.0
SE 82 S                   874.     1379.       5.0
SE CNR                    960.     1383.       5.0
SE 82 E                   947.     1304.       5.0
NE 82 E                  1016.     1306.       5.0
NE CNR                   1022.     1387.       5.0
NE 82 N                  1094.     1391.       5.0
NE 164 N                 1175.     1396.       5.0
NE MID N                 1298.     1405.       5.0
NW MID N                 1318.     1496.       5.0
NW 164 N                 1218.     1493.       5.0
NW 82 N                  1136.     1488.       5.0
NW CNR                   1054.     1503.       5.0
NW 82 W                  1043.     1586.       5.0
NW 164 W                 1057.     1667.       5.0
NW MID W                 1083.     1784.       5.0
SW MID W                 1024.     1777.       5.0
SW 164 W                  994.     1650.       5.0
SW 82 W                   975.     1570.       5.0
SW CNR                    935.     1495.       5.0
SW 82 S                   853.     1474.       5.0
SW 164 S                  771.     1470.       5.0
SW MID S                  631.     1463.       5.0
Site 1 No Build 2014 AM                  24  1   0
  1
NB        Rt1 aprch AG     3.  1362.   559.  1390.    140411.4  0.  56   30.
  1
NB        Rt1 th+rt AG   559.  1390.  1016.  1410.     96611.4  0.  56   30.
  2
NB        Rt1 th+rt AG   936.  1407.   568.  1390.      0.  36   3
       120        60       2.0  966  102.2 1679 1 3
  1
NB        Rt1 left  AG   552.  1408.  1013.  1432.     43811.4  0.  32   30.
  2
NB        Rt1 left  AG   934.  1428.   569.  1409.      0.  12   1
       120       103       2.0  438  102.2 1752 1 3
  1
NB        Rt1 departAG  1017.  1410.  1345.  1432.    110211.4  0.  56   30.
  1
NB        Rt1 departAG  1345.  1432.  1632.  1463.    110211.4  0.  44   30.
  1
NB        Rt1 departAG  1632.  1463.  1999.  1510.    110211.4  0.  44   30.
  1
SB        Rt1 aprch AG  1995.  1546.  1680.  1502.    256511.4  0.  44   30.
  1
SB        Rt1 aprch AG  1680.  1502.  1429.  1473.    256511.4  0.  44   30.
  1
SB        Rt1 aprch AG  1429.  1473.  1228.  1465.    256511.4  0.  44   30.
  1
SB        Rt1 th+rt AG  1228.  1465.  1017.  1455.    254511.4  0.  56   30.
  2
SB        Rt1 th+rt AG  1066.  1457.  1221.  1465.      0.  36   3
       120        73       2.0 2545  102.2 1667 1 3
```

```
  1
SB         Rt1 left  AG  1165.  1444.  1020.  1436.      2011.4  0.  32   30.
  2
SB         Rt1 left  AG  1068.  1439.  1161.  1444.      0.  12   1
       120       115       2.0   20  102.2 1752 1 3
  1
SB         Rt1 departAG  1017.  1455.     2.  1403.    311611.4  0.  56   30.
  1
EB         Rt28 aprchAG  1191.  2428.  1007.  1603.     79311.4  0.  32   30.
  1
EB         Rt28 aprchAG  1007.  1603.   961.  1435.     79311.4  0.  44   30.
  2
EB         Rt28 aprchAG   979.  1500.  1000.  1578.      0.  24   2
       120        91       2.0  793  102.2 1686 1 3
  1
EB         Rt28 deparAG   987.  1425.   978.  1298.      4511.4  0.  32   30.
  1
WB         Rt28 aprchAG   986.  1300.   997.  1445.      8511.4  0.  44   30.
  2
WB         Rt28 aprchAG   993.  1391.   986.  1306.      0.  24   2
       120       109       2.0   85  102.2 1694 1 3
  1
WB         Rt28 deparAG   999.  1445.  1024.  1615.     58411.4  0.  32   30.
  1
WB         Rt28 deparAG  1024.  1615.  1201.  2425.     58411.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000 PAGE 1

JOB: Site 1 No Build 2014 AM - 1NBAM14.DAT RUN: Site 1 No Build 2014 AM
DATE: 05/09/2009 TIME: 14:11:10.98

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	3.0	1362.0	559.0	1390.0	557.	87.	AG	1404.	11.4	.0	56.0		
2. NB	Rt1 th+rt	559.0	1390.0	1016.0	1410.0	457.	87.	AG	966.	11.4	.0	56.0		
3. NB	Rt1 th+rt	936.0	1407.0	830.5	1402.1	106.	267.	AG	411.	100.0	.0	36.0	.41	5.4
4. NB	Rt1 left	552.0	1408.0	1013.0	1432.0	462.	87.	AG	438.	11.4	.0	32.0		
5. NB	Rt1 left	934.0	1428.0	-1914.9	1279.7	2853.	267.	AG	235.	100.0	.0	12.0	2.32	144.9
6. NB	Rt1 depart	1017.0	1410.0	1345.0	1432.0	329.	86.	AG	1102.	11.4	.0	56.0		
7. NB	Rt1 depart	1345.0	1432.0	1632.0	1463.0	289.	84.	AG	1102.	11.4	.0	44.0		
8. NB	Rt1 depart	1632.0	1463.0	1999.0	1510.0	370.	83.	AG	1102.	11.4	.0	44.0		
9. SB	Rt1 aprch	1995.0	1546.0	1680.0	1502.0	318.	262.	AG	2565.	11.4	.0	44.0		
10. SB	Rt1 aprch	1680.0	1502.0	1429.0	1473.0	253.	263.	AG	2565.	11.4	.0	44.0		
11. SB	Rt1 aprch	1429.0	1473.0	1228.0	1465.0	201.	268.	AG	2565.	11.4	.0	44.0		
12. SB	Rt1 th+rt	1228.0	1465.0	1017.0	1455.0	211.	267.	AG	2545.	11.4	.0	56.0		
13. SB	Rt1 th+rt	1066.0	1457.0	4039.7	1610.5	2978.	87.	AG	500.	100.0	.0	36.0	1.42	151.3
14. SB	Rt1 left	1165.0	1444.0	1020.0	1436.0	145.	267.	AG	20.	11.4	.0	32.0		
15. SB	Rt1 left	1068.0	1439.0	1165.7	1444.3	98.	87.	AG	263.	100.0	.0	12.0	1.43	5.0
16. SB	Rt1 depart	1017.0	1455.0	2.0	1403.0	1016.	267.	AG	3116.	11.4	.0	56.0		
17. EB	Rt28 aprch	1191.0	2428.0	1007.0	1603.0	845.	193.	AG	793.	11.4	.0	32.0		
18. EB	Rt28 aprch	1007.0	1603.0	961.0	1435.0	174.	195.	AG	793.	11.4	.0	44.0		
19. EB	Rt28 aprch	979.0	1500.0	1172.1	2217.2	743.	15.	AG	416.	100.0	.0	24.0	1.13	37.7
20. EB	Rt28 depar	987.0	1425.0	978.0	1298.0	127.	184.	AG	45.	11.4	.0	32.0		
21. WB	Rt28 aprch	986.0	1300.0	997.0	1445.0	145.	4.	AG	85.	11.4	.0	44.0		
22. WB	Rt28 aprch	993.0	1391.0	990.9	1366.1	25.	185.	AG	498.	100.0	.0	24.0	.43	1.3
23. WB	Rt28 depar	999.0	1445.0	1024.0	1615.0	172.	8.	AG	584.	11.4	.0	32.0		
24. WB	Rt28 depar	1024.0	1615.0	1201.0	2425.0	829.	12.	AG	584.	11.4	.0	32.0		

1 PAGE 2

JOB: Site 1 No Build 2014 AM - 1NBAM14.DAT RUN: Site 1 No Build 2014 AM
DATE: 05/09/2009 TIME: 14:11:10.98

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 th+rt	120	60	2.0	966	1679	102.20	1	3
5. NB	Rt1 left	120	103	2.0	438	1752	102.20	1	3
13. SB	Rt1 th+rt	120	73	2.0	2545	1667	102.20	1	3
15. SB	Rt1 left	120	115	2.0	20	1752	102.20	1	3
19. EB	Rt28 aprch	120	91	2.0	793	1686	102.20	1	3
22. WB	Rt28 aprch	120	109	2.0	85	1694	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	650.0	1369.0	5.0
2. SE 164 S	792.0	1375.0	5.0
3. SE 82 S	874.0	1379.0	5.0
4. SE CNR	960.0	1383.0	5.0
5. SE 82 E	947.0	1304.0	5.0
6. NE 82 E	1016.0	1306.0	5.0
7. NE CNR	1022.0	1387.0	5.0
8. NE 82 N	1094.0	1391.0	5.0
9. NE 164 N	1175.0	1396.0	5.0
10. NE MID N	1298.0	1405.0	5.0
11. NW MID N	1318.0	1496.0	5.0
12. NW 164 N	1218.0	1493.0	5.0
13. NW 82 N	1136.0	1488.0	5.0
14. NW CNR	1054.0	1503.0	5.0
15. NW 82 W	1043.0	1586.0	5.0
16. NW 164 W	1057.0	1667.0	5.0
17. NW MID W	1083.0	1784.0	5.0
18. SW MID W	1024.0	1777.0	5.0
19. SW 164 W	994.0	1650.0	5.0
20. SW 82 W	975.0	1570.0	5.0
21. SW CNR	935.0	1495.0	5.0
22. SW 82 S	853.0	1474.0	5.0
23. SW 164 S	771.0	1470.0	5.0
24. SW MID S	631.0	1463.0	5.0

1 PAGE 3

JOB: Site 1 No Build 2014 AM - 1NBAM14.DAT RUN: Site 1 No Build 2014 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
	CONCENTRATION (PPM)																			
0.	1.5	1.5	2.9	2.1	1.5	1.8	2.1	2.7	2.3	2.0	.0	.1	.5	1.0	1.7	1.9	2.0	.6	.6	.7

5. *	1.5	1.5	3.0	2.4	1.5	1.7	2.0	2.7	2.1	1.9	.0	.1	.4	.9	1.6	1.8	1.9	.7	.9	1.1
10. *	1.5	1.5	3.0	2.4	1.7	1.2	1.9	2.5	1.9	1.9	.0	.1	.2	.7	1.3	1.5	1.7	1.1	1.2	1.4
15. *	1.4	1.5	3.2	2.3	1.6	1.2	1.8	2.2	1.9	1.9	.0	.0	.1	.6	1.1	1.3	1.4	1.5	1.7	2.0
20. *	1.6	1.8	3.4	2.3	1.6	1.1	1.6	2.4	1.9	1.9	.0	.0	.1	.4	.7	.9	1.0	1.7	1.9	2.2
25. *	1.7	2.0	3.7	2.0	1.3	1.0	1.6	2.3	1.9	1.9	.0	.0	.1	.1	.5	.6	.7	2.0	2.1	2.4
30. *	1.7	2.3	3.7	1.9	1.2	1.1	1.6	2.3	1.9	1.9	.0	.0	.1	.1	.3	.3	.4	2.1	2.2	2.5
35. *	1.9	2.3	3.6	1.7	1.1	1.0	1.6	2.3	2.0	2.0	.0	.0	.1	.0	.1	.1	.1	2.0	2.2	2.4
40. *	2.0	2.4	3.5	1.8	1.3	1.2	1.8	2.4	2.0	2.2	.0	.0	.1	.0	.0	.1	.1	2.0	2.1	2.3
45. *	1.9	2.5	3.5	1.8	1.1	1.2	2.0	2.4	2.2	2.2	.0	.0	.1	.0	.0	.0	.0	1.9	2.1	2.3
50. *	2.0	2.7	3.2	1.9	1.3	1.2	2.1	2.3	2.1	2.2	.1	.0	.1	.0	.0	.0	.0	1.9	2.0	2.1
55. *	2.0	2.8	3.4	2.1	1.2	1.2	2.5	2.5	2.3	2.4	.2	.0	.2	.0	.0	.0	.0	1.8	1.9	2.1
60. *	2.2	2.9	3.2	2.3	1.4	1.2	2.5	2.6	2.5	2.6	.2	.2	.3	.0	.0	.0	.0	1.7	1.8	1.9
65. *	2.4	3.1	3.4	2.6	1.3	1.4	2.7	2.5	2.6	2.5	.5	.3	.6	.1	.0	.0	.0	1.7	1.8	1.8
70. *	2.5	3.2	3.4	2.9	1.2	1.2	2.8	2.7	2.6	2.6	.8	.8	1.0	.2	.0	.0	.0	1.6	1.7	1.7
75. *	2.6	3.2	3.3	3.1	1.3	1.2	2.9	2.6	2.4	2.5	1.4	1.3	1.6	.7	.1	.0	.0	1.6	1.8	1.8
80. *	2.4	3.2	2.9	3.1	1.0	1.1	2.5	2.3	2.4	2.3	2.3	2.0	2.3	1.1	.2	.1	.1	1.7	1.8	1.9
85. *	2.1	2.7	2.7	2.9	.7	.6	2.2	2.0	2.1	2.1	3.0	2.8	3.1	1.7	.6	.2	.1	1.7	1.9	2.2
90. *	1.6	1.9	1.9	2.4	.3	.3	1.7	1.6	1.5	1.4	3.5	3.4	3.7	2.2	.9	.4	.2	1.8	2.2	2.5
95. *	1.1	1.5	1.3	1.8	.2	.2	1.1	1.2	1.1	1.1	4.0	3.7	4.1	2.5	1.0	.6	.3	1.9	2.4	2.7
100. *	.7	.8	.8	1.2	.1	.1	.5	.5	.5	.6	4.2	4.0	4.2	2.8	1.1	.7	.4	2.0	2.4	2.9
105. *	.4	.4	.5	1.1	.0	.0	.3	.3	.3	.3	4.1	3.9	4.1	2.8	1.3	.8	.5	2.0	2.4	3.1
110. *	.1	.2	.3	.9	.0	.0	.2	.1	.1	.1	3.8	3.7	3.9	2.8	1.3	.8	.6	2.2	2.4	2.8
115. *	.1	.1	.1	.8	.0	.0	.1	.1	.1	.1	3.6	3.6	3.7	2.7	1.3	.8	.6	2.2	2.5	2.9
120. *	.1	.1	.1	.7	.0	.0	.1	.1	.1	.1	3.5	3.4	3.4	2.6	1.2	.8	.4	2.1	2.5	2.8
125. *	.1	.1	.1	.6	.0	.0	.1	.1	.1	.1	3.3	3.2	3.4	2.4	1.0	.9	.5	2.1	2.4	2.9
130. *	.1	.1	.1	.5	.0	.0	.1	.1	.1	.1	3.0	3.0	3.2	2.5	1.2	.8	.5	2.1	2.6	2.8
135. *	.0	.0	.1	.4	.0	.0	.1	.1	.1	.1	2.9	3.0	3.1	2.4	1.2	.7	.5	2.0	2.6	2.7
140. *	.0	.0	.0	.2	.0	.0	.1	.1	.1	.1	2.8	2.8	3.0	2.3	1.1	.7	.4	2.1	2.6	2.7
145. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.8	2.7	2.9	2.2	1.0	.8	.4	2.2	2.6	2.6
150. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.6	2.6	2.8	2.1	1.1	.9	.6	2.3	2.6	2.6
155. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.6	2.6	2.9	1.9	1.1	.8	.6	2.3	2.5	2.4
160. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.6	2.7	2.9	1.8	1.0	.8	.6	2.4	2.6	2.4
165. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	2.7	2.9	1.7	.8	.7	.5	2.4	2.6	2.4
170. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	2.7	2.9	1.4	.8	.7	.6	2.3	2.5	2.4
175. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.6	2.7	3.1	1.3	.9	.7	.6	2.3	2.2	2.2
180. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.6	2.6	3.1	1.2	.7	.9	.7	2.2	2.0	2.1
185. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.6	2.6	3.0	1.1	.8	1.0	.9	2.0	2.0	1.9
190. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.6	2.5	2.9	1.2	1.1	.9	1.2	1.7	1.7	1.7
195. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	2.5	2.9	1.2	1.0	1.3	1.6	1.6	1.5	1.6
200. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.7	2.6	3.0	1.1	1.2	1.5	2.0	1.3	1.2	1.4
205. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.7	2.6	3.0	1.1	1.5	2.0	2.3	.9	1.1	1.4

1

WIND ANGLE * CONCENTRATION (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1	2.8	2.7	3.0	1.2	1.6	2.1	2.4	.8	.9	1.3
215. *	.0	.0	.0	.0	.0	.0	.3	.1	.1	.1	3.0	2.9	3.2	1.5	1.8	2.2	2.5	.6	.7	1.2
220. *	.0	.0	.1	.1	.0	.0	.4	.1	.1	.1	3.0	3.0	3.2	1.5	2.3	2.3	2.5	.5	.7	1.2
225. *	.1	.1	.1	.1	.0	.0	.5	.1	.1	.1	3.2	3.3	3.5	1.9	2.4	2.3	2.5	.4	.7	1.2
230. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	3.3	3.3	3.6	1.8	2.4	2.3	2.3	.4	.7	1.0
235. *	.1	.1	.1	.1	.0	.0	.8	.1	.1	.1	3.5	3.5	3.5	1.9	2.4	2.3	2.4	.5	.7	1.1
240. *	.1	.1	.1	.1	.0	.0	.9	.2	.1	.1	3.8	3.8	3.5	2.1	2.3	2.3	2.2	.4	.8	1.0
245. *	.2	.1	.1	.2	.0	.0	1.1	.3	.2	.2	4.0	4.0	3.7	2.4	2.4	2.1	2.0	.4	.7	1.0
250. *	.4	.5	.5	.6	.0	.0	1.4	.7	.6	.4	4.2	3.9	3.7	2.4	2.2	2.0	1.8	.3	.6	.9
255. *	.7	.5	.7	.9	.0	.0	1.7	.9	.9	.6	4.2	3.9	3.7	2.5	2.0	1.9	1.7	.2	.6	.8
260. *	1.0	1.0	1.1	1.4	.2	.2	2.2	1.5	1.2	1.2	3.9	3.6	3.4	2.3	2.0	1.7	1.7	.2	.4	.7
265. *	1.4	1.4	1.5	2.1	.3	.3	2.8	1.9	1.6	1.8	3.7	3.4	3.1	2.1	1.9	1.6	1.6	.1	.2	.6
270. *	1.7	1.8	2.1	2.4	.5	.6	2.9	2.2	2.1	2.1	3.0	2.7	2.6	1.7	1.6	1.6	1.5	.0	.2	.3
275. *	1.9	2.0	2.4	2.9	.7	.7	3.3	2.3	2.5	2.2	1.9	2.0	1.9	1.4	1.5	1.4	1.5	.0	.0	.2
280. *	2.1	2.0	2.7	3.1	.9	1.0	3.1	2.3	2.0	2.6	1.4	1.5	1.4	1.1	1.3	1.4	1.5	.0	.0	.0
285. *	2.1	2.1	2.9	3.3	.9	1.0	2.9	2.1	2.4	2.6	.8	.9	1.1	.9	1.4	1.4	1.5	.0	.0	.0
290. *	2.1	2.1	2.8	3.1	1.2	1.2	2.7	2.0	2.3	2.5	.6	.6	.8	.9	1.3	1.4	1.5	.0	.0	.0
295. *	2.1	1.8	2.7	2.8	1.1	1.3	2.4	1.9	2.3	2.5	.4	.5	.8	.9	1.3	1.4	1.5	.0	.0	.0
300. *	1.8	1.8	2.8	2.8	1.2	1.3	2.1	1.9	2.4	2.5	.4	.4	.6	.9	1.3	1.4	1.5	.0	.0	.0
305. *	1.8	1.8	2.9	2.7	1.2	1.3	1.8	1.7	2.5	2.4	.2	.4	.7	.9	1.3	1.4	1.5	.0	.0	.0
310. *	1.7	1.7	2.8	2.4	1.3	1.3	1.8	1.7	2.6	2.3	.2	.5	.7	.9	1.4	1.4	1.5	.0	.0	.0
315. *	1.7	1.7	2.9	2.3	1.3	1.3	1.4	1.7	2.7	2.3	.3	.5	.6	.8	1.4	1.4	1.5	.0	.0	.0
320. *	1.6	1.6	2.8	2.1	1.3	1.2	1.4	1.9	2.5	2.1	.3	.5	.6	.8	1.4	1.4	1.5	.0	.0	.0
325. *	1.6	1.6	2.8	1.9	1.3	1.2	1.4	1.8	2.4	2.2	.3	.6	.6	.8	1.3	1.5	1.7	.0	.0	.0
330. *	1.5	1.6	2.7	1.8	1.3	1.3	1.6	2.1	2.5	2.2	.3	.6	.7	1.0	1.4	1.7	1.9	.0	.0	.0
335. *	1.5	1.4	2.6	1.6	1.3	1.4	1.7	2.1	2.6	2.1	.3	.5	.6	1.0	1.4	1.7	1.9	.0	.0	.0
340. *	1.4	1.4	2.6	1.6	1.2	1.2	1.9	2.4	2.6	2.1	.3	.5	.6	1.1	1.6	1.8	1.9	.0	.0	.0
345. *	1.4	1.4	2.7	1.6	1.3	1.2	1.9	2.5	2.6	2.2	.2	.5	.6	1.1	1.7	1.8	2.0	.0	.0	.0
350. *	1.5	1.5	2.8	1.5	1.2	1.3	2.0	2.6	2.6	2.0	.1	.4	.6	1.1	1.7	1.9	2.0	.2	.2	.1
355. *	1.5	1.5	2.8	1.8	1.3	1.5	2.1	2.6	2.5	2.0	.1	.3	.6	1.1	1.8	1.9	2.0	.2	.3	.4
360. *	1.5	1.5	2.9	2.1	1.5	1.8	2.1	2.7	2.3	2.0	.0	.1	.5	1.0	1.7	1.9	2.0	.6	.6	.7
MAX *	2.6	3.2	3.7	3.3	1.7	1.8	3.3	2.7	2.7	2.6	4.2	4.0	4.2	2.8	2.4	2.3	2.5	2.4	2.6	3.1
DEGR. *	75	75	25	285	10	0	275	70	315	60	255	100	100	100	230	220	215	160	160	105

1

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE * CONCENTRATION (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.2	.0	.0	.0
5. *	.4	.1	.0	.0
10. *	.7	.1	.0	.0
15. *	1.0	.3	.1	.0

20.	*	1.3	.6	.2	.1
25.	*	1.4	.7	.4	.2
30.	*	1.5	.8	.4	.2
35.	*	1.6	.8	.6	.2
40.	*	1.6	.8	.6	.4
45.	*	1.4	.9	.6	.4
50.	*	1.3	.9	.7	.5
55.	*	1.2	.8	.6	.4
60.	*	1.1	.8	.5	.5
65.	*	1.1	1.0	.8	.7
70.	*	1.2	1.2	1.2	.8
75.	*	1.5	1.7	1.4	1.3
80.	*	2.0	2.3	1.9	1.8
85.	*	2.4	2.8	2.7	2.4
90.	*	2.8	3.1	3.1	2.9
95.	*	3.0	3.0	3.3	3.1
100.	*	2.9	2.9	3.1	3.0
105.	*	2.6	2.9	2.9	2.8
110.	*	2.5	2.8	3.1	2.7
115.	*	2.1	2.6	2.7	2.4
120.	*	2.0	2.6	2.6	2.3
125.	*	1.9	2.3	2.5	2.2
130.	*	1.7	2.4	2.4	2.0
135.	*	1.6	2.5	2.3	2.0
140.	*	1.6	2.4	2.1	1.8
145.	*	1.5	2.4	2.0	1.8
150.	*	1.5	2.3	1.9	1.7
155.	*	1.5	2.4	1.8	1.7
160.	*	1.5	2.4	1.8	1.7
165.	*	1.5	2.4	1.7	1.7
170.	*	1.7	2.3	1.7	1.7
175.	*	1.7	2.4	1.8	1.8
180.	*	1.7	2.4	1.8	1.8
185.	*	1.8	2.2	1.7	1.7
190.	*	1.8	2.2	1.7	1.7
195.	*	1.9	2.1	1.7	1.7
200.	*	1.9	2.0	1.7	1.7
205.	*	2.0	1.9	1.7	1.7

1

JOB: Site 1 No Build 2014 AM - 1NBAM14.DAT RUN: Site 1 No Build 2014 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.1	2.0	1.8	1.9
215.	*	2.1	1.9	1.8	1.9
220.	*	2.1	2.1	2.0	2.1
225.	*	2.1	2.1	2.1	2.2
230.	*	2.0	2.2	2.2	2.2
235.	*	2.0	2.2	2.3	2.3
240.	*	2.1	2.4	2.4	2.5
245.	*	2.2	2.5	2.5	2.4
250.	*	2.2	2.8	2.8	2.6
255.	*	2.0	2.7	2.8	2.6
260.	*	1.8	2.7	2.7	2.6
265.	*	1.5	2.4	2.4	2.2
270.	*	1.0	1.9	1.8	1.8
275.	*	.7	1.4	1.4	1.4
280.	*	.4	.9	.9	.9
285.	*	.2	.7	.6	.6
290.	*	.1	.4	.4	.4
295.	*	.0	.3	.3	.3
300.	*	.0	.2	.2	.2
305.	*	.0	.2	.2	.2
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.0	.0	.0
MAX	*	3.0	3.1	3.3	3.1
DEGR.	*	95	90	95	95

THE HIGHEST CONCENTRATION IS 4.20 PPM AT 255 DEGREES FROM REC11.
THE 2ND HIGHEST CONCENTRATION IS 4.20 PPM AT 100 DEGREES FROM REC13.
THE 3RD HIGHEST CONCENTRATION IS 4.00 PPM AT 100 DEGREES FROM REC12.

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Site 1 No Build 2030 AM - 1NBAM30.DAT   60.0321.0.0000.000240.30480000    1
1
SE MID S                 650.     1369.       5.0
SE 164 S                 792.     1375.       5.0
SE 82 S                  874.     1379.       5.0
SE CNR                   960.     1383.       5.0
SE 82 E                  947.     1304.       5.0
NE 82 E                 1016.     1306.       5.0
NE CNR                  1022.     1387.       5.0
NE 82 N                 1094.     1391.       5.0
NE 164 N                1175.     1396.       5.0
NE MID N                1298.     1405.       5.0
NW MID N                1318.     1496.       5.0
NW 164 N                1218.     1493.       5.0
NW 82 N                 1136.     1488.       5.0
NW CNR                  1054.     1503.       5.0
NW 82 W                 1043.     1586.       5.0
NW 164 W                1057.     1667.       5.0
NW MID W                1083.     1784.       5.0
SW MID W                1024.     1777.       5.0
SW 164 W                 994.     1650.       5.0
SW 82 W                  975.     1570.       5.0
SW CNR                   935.     1495.       5.0
SW 82 S                  853.     1474.       5.0
SW 164 S                 771.     1470.       5.0
SW MID S                 631.     1463.       5.0
Site 1 No Build 2030 AM                  24  1   0
  1
NB        Rt1 aprch AG     3.  1362.   559.  1390.    1720 9.2  0.  56   30.
  1
NB        Rt1 th+rt AG   559.  1390.  1016.  1410.    1200 9.2  0.  56   30.
  2
NB        Rt1 th+rt AG   936.  1407.   568.  1390.      0.  36   3
       121        46       2.0 1200   84.1 1679 1 3
  1
NB        Rt1 left  AG   552.  1408.  1013.  1432.     520 9.2  0.  32   30.
  2
NB        Rt1 left  AG   934.  1428.   569.  1409.      0.  12   1
       121        98       2.0  520   84.1 1752 1 3
  1
NB        Rt1 departAG  1017.  1410.  1345.  1432.    1345 9.2  0.  56   30.
  1
NB        Rt1 departAG  1345.  1432.  1632.  1463.    1345 9.2  0.  44   30.
  1
NB        Rt1 departAG  1632.  1463.  1999.  1510.    1345 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  1995.  1546.  1680.  1502.    3035 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  1680.  1502.  1429.  1473.    3035 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  1429.  1473.  1228.  1465.    3035 9.2  0.  44   30.
  1
SB        Rt1 th+rt AG  1228.  1465.  1017.  1455.    3015 9.2  0.  56   30.
  2
SB        Rt1 th+rt AG  1066.  1457.  1221.  1465.      0.  36   3
       121        65       2.0 3015   84.1 1668 1 3
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  1
SB        Rt1 left  AG  1165.  1444.  1020.  1436.      20 9.2  0.  32   30.
  2
SB        Rt1 left  AG  1068.  1439.  1161.  1444.      0.  12   1
       121       116       2.0   20   84.1 1752 1 3
  1
SB        Rt1 departAG  1017.  1455.     2.  1403.    3630 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1191.  2428.  1007.  1603.     860 9.2  0.  32   30.
  1
EB        Rt28 aprchAG  1007.  1603.   961.  1435.     860 9.2  0.  44   30.
  2
EB        Rt28 aprchAG   979.  1500.  1000.  1578.      0.  24   2
       121       102       2.0  860   84.1 1686 1 3
  1
EB        Rt28 deparAG   987.  1425.   978.  1298.      45 9.2  0.  32   30.
  1
WB        Rt28 aprchAG   986.  1300.   997.  1445.      85 9.2  0.  44   30.
  2
WB        Rt28 aprchAG   993.  1391.   986.  1306.      0.  24   2
       121       114       2.0   85   84.1 1694 1 3
  1
WB        Rt28 deparAG   999.  1445.  1024.  1615.     680 9.2  0.  32   30.
  1
WB        Rt28 deparAG  1024.  1615.  1201.  2425.     680 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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JOB: Site 1 No Build 2030 AM - 1NBAM30.DAT RUN: Site 1 No Build 2030 AM
DATE: 05/09/2009 TIME: 20:31:21.54

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB Rt1 aprch	3.0	1362.0	559.0	1390.0	557.	87.	AG	1720.	9.2	.0	56.0		
2. NB Rt1 th+rt	559.0	1390.0	1016.0	1410.0	457.	87.	AG	1200.	9.2	.0	56.0		
3. NB Rt1 th+rt	936.0	1407.0	835.5	1402.4	101.	267.	AG	257.	100.0	.0	36.0	.41	5.1
4. NB Rt1 left	552.0	1408.0	1013.0	1432.0	462.	87.	AG	520.	9.2	.0	32.0		
5. NB Rt1 left	934.0	1428.0	-1904.8	1280.2	2843.	267.	AG	183.	100.0	.0	12.0	1.89	144.4
6. NB Rt1 depart	1017.0	1410.0	1345.0	1432.0	329.	86.	AG	1345.	9.2	.0	56.0		
7. NB Rt1 depart	1345.0	1432.0	1632.0	1463.0	289.	84.	AG	1345.	9.2	.0	44.0		
8. NB Rt1 depart	1632.0	1463.0	1999.0	1510.0	370.	83.	AG	1345.	9.2	.0	44.0		
9. SB Rt1 aprch	1995.0	1546.0	1680.0	1502.0	318.	262.	AG	3035.	9.2	.0	44.0		
10. SB Rt1 aprch	1680.0	1502.0	1429.0	1473.0	253.	263.	AG	3035.	9.2	.0	44.0		
11. SB Rt1 aprch	1429.0	1473.0	1228.0	1465.0	201.	268.	AG	3035.	9.2	.0	44.0		
12. SB Rt1 th+rt	1228.0	1465.0	1017.0	1455.0	211.	267.	AG	3015.	9.2	.0	56.0		
13. SB Rt1 th+rt	1066.0	1457.0	4445.8	1631.4	3384.	87.	AG	364.	100.0	.0	36.0	1.40	171.9
14. SB Rt1 left	1165.0	1444.0	1020.0	1436.0	145.	267.	AG	20.	9.2	.0	32.0		
15. SB Rt1 left	1068.0	1439.0	1165.8	1444.3	98.	87.	AG	216.	100.0	.0	12.0	1.43	5.0
16. SB Rt1 depart	1017.0	1455.0	2.0	1403.0	1016.	267.	AG	3630.	9.2	.0	56.0		
17. EB Rt28 aprch	1191.0	2428.0	1007.0	1603.0	845.	193.	AG	860.	9.2	.0	32.0		
18. EB Rt28 aprch	1007.0	1603.0	961.0	1435.0	174.	195.	AG	860.	9.2	.0	44.0		
19. EB Rt28 aprch	979.0	1500.0	1644.5	3971.9	2560.	15.	AG	380.	100.0	.0	24.0	2.06	130.0
20. EB Rt28 depar	987.0	1425.0	978.0	1298.0	127.	184.	AG	45.	9.2	.0	32.0		
21. WB Rt28 aprch	986.0	1300.0	997.0	1445.0	145.	4.	AG	85.	9.2	.0	44.0		
22. WB Rt28 aprch	993.0	1391.0	988.2	1333.3	58.	185.	AG	425.	100.0	.0	24.0	1.00	2.9
23. WB Rt28 depar	999.0	1445.0	1024.0	1615.0	172.	8.	AG	680.	9.2	.0	32.0		
24. WB Rt28 depar	1024.0	1615.0	1201.0	2425.0	829.	12.	AG	680.	9.2	.0	32.0		

JOB: Site 1 No Build 2030 AM - 1NBAM30.DAT RUN: Site 1 No Build 2030 AM
DATE: 05/09/2009 TIME: 20:31:21.54

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB Rt1 th+rt	121	46	2.0	1200	1679	84.10	1	3
5. NB Rt1 left	121	98	2.0	520	1752	84.10	1	3
13. SB Rt1 th+rt	121	65	2.0	3015	1668	84.10	1	3
15. SB Rt1 left	121	116	2.0	20	1752	84.10	1	3
19. EB Rt28 aprch	121	102	2.0	860	1686	84.10	1	3
22. WB Rt28 aprch	121	114	2.0	85	1694	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	650.0	1369.0	5.0
2. SE 164 S	792.0	1375.0	5.0
3. SE 82 S	874.0	1379.0	5.0
4. SE CNR	960.0	1383.0	5.0
5. SE 82 E	947.0	1304.0	5.0
6. NE 82 E	1016.0	1306.0	5.0
7. NE CNR	1022.0	1387.0	5.0
8. NE 82 N	1094.0	1391.0	5.0
9. NE 164 N	1175.0	1396.0	5.0
10. NE MID N	1298.0	1405.0	5.0
11. NW MID N	1318.0	1496.0	5.0
12. NW 164 N	1218.0	1493.0	5.0
13. NW 82 N	1136.0	1488.0	5.0
14. NW CNR	1054.0	1503.0	5.0
15. NW 82 W	1043.0	1586.0	5.0
16. NW 164 W	1057.0	1667.0	5.0
17. NW MID W	1083.0	1784.0	5.0
18. SW MID W	1024.0	1777.0	5.0
19. SW 164 W	994.0	1650.0	5.0
20. SW 82 W	975.0	1570.0	5.0
21. SW CNR	935.0	1495.0	5.0
22. SW 82 S	853.0	1474.0	5.0
23. SW 164 S	771.0	1470.0	5.0
24. SW MID S	631.0	1463.0	5.0

JOB: Site 1 No Build 2030 AM - 1NBAM30.DAT RUN: Site 1 No Build 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.5	1.5	2.3	1.9	1.4	1.8	2.1	2.5	1.9	1.7	.2	.3	.6	1.0	1.5	1.9	2.1	.5	.6	.7

5. *	1.5	1.6	2.4	2.3	1.4	1.8	2.1	2.4	1.9	1.7	.2	.3	.5	.9	1.5	1.8	2.0	.9	1.0	1.2
10. *	1.6	1.6	2.7	2.4	1.8	1.3	1.9	2.2	1.7	1.6	.1	.2	.3	.9	1.4	1.7	1.9	1.3	1.4	1.5
15. *	1.5	1.7	2.7	2.4	1.8	1.3	1.9	2.1	1.8	1.6	.1	.1	.3	.7	1.2	1.4	1.6	1.6	1.8	1.9
20. *	1.6	1.9	3.1	2.4	1.6	1.1	1.6	2.1	1.7	1.5	.0	.1	.2	.5	.9	1.1	1.2	1.9	2.1	2.3
25. *	1.7	2.0	3.2	2.0	1.7	1.0	1.4	2.0	1.5	1.5	.0	.0	.2	.2	.6	.7	.8	2.0	2.2	2.4
30. *	1.8	2.1	3.1	1.8	1.4	1.0	1.4	1.9	1.6	1.6	.0	.0	.1	.1	.2	.4	.5	2.0	2.2	2.4
35. *	1.8	2.1	2.9	1.6	1.5	.9	1.5	1.9	1.7	1.7	.0	.0	.1	.0	.1	.1	.2	2.0	2.1	2.2
40. *	1.8	2.2	2.8	1.6	1.6	1.1	1.5	2.0	1.8	1.8	.0	.0	.1	.0	.0	.1	.1	1.9	1.9	2.2
45. *	1.8	2.1	2.8	1.5	1.4	1.1	1.8	2.0	1.9	1.8	.0	.0	.1	.0	.0	.0	.0	1.7	1.9	2.0
50. *	1.9	2.3	2.7	1.7	1.5	1.0	1.9	2.0	1.8	1.9	.0	.0	.1	.0	.0	.0	.0	1.7	1.8	1.9
55. *	1.9	2.5	2.5	1.9	1.4	1.0	2.2	2.1	1.9	2.1	.2	.0	.1	.0	.0	.0	.0	1.6	1.8	1.8
60. *	2.0	2.4	2.7	2.0	1.3	1.1	2.1	2.2	2.1	2.2	.2	.1	.3	.0	.0	.0	.0	1.6	1.7	1.7
65. *	2.0	2.4	2.7	2.3	1.5	1.1	2.3	2.2	2.2	2.1	.4	.3	.5	.1	.0	.0	.0	1.6	1.7	1.6
70. *	2.2	2.6	2.7	2.4	1.2	1.0	2.4	2.4	2.3	2.2	.7	.6	.8	.2	.0	.0	.0	1.5	1.6	1.6
75. *	2.3	2.6	2.7	2.6	1.2	1.0	2.4	2.3	2.1	2.2	1.2	1.1	1.4	.6	.1	.0	.0	1.5	1.6	1.6
80. *	2.1	2.5	2.5	2.8	.9	.9	2.2	2.0	2.1	2.0	1.9	1.7	1.9	.9	.2	.1	.0	1.5	1.6	1.7
85. *	2.0	2.2	2.4	2.7	.6	.5	1.9	1.8	1.8	1.8	2.4	2.3	2.5	1.4	.4	.2	.1	1.6	1.7	1.9
90. *	1.4	1.6	1.6	2.1	.2	.2	1.4	1.4	1.3	1.2	2.9	2.8	3.1	1.9	.7	.3	.2	1.7	1.8	2.3
95. *	1.1	1.2	1.2	1.7	.1	.1	.8	1.0	.9	1.0	3.3	3.1	3.4	2.1	.8	.5	.2	1.7	2.1	2.4
100. *	.6	.7	.9	1.3	.1	.1	.5	.5	.5	.5	3.4	3.4	3.4	2.1	.9	.6	.4	1.9	2.2	2.6
105. *	.3	.5	.7	1.2	.0	.0	.3	.3	.3	.3	3.3	3.2	3.4	2.4	.9	.6	.4	1.9	2.1	2.7
110. *	.1	.2	.3	1.2	.0	.0	.2	.1	.1	.1	3.0	3.0	3.3	2.3	1.0	.7	.5	2.0	2.0	2.5
115. *	.1	.2	.3	1.1	.0	.0	.1	.1	.1	.1	3.0	3.1	3.1	2.2	1.1	.7	.5	2.0	2.1	2.6
120. *	.1	.1	.2	1.1	.0	.0	.1	.1	.1	.1	2.7	2.8	2.8	2.2	1.0	.6	.4	2.0	2.2	2.6
125. *	.1	.1	.2	1.1	.0	.0	.1	.1	.1	.1	2.7	2.7	2.7	2.1	.9	.7	.4	1.9	2.0	2.5
130. *	.1	.1	.2	1.0	.0	.0	.1	.1	.1	.1	2.5	2.5	2.8	2.0	.9	.7	.4	1.9	2.1	2.5
135. *	.0	.0	.1	1.0	.0	.0	.1	.1	.1	.1	2.5	2.4	2.6	2.0	1.0	.6	.4	1.8	2.2	2.4
140. *	.0	.0	.0	.8	.0	.0	.1	.1	.1	.1	2.3	2.3	2.4	1.8	.9	.6	.3	1.9	2.3	2.4
145. *	.0	.0	.0	.7	.0	.0	.0	.0	.0	.0	2.4	2.2	2.4	1.8	.9	.7	.3	2.0	2.2	2.4
150. *	.0	.0	.0	.6	.0	.0	.0	.0	.0	.0	2.2	2.2	2.4	1.7	.9	.7	.5	2.1	2.3	2.3
155. *	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	2.1	2.2	2.3	1.7	.8	.7	.5	2.0	2.2	2.3
160. *	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	2.1	2.1	2.3	1.6	.8	.7	.5	2.1	2.2	2.3
165. *	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	2.2	2.2	2.5	1.4	.7	.6	.4	2.1	2.2	2.2
170. *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	2.3	2.2	2.5	1.3	.7	.6	.5	2.0	2.3	2.1
175. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.2	2.2	2.5	1.2	.8	.6	.5	2.0	2.1	2.0
180. *	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	2.2	2.2	2.5	1.3	.8	.7	.6	1.9	2.0	1.8
185. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.2	2.2	2.5	1.1	.7	1.1	.9	1.7	1.8	1.6
190. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.1	2.2	2.5	1.2	1.0	1.0	1.1	1.5	1.8	1.5
195. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	2.2	2.1	2.3	1.1	.9	1.2	1.4	1.5	1.3	1.4
200. *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	2.2	2.1	2.4	1.2	1.1	1.6	1.6	1.1	1.1	1.2
205. *	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	2.3	2.2	2.5	1.1	1.3	1.7	2.0	.9	1.0	1.2

1

WIND ANGLE (DEGR)*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	.0	.7	.0	.0	.1	2.4	2.3	2.6	1.2	1.6	2.0	2.1	.7	.9	1.1
215. *	.0	.0	.0	.0	.0	.0	.8	.1	.1	.1	2.4	2.3	2.6	1.4	1.6	2.1	2.2	.5	.7	1.0
220. *	.0	.0	.1	.1	.0	.0	.9	.1	.1	.1	2.6	2.6	2.8	1.5	1.7	2.1	2.2	.4	.6	1.0
225. *	.1	.1	.1	.1	.0	.0	1.0	.2	.1	.1	2.7	2.8	3.0	1.7	1.9	2.2	2.2	.3	.5	.9
230. *	.1	.1	.1	.1	.0	.0	1.1	.2	.1	.1	2.8	3.0	2.9	1.7	2.0	2.0	1.9	.3	.6	1.0
235. *	.1	.1	.1	.1	.0	.0	1.1	.3	.1	.1	2.9	3.0	3.1	1.7	2.0	1.9	2.0	.4	.6	.8
240. *	.1	.1	.1	.1	.0	.0	1.1	.3	.2	.1	3.2	3.2	3.0	1.9	2.1	2.0	1.9	.4	.7	.9
245. *	.2	.1	.1	.2	.0	.0	1.2	.5	.3	.2	3.3	3.5	3.2	2.0	2.1	1.9	1.9	.4	.5	.9
250. *	.4	.5	.4	.5	.0	.0	1.5	.8	.5	.3	3.5	3.5	3.2	2.1	2.1	1.8	1.8	.2	.5	.9
255. *	.6	.5	.6	.8	.0	.0	1.5	1.0	.8	.7	3.6	3.4	3.1	2.2	1.9	1.7	1.6	.2	.4	.8
260. *	.9	.8	.9	1.3	.2	.2	2.1	1.5	1.1	1.1	3.3	3.3	2.9	2.1	1.8	1.6	1.6	.2	.3	.7
265. *	1.2	1.3	1.3	1.8	.3	.3	2.4	1.7	1.5	1.8	3.0	2.9	2.8	1.6	1.6	1.5	1.4	.0	.2	.5
270. *	1.6	1.6	1.7	2.1	.5	.6	2.6	2.0	1.9	2.1	2.4	2.2	2.3	1.6	1.5	1.5	1.4	.0	.2	.3
275. *	1.7	1.9	2.1	2.4	.7	.7	2.8	2.3	2.2	2.1	1.6	1.6	1.8	1.1	1.3	1.3	1.4	.0	.0	.2
280. *	1.8	1.9	2.3	2.6	.8	.8	2.7	2.1	2.1	2.2	1.2	1.2	1.3	1.0	1.2	1.3	1.4	.0	.0	.0
285. *	2.0	1.9	2.4	2.7	.8	1.0	2.5	2.0	1.9	2.3	.7	.7	1.0	.8	1.2	1.3	1.4	.0	.0	.0
290. *	1.9	1.9	2.3	2.5	.9	1.0	2.2	1.7	2.0	2.2	.5	.6	.8	.8	1.2	1.3	1.4	.0	.0	.0
295. *	1.9	1.7	2.2	2.3	1.0	1.3	2.1	1.8	1.9	2.1	.4	.4	.7	.7	1.2	1.3	1.4	.0	.0	.0
300. *	1.7	1.7	2.3	2.3	1.0	1.3	1.7	1.6	2.1	2.2	.3	.3	.6	.7	1.2	1.3	1.4	.0	.0	.0
305. *	1.7	1.7	2.3	2.2	1.0	1.4	1.8	1.5	2.2	2.1	.2	.3	.6	.7	1.2	1.3	1.4	.0	.0	.0
310. *	1.5	1.5	2.2	2.0	1.1	1.4	1.7	1.3	2.3	2.0	.2	.4	.4	.7	1.1	1.3	1.4	.0	.0	.0
315. *	1.5	1.5	2.2	1.8	1.1	1.5	1.3	1.7	2.2	2.0	.2	.5	.4	.8	1.3	1.3	1.4	.0	.0	.0
320. *	1.5	1.5	2.2	1.7	1.1	1.6	1.4	1.6	2.2	1.9	.2	.5	.5	.8	1.2	1.3	1.5	.0	.0	.0
325. *	1.5	1.5	2.2	1.7	1.1	1.6	1.3	1.8	2.2	1.9	.2	.5	.5	.8	1.2	1.4	1.5	.0	.0	.0
330. *	1.5	1.5	2.2	1.5	1.1	1.7	1.5	1.8	2.2	1.8	.2	.6	.7	.9	1.3	1.4	1.5	.0	.0	.0
335. *	1.4	1.4	2.1	1.4	1.1	1.6	1.6	2.0	2.2	1.7	.2	.5	.6	.9	1.3	1.6	1.7	.0	.0	.0
340. *	1.4	1.4	2.2	1.5	1.1	1.4	1.6	2.1	2.2	1.7	.2	.5	.6	1.0	1.4	1.6	1.7	.0	.0	.0
345. *	1.4	1.4	2.3	1.6	1.1	1.3	1.8	2.0	2.3	1.7	.2	.5	.6	1.0	1.5	1.7	1.9	.0	.0	.0
350. *	1.5	1.5	2.3	1.5	1.1	1.5	1.8	2.3	2.2	1.7	.2	.4	.6	1.0	1.5	1.8	2.0	.2	.1	.1
355. *	1.5	1.5	2.3	1.6	1.3	1.6	2.0	2.4	2.1	1.7	.2	.3	.6	1.0	1.7	1.8	2.0	.3	.3	.4
360. *	1.5	1.5	2.3	1.9	1.4	1.8	2.1	2.5	1.9	1.7	.2	.3	.6	1.0	1.5	1.9	2.1	.5	.6	.7
MAX *	2.3	2.6	3.2	2.8	1.8	1.8	2.8	2.5	2.3	2.3	3.6	3.5	3.4	2.4	2.1	2.2	2.2	2.1	2.3	2.7
DEGR. *	75	70	25	80	10	0	275	0	70	285	255	245	95	105	240	225	215	150	140	105

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MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0. *	.2	.1	.0	.0
5. *	.5	.1	.1	.0
10. *	.8	.2	.1	.0
15. *	1.0	.4	.2	.1

20.	*	1.3	.8	.4	.2
25.	*	1.4	.8	.5	.3
30.	*	1.4	.8	.6	.3
35.	*	1.6	.8	.6	.4
40.	*	1.5	.8	.6	.4
45.	*	1.2	.7	.5	.3
50.	*	1.2	.9	.5	.3
55.	*	1.1	.7	.5	.4
60.	*	1.1	.7	.5	.4
65.	*	1.1	.9	.7	.5
70.	*	1.2	1.2	.9	.8
75.	*	1.3	1.5	1.3	1.2
80.	*	1.7	2.0	1.7	1.6
85.	*	2.2	2.4	2.3	2.2
90.	*	2.5	2.7	2.8	2.6
95.	*	2.6	2.7	2.9	2.7
100.	*	2.6	2.7	2.7	2.6
105.	*	2.4	2.7	2.7	2.6
110.	*	2.1	2.4	2.6	2.5
115.	*	1.9	2.3	2.5	2.2
120.	*	1.8	2.4	2.4	2.1
125.	*	1.8	2.2	2.3	1.9
130.	*	1.6	2.3	2.3	1.9
135.	*	1.6	2.1	2.0	1.8
140.	*	1.6	2.0	1.9	1.7
145.	*	1.6	2.1	1.8	1.7
150.	*	1.5	2.0	1.7	1.6
155.	*	1.4	1.9	1.7	1.6
160.	*	1.4	1.9	1.5	1.5
165.	*	1.5	1.9	1.5	1.5
170.	*	1.7	2.0	1.6	1.6
175.	*	1.6	2.0	1.6	1.6
180.	*	1.6	1.9	1.6	1.6
185.	*	1.5	1.9	1.6	1.6
190.	*	1.5	1.8	1.5	1.5
195.	*	1.6	1.7	1.5	1.5
200.	*	1.6	1.8	1.6	1.6
205.	*	1.7	1.8	1.7	1.7

1

PAGE 6

JOB: Site 1 No Build 2030 AM - 1NBAM30.DAT RUN: Site 1 No Build 2030 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	1.7	1.8	1.7	1.8
215.	*	1.7	1.9	1.8	1.9
220.	*	1.8	1.8	1.8	1.9
225.	*	1.7	1.9	1.9	2.0
230.	*	1.8	2.0	2.0	2.1
235.	*	1.8	2.1	2.1	2.1
240.	*	1.8	2.2	2.2	2.2
245.	*	2.0	2.3	2.3	2.2
250.	*	1.9	2.6	2.5	2.4
255.	*	1.8	2.6	2.6	2.4
260.	*	1.7	2.5	2.5	2.4
265.	*	1.4	2.2	2.2	2.1
270.	*	1.0	1.7	1.7	1.6
275.	*	.6	1.4	1.4	1.3
280.	*	.4	.9	.9	.8
285.	*	.1	.5	.5	.5
290.	*	.1	.4	.3	.3
295.	*	.0	.2	.2	.2
300.	*	.0	.2	.2	.2
305.	*	.0	.2	.1	.1
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.1	.0	.0
MAX	*	2.6	2.7	2.9	2.7
DEGR.	*	95	90	95	95

THE HIGHEST CONCENTRATION IS 3.60 PPM AT 255 DEGREES FROM REC11.
THE 2ND HIGHEST CONCENTRATION IS 3.50 PPM AT 245 DEGREES FROM REC12.
THE 3RD HIGHEST CONCENTRATION IS 3.40 PPM AT 95 DEGREES FROM REC13.

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Site 1 No Build 2014 PM - 1NBPM14.DAT   60.0321.0.0000.000240.30480000    1
1
SE MID S                  650.     1369.       5.0
SE 164 S                  792.     1375.       5.0
SE 82 S                   874.     1379.       5.0
SE CNR                    960.     1383.       5.0
SE 82 E                   947.     1304.       5.0
NE 82 E                  1016.     1306.       5.0
NE CNR                   1022.     1387.       5.0
NE 82 N                  1094.     1391.       5.0
NE 164 N                 1175.     1396.       5.0
NE MID N                 1298.     1405.       5.0
NW MID N                 1318.     1496.       5.0
NW 164 N                 1218.     1493.       5.0
NW 82 N                  1136.     1488.       5.0
NW CNR                   1054.     1503.       5.0
NW 82 W                  1043.     1586.       5.0
NW 164 W                 1057.     1667.       5.0
NW MID W                 1083.     1784.       5.0
SW MID W                 1024.     1777.       5.0
SW 164 W                  994.     1650.       5.0
SW 82 W                   975.     1570.       5.0
SW CNR                    935.     1495.       5.0
SW 82 S                   853.     1474.       5.0
SW 164 S                  771.     1470.       5.0
SW MID S                  631.     1463.       5.0
Site 1 No Build 2014 PM                   24  1   0
  1
NB         Rt1 aprch AG     3.  1362.   559.  1390.    288311.4  0.  56   30.
  1
NB         Rt1 th+rt AG   559.  1390.  1016.  1410.    212411.4  0.  56   30.
  2
NB         Rt1 th+rt AG   936.  1407.   568.  1390.      0.  36   3
       120        55       2.0 2124  102.2 1678 1 3
  1
NB         Rt1 left  AG   552.  1408.  1013.  1432.     75911.4  0.  32   30.
  2
NB         Rt1 left  AG   934.  1428.   569.  1409.      0.  12   1
       120        93       2.0  759  102.2 1752 1 3
  1
NB         Rt1 departAG  1017.  1410.  1345.  1432.    229511.4  0.  56   30.
  1
NB         Rt1 departAG  1345.  1432.  1632.  1463.    229511.4  0.  44   30.
  1
NB         Rt1 departAG  1632.  1463.  1999.  1510.    229511.4  0.  44   30.
  1
SB         Rt1 aprch AG  1995.  1546.  1680.  1502.    156211.4  0.  44   30.
  1
SB         Rt1 aprch AG  1680.  1502.  1429.  1473.    156211.4  0.  44   30.
  1
SB         Rt1 aprch AG  1429.  1473.  1228.  1465.    156211.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1228.  1465.  1017.  1455.    155711.4  0.  56   30.
  2
SB         Rt1 th+rt AG  1066.  1457.  1221.  1465.      0.  36   3
       120        79       2.0 1557  102.2 1660 1 3
```

```
    1
SB          Rt1 left  AG  1165.  1444.  1020.  1436.      1011.4  0.  32   30.
    2
SB          Rt1 left  AG  1068.  1439.  1161.  1444.      0.  12   1
       120       115       2.0   10  102.2 1752 1 3
    1
SB          Rt1 departAG  1017.  1455.     2.  1403.    192511.4  0.  56   30.
    1
EB          Rt28 aprchAG  1191.  2428.  1007.  1603.     59611.4  0.  32   30.
    1
EB          Rt28 aprchAG  1007.  1603.   961.  1435.     59611.4  0.  44   30.
    2
EB          Rt28 aprchAG   979.  1500.  1000.  1578.      0.  24   2
       120        99       2.0  596  102.2 1684 1 3
    1
EB          Rt28 deparAG   987.  1425.   978.  1298.      3011.4  0.  32   30.
    1
WB          Rt28 aprchAG   986.  1300.   997.  1445.     16011.4  0.  44   30.
    2
WB          Rt28 aprchAG   993.  1391.   986.  1306.      0.  24   2
       120       104       2.0  160  102.2 1706 1 3
    1
WB          Rt28 deparAG   999.  1445.  1024.  1615.     95111.4  0.  32   30.
    1
WB          Rt28 deparAG  1024.  1615.  1201.  2425.     95111.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

JOB: Site 1 No Build 2014 PM - 1NBPM14.DAT RUN: Site 1 No Build 2014 PM
DATE: 05/09/2009 TIME: 20:20:20.90

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB Rt1 aprch	3.0	1362.0	559.0	1390.0	557.	87.	AG	2883.	11.4	.0	56.0		
2. NB Rt1 th+rt	559.0	1390.0	1016.0	1410.0	457.	87.	AG	2124.	11.4	.0	56.0		
3. NB Rt1 th+rt	936.0	1407.0	717.4	1396.9	219.	267.	AG	377.	100.0	.0	36.0	.83	11.1
4. NB Rt1 left	552.0	1408.0	1013.0	1432.0	462.	87.	AG	759.	11.4	.0	32.0		
5. NB Rt1 left	934.0	1428.0	-3820.4	1180.5	4761.	267.	AG	212.	100.0	.0	12.0	2.27	241.9
6. NB Rt1 depart	1017.0	1410.0	1345.0	1432.0	329.	86.	AG	2295.	11.4	.0	56.0		
7. NB Rt1 depart	1345.0	1432.0	1632.0	1463.0	289.	84.	AG	2295.	11.4	.0	44.0		
8. NB Rt1 depart	1632.0	1463.0	1999.0	1510.0	370.	83.	AG	2295.	11.4	.0	44.0		
9. SB Rt1 aprch	1995.0	1546.0	1680.0	1502.0	318.	262.	AG	1562.	11.4	.0	44.0		
10. SB Rt1 aprch	1680.0	1502.0	1429.0	1473.0	253.	263.	AG	1562.	11.4	.0	44.0		
11. SB Rt1 aprch	1429.0	1473.0	1228.0	1465.0	201.	268.	AG	1562.	11.4	.0	44.0		
12. SB Rt1 th+rt	1228.0	1465.0	1017.0	1455.0	211.	267.	AG	1557.	11.4	.0	56.0		
13. SB Rt1 th+rt	1066.0	1457.0	1480.0	1478.4	415.	87.	AG	541.	100.0	.0	36.0	1.02	21.1
14. SB Rt1 left	1165.0	1444.0	1020.0	1436.0	145.	267.	AG	10.	11.4	.0	32.0		
15. SB Rt1 left	1068.0	1439.0	1078.4	1439.6	10.	87.	AG	263.	100.0	.0	12.0	.71	.5
16. SB Rt1 depart	1017.0	1455.0	2.0	1403.0	1016.	267.	AG	1925.	11.4	.0	56.0		
17. EB Rt28 aprch	1191.0	2428.0	1007.0	1603.0	845.	193.	AG	596.	11.4	.0	32.0		
18. EB Rt28 aprch	1007.0	1603.0	961.0	1435.0	174.	195.	AG	596.	11.4	.0	44.0		
19. EB Rt28 aprch	979.0	1500.0	1198.9	2316.8	846.	15.	AG	452.	100.0	.0	24.0	1.25	43.0
20. EB Rt28 depar	987.0	1425.0	978.0	1298.0	127.	184.	AG	30.	11.4	.0	32.0		
21. WB Rt28 aprch	986.0	1300.0	997.0	1445.0	145.	4.	AG	160.	11.4	.0	44.0		
22. WB Rt28 aprch	993.0	1391.0	989.3	1345.7	45.	185.	AG	475.	100.0	.0	24.0	.47	2.3
23. WB Rt28 depar	999.0	1445.0	1024.0	1615.0	172.	8.	AG	951.	11.4	.0	32.0		
24. WB Rt28 depar	1024.0	1615.0	1201.0	2425.0	829.	12.	AG	951.	11.4	.0	32.0		

JOB: Site 1 No Build 2014 PM - 1NBPM14.DAT RUN: Site 1 No Build 2014 PM
DATE: 05/09/2009 TIME: 20:20:20.90

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB Rt1 th+rt	120	55	2.0	2124	1678	102.20	1	3
5. NB Rt1 left	120	93	2.0	759	1752	102.20	1	3
13. SB Rt1 th+rt	120	79	2.0	1557	1660	102.20	1	3
15. SB Rt1 left	120	115	2.0	10	1752	102.20	1	3
19. EB Rt28 aprch	120	99	2.0	596	1684	102.20	1	3
22. WB Rt28 aprch	120	104	2.0	160	1706	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. SE MID S	650.0	1369.0	5.0
2. SE 164 S	792.0	1375.0	5.0
3. SE 82 S	874.0	1379.0	5.0
4. SE CNR	960.0	1383.0	5.0
5. SE 82 E	947.0	1304.0	5.0
6. NE 82 E	1016.0	1306.0	5.0
7. NE CNR	1022.0	1387.0	5.0
8. NE 82 N	1094.0	1391.0	5.0
9. NE 164 N	1175.0	1396.0	5.0
10. NE MID N	1298.0	1405.0	5.0
11. NW MID N	1318.0	1496.0	5.0
12. NW 164 N	1218.0	1493.0	5.0
13. NW 82 N	1136.0	1488.0	5.0
14. NW CNR	1054.0	1503.0	5.0
15. NW 82 W	1043.0	1586.0	5.0
16. NW 164 W	1057.0	1667.0	5.0
17. NW MID W	1083.0	1784.0	5.0
18. SW MID W	1024.0	1777.0	5.0
19. SW 164 W	994.0	1650.0	5.0
20. SW 82 W	975.0	1570.0	5.0
21. SW CNR	935.0	1495.0	5.0
22. SW 82 S	853.0	1474.0	5.0
23. SW 164 S	771.0	1470.0	5.0
24. SW MID S	631.0	1463.0	5.0

JOB: Site 1 No Build 2014 PM - 1NBPM14.DAT RUN: Site 1 No Build 2014 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	1.7	2.9	3.0	2.4	1.8	1.9	2.4	2.6	2.5	2.3	.1	.3	.6	1.2	1.9	2.2	2.3	.5	.6	.8

CONCENTRATION (PPM)

5.	*	1.7	2.9	3.1	2.6	1.7	1.6	2.3	2.7	2.4	2.3	.0	.1	.4	1.0	1.8	2.0	2.2	.8	1.0	1.1
10.	*	1.7	2.9	3.2	2.7	1.9	1.7	2.2	2.4	2.1	2.1	.0	.1	.3	.9	1.6	1.9	2.0	1.2	1.4	1.6
15.	*	1.7	3.0	3.4	2.8	2.1	1.5	2.2	2.3	2.1	2.1	.0	.0	.1	.6	1.2	1.5	1.6	1.6	1.9	1.9
20.	*	1.8	3.2	3.6	2.5	2.1	1.1	1.9	2.2	2.1	2.1	.0	.0	.1	.4	.9	1.1	1.2	1.9	2.1	2.3
25.	*	1.8	3.4	3.8	2.5	1.8	1.1	1.7	2.2	2.2	2.1	.0	.0	.0	.2	.7	.8	.9	2.1	2.3	2.5
30.	*	1.9	3.5	3.9	2.4	1.5	1.1	1.7	2.2	2.3	2.2	.0	.0	.1	.1	.3	.4	.4	2.2	2.5	2.7
35.	*	2.3	3.7	3.9	2.0	1.6	1.1	1.9	2.3	2.2	2.2	.0	.0	.1	.0	.1	.2	.3	2.3	2.4	2.6
40.	*	2.4	3.7	3.5	1.8	1.6	1.1	2.2	2.3	2.4	2.3	.0	.0	.1	.0	.0	.1	.1	2.2	2.3	2.5
45.	*	2.6	3.9	3.5	2.2	1.5	1.3	2.4	2.5	2.4	2.4	.0	.0	.1	.0	.0	.0	.0	2.1	2.2	2.4
50.	*	2.6	3.9	3.6	2.3	1.6	1.2	2.5	2.6	2.5	2.5	.0	.0	.1	.0	.0	.0	.0	2.0	2.2	2.3
55.	*	2.7	3.9	3.6	2.4	1.5	1.3	2.7	2.7	2.6	2.5	.1	.0	.2	.0	.0	.0	.0	1.9	2.1	2.2
60.	*	3.0	4.2	3.5	2.6	1.4	1.2	2.6	2.7	2.8	2.7	.1	.1	.2	.0	.0	.0	.0	1.9	1.9	2.1
65.	*	3.2	4.0	3.5	2.7	1.3	1.2	2.8	2.9	2.8	2.6	.3	.3	.3	.1	.0	.0	.0	1.8	1.9	1.9
70.	*	3.3	3.9	3.5	3.1	1.3	1.1	2.9	2.8	2.7	2.6	.5	.4	.6	.1	.0	.0	.0	1.7	1.8	1.8
75.	*	3.3	3.8	3.3	3.3	.9	.9	2.9	2.8	2.6	2.3	.9	1.0	1.1	.2	.0	.0	.0	1.7	1.8	1.8
80.	*	3.3	3.7	3.3	3.3	.6	.5	2.5	2.5	2.4	2.2	1.4	1.4	1.7	.8	.0	.0	.0	1.7	1.8	1.8
85.	*	2.9	3.1	2.9	3.1	.4	.4	2.2	2.1	2.1	1.8	1.9	2.0	2.3	1.2	.1	.0	.0	1.7	1.8	1.8
90.	*	2.4	2.5	2.1	2.7	.3	.1	1.8	1.8	1.5	1.4	2.6	2.4	3.0	1.6	.3	.0	.0	1.7	1.8	2.1
95.	*	1.8	1.7	1.5	2.1	.0	.0	1.1	1.2	1.1	1.1	3.0	3.1	3.3	2.2	.6	.1	.0	1.7	2.0	2.4
100.	*	1.1	1.1	1.1	1.8	.0	.0	.8	.8	.7	.6	3.1	3.2	3.6	2.4	.7	.3	.0	1.6	2.2	2.8
105.	*	.6	.8	.7	1.5	.0	.0	.5	.4	.5	.4	3.4	3.6	3.9	2.3	.9	.4	.1	1.7	2.3	2.9
110.	*	.4	.5	.7	1.4	.0	.0	.3	.3	.3	.3	3.4	3.5	3.6	2.5	1.0	.6	.1	1.8	2.4	2.8
115.	*	.2	.3	.3	1.4	.0	.0	.3	.2	.2	.2	3.3	3.3	3.5	2.5	1.0	.7	.4	2.1	2.4	3.0
120.	*	.2	.2	.3	1.2	.0	.0	.2	.2	.2	.1	3.2	3.3	3.5	2.4	1.1	.6	.4	2.1	2.5	3.0
125.	*	.1	.1	.2	1.2	.0	.0	.2	.2	.1	.1	3.1	3.1	3.3	2.2	1.1	.7	.4	2.1	2.7	2.8
130.	*	.1	.1	.1	1.1	.0	.0	.1	.1	.1	.1	3.0	3.1	3.0	2.3	1.1	.7	.5	2.3	2.8	2.7
135.	*	.1	.1	.1	1.0	.0	.0	.1	.1	.1	.1	3.0	3.1	2.9	2.1	1.1	.8	.4	2.3	2.6	2.7
140.	*	.1	.1	.1	.9	.0	.0	.1	.1	.1	.1	2.9	2.8	2.8	2.0	1.1	.8	.6	2.3	2.4	2.7
145.	*	.1	.1	.1	.8	.0	.0	.1	.1	.1	.1	2.8	2.8	2.8	1.9	1.1	.8	.6	2.4	2.6	2.9
150.	*	.1	.1	.1	.7	.0	.0	.1	.1	.1	.1	2.8	2.7	2.6	1.8	1.0	.7	.5	2.4	2.7	2.7
155.	*	.1	.1	.1	.6	.0	.0	.1	.1	.1	.1	2.6	2.6	2.6	1.7	1.0	.7	.6	2.4	2.7	2.5
160.	*	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	2.6	2.7	2.6	1.6	.9	.7	.5	2.5	2.6	2.7
165.	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	2.7	2.6	2.6	1.5	.8	.6	.5	2.4	2.7	2.4
170.	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.8	2.7	2.7	1.4	.8	.6	.7	2.5	2.6	2.5
175.	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.8	2.7	2.7	1.2	.7	.7	.6	2.4	2.5	2.2
180.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	2.7	2.7	1.1	1.0	.7	.8	2.4	2.3	2.1
185.	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.7	2.7	2.7	1.2	.9	1.0	1.0	2.3	2.1	2.0
190.	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.6	2.6	2.6	1.0	1.0	1.3	1.7	1.8	2.0	1.8
195.	*	.0	.0	.0	.0	.0	.0	.2	.1	.1	.1	2.6	2.6	2.6	1.2	1.2	1.6	1.9	1.5	1.6	1.6
200.	*	.1	.1	.1	.1	.0	.0	.3	.1	.1	.1	2.6	2.6	2.6	1.1	1.6	1.6	2.0	1.2	1.4	1.5
205.	*	.1	.1	.1	.1	.0	.0	.5	.1	.1	.1	2.7	2.6	2.7	1.2	1.5	2.3	2.4	.9	1.2	1.4

1

JOB: Site 1 No Build 2014 PM - 1NBPM14.DAT RUN: Site 1 No Build 2014 PM

WIND	*	CONCENTRATION																			
ANGLE	*	(PPM)																			
(DEGR)	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	*	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	2.8	2.8	2.9	1.4	2.0	2.5	2.7	.7	1.1	1.3
215.	*	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	3.0	2.8	2.9	1.4	2.1	2.6	2.6	.6	.9	1.2
220.	*	.1	.1	.1	.1	.0	.0	1.0	.1	.1	.1	3.1	2.9	3.0	1.4	2.3	2.7	2.7	.6	.8	1.3
225.	*	.1	.1	.1	.1	.0	.0	1.1	.2	.1	.1	3.3	3.0	3.1	1.6	2.5	2.7	2.7	.6	.8	1.2
230.	*	.1	.1	.1	.1	.0	.0	1.2	.2	.2	.2	3.3	3.3	3.3	1.9	2.7	2.9	2.7	.5	.8	1.2
235.	*	.1	.2	.2	.2	.0	.0	1.4	.3	.2	.2	3.4	3.4	3.3	2.0	2.6	2.6	2.5	.5	.7	1.2
240.	*	.3	.2	.3	.3	.0	.0	1.4	.5	.3	.3	3.7	3.6	3.5	2.2	2.7	2.4	2.3	.3	.7	1.2
245.	*	.3	.5	.4	.4	.0	.0	1.6	.7	.5	.4	3.9	3.8	3.5	2.4	2.7	2.4	2.2	.3	.7	1.2
250.	*	.6	.7	.8	.8	.0	.0	2.1	1.0	.8	.6	4.2	3.9	3.8	2.5	2.4	2.3	2.1	.3	.6	1.0
255.	*	1.0	1.1	1.2	1.3	.0	.0	2.4	1.5	1.3	1.3	4.2	3.8	3.4	2.4	2.3	2.1	2.1	.3	.5	.8
260.	*	1.4	1.7	2.0	2.1	.2	.2	2.9	2.1	1.9	1.9	3.8	3.5	3.2	2.2	2.0	2.0	1.8	.1	.4	.7
265.	*	1.9	2.3	2.7	2.7	.5	.5	3.4	2.7	2.2	2.4	3.3	3.0	2.9	2.1	1.9	1.9	1.8	.1	.3	.5
270.	*	2.2	2.7	3.2	3.3	.6	.7	3.8	2.9	2.6	2.6	2.6	2.5	2.2	1.7	1.7	1.7	1.7	.0	.1	.3
275.	*	2.5	3.2	3.7	3.7	.9	.9	4.0	3.1	2.8	2.9	2.0	1.9	1.8	1.4	1.5	1.7	1.8	.0	.0	.2
280.	*	2.6	3.5	3.9	3.9	1.0	1.3	3.7	2.9	2.8	3.1	1.1	1.3	1.1	1.1	1.3	1.7	1.8	.0	.0	.0
285.	*	2.6	3.6	3.9	3.8	1.3	1.3	3.5	2.8	2.6	3.0	.8	.8	.9	.9	1.3	1.7	1.8	.0	.0	.0
290.	*	2.4	3.4	3.9	3.6	1.3	1.5	3.0	2.4	2.7	2.9	.5	.6	.7	.9	1.4	1.7	1.8	.0	.0	.0
295.	*	2.3	3.5	3.7	3.3	1.5	1.7	2.7	2.1	2.5	2.9	.3	.6	.7	.9	1.4	1.7	1.7	.0	.0	.0
300.	*	2.2	3.4	3.6	3.2	1.4	1.6	2.5	2.2	2.5	2.8	.3	.4	.7	.9	1.4	1.6	1.7	.0	.0	.0
305.	*	2.2	3.4	3.5	2.9	1.5	1.7	2.2	2.0	2.5	2.7	.3	.4	.6	.9	1.5	1.6	1.7	.0	.0	.0
310.	*	2.1	3.3	3.4	2.6	1.5	1.7	2.2	1.9	2.7	2.6	.3	.5	.6	1.0	1.5	1.7	1.8	.0	.0	.0
315.	*	1.9	3.2	3.2	2.5	1.5	1.6	1.8	2.0	2.7	2.5	.3	.5	.6	1.0	1.5	1.7	1.8	.0	.0	.0
320.	*	1.8	3.0	3.1	2.2	1.5	1.7	1.9	2.1	2.6	2.6	.3	.5	.7	1.0	1.4	1.7	1.8	.0	.0	.0
325.	*	1.7	2.9	2.9	2.0	1.5	1.7	1.8	2.1	2.6	2.6	.3	.5	.6	1.0	1.6	1.7	1.9	.0	.0	.0
330.	*	1.7	2.9	2.9	1.9	1.5	1.7	1.8	2.2	2.5	2.6	.4	.5	.6	1.0	1.7	1.8	2.0	.0	.0	.0
335.	*	1.7	2.8	2.8	1.7	1.4	1.5	1.8	2.1	2.5	2.5	.3	.5	.6	1.2	1.7	1.9	2.0	.0	.0	.0
340.	*	1.7	2.8	2.8	1.9	1.2	1.8	2.1	2.4	2.7	2.4	.3	.5	.7	1.3	1.8	2.0	2.2	.0	.0	.0
345.	*	1.7	2.8	2.9	1.8	1.3	1.8	2.1	2.6	2.7	2.5	.3	.5	.7	1.2	1.8	2.0	2.2	.0	.0	.1
350.	*	1.7	2.9	2.9	1.7	1.3	1.9	2.3	2.8	2.7	2.5	.2	.4	.6	1.2	1.9	2.1	2.3	.1	.1	.1
355.	*	1.7	2.9	2.9	2.0	1.2	2.0	2.5	2.8	2.7	2.3	.1	.3	.6	1.2	1.9	2.2	2.3	.3	.3	.4
360.	*	1.7	2.9	3.0	2.4	1.8	1.9	2.4	2.6	2.5	2.3	.1	.3	.6	1.2	1.9	2.2	2.3	.5	.6	.8
MAX	*	3.3	4.2	3.9	3.9	2.1	2.0	4.0	3.1	2.8	3.1	4.2	3.9	3.9	2.5	2.7	2.9	2.7	2.5	2.8	3.0
DEGR.	*	70	60	290	280	15	355	275	275	60	280	250	250	105	110	230	230	220	160	130	115

1

JOB: Site 1 No Build 2014 PM - 1NBPM14.DAT RUN: Site 1 No Build 2014 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND	*	CONCENTRATION			
ANGLE	*	(PPM)			
(DEGR)	*	REC21	REC22	REC23	REC24
0.	*	.2	.0	.0	.0
5.	*	.6	.1	.0	.0
10.	*	.8	.1	.0	.0
15.	*	1.0	.3	.1	.0

20.	*	1.4	.5	.2	.0
25.	*	1.6	.7	.4	.1
30.	*	1.7	.8	.6	.2
35.	*	1.6	.9	.7	.3
40.	*	1.7	.9	.7	.4
45.	*	1.5	.9	.7	.4
50.	*	1.5	.9	.6	.5
55.	*	1.4	.8	.6	.5
60.	*	1.3	.8	.5	.5
65.	*	1.3	.9	.7	.4
70.	*	1.2	1.1	.8	.6
75.	*	1.3	1.4	1.2	.8
80.	*	1.7	1.6	1.5	1.3
85.	*	2.1	2.2	1.8	1.8
90.	*	2.3	2.3	2.4	2.3
95.	*	2.7	2.6	2.3	2.4
100.	*	2.5	2.5	2.6	2.8
105.	*	2.4	2.4	2.7	2.8
110.	*	2.2	2.2	2.5	2.7
115.	*	1.8	2.3	2.8	2.5
120.	*	1.9	2.2	2.6	2.3
125.	*	1.7	2.2	2.6	2.3
130.	*	1.7	2.3	2.5	2.1
135.	*	1.6	2.3	2.4	2.0
140.	*	1.5	2.4	2.4	2.0
145.	*	1.4	2.3	2.3	1.8
150.	*	1.4	2.4	2.3	1.8
155.	*	1.4	2.3	2.3	1.7
160.	*	1.4	2.3	2.3	1.7
165.	*	1.4	2.3	2.3	1.7
170.	*	1.6	2.3	2.3	1.7
175.	*	1.6	2.3	2.3	1.7
180.	*	1.6	2.3	2.3	1.7
185.	*	1.5	2.3	2.3	1.7
190.	*	1.7	2.3	2.3	1.7
195.	*	1.7	2.3	2.3	1.7
200.	*	1.8	2.3	2.2	1.6
205.	*	1.8	2.3	2.2	1.7

1

JOB: Site 1 No Build 2014 PM - 1NBPM14.DAT RUN: Site 1 No Build 2014 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	1.8	2.3	2.1	1.7
215.	*	2.0	2.4	2.2	1.9
220.	*	2.1	2.4	2.1	1.9
225.	*	2.2	2.4	2.0	1.8
230.	*	2.1	2.4	2.2	1.9
235.	*	2.1	2.7	2.3	2.1
240.	*	2.2	2.6	2.3	2.2
245.	*	2.2	2.7	2.4	2.3
250.	*	2.1	2.6	2.3	2.2
255.	*	2.0	2.6	2.3	2.1
260.	*	1.7	2.4	2.2	2.0
265.	*	1.4	2.1	2.0	1.8
270.	*	.9	1.6	1.5	1.5
275.	*	.6	1.1	1.1	1.1
280.	*	.4	.7	.7	.7
285.	*	.1	.4	.4	.4
290.	*	.0	.2	.2	.2
295.	*	.0	.2	.2	.2
300.	*	.0	.1	.1	.1
305.	*	.0	.1	.1	.1
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.0	.0	.0
335.	*	.0	.0	.0	.0
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.0	.0	.0
MAX	*	2.7	2.7	2.8	2.8
DEGR.	*	95	235	115	100

THE HIGHEST CONCENTRATION IS 4.20 PPM AT 60 DEGREES FROM REC2 .
THE 2ND HIGHEST CONCENTRATION IS 4.20 PPM AT 250 DEGREES FROM REC11.
THE 3RD HIGHEST CONCENTRATION IS 4.00 PPM AT 275 DEGREES FROM REC7 .

```
Site 1 No Build 2030 PM - 1NBPM30.DAT   60.0321.0.0000.000240.30480000    1
1
SE MID S                    650.     1369.       5.0
SE 164 S                    792.     1375.       5.0
SE 82 S                     874.     1379.       5.0
SE CNR                      960.     1383.       5.0
SE 82 E                     947.     1304.       5.0
NE 82 E                    1016.     1306.       5.0
NE CNR                     1022.     1387.       5.0
NE 82 N                    1094.     1391.       5.0
NE 164 N                   1175.     1396.       5.0
NE MID N                   1298.     1405.       5.0
NW MID N                   1318.     1496.       5.0
NW 164 N                   1218.     1493.       5.0
NW 82 N                    1136.     1488.       5.0
NW CNR                     1054.     1503.       5.0
NW 82 W                    1043.     1586.       5.0
NW 164 W                   1057.     1667.       5.0
NW MID W                   1083.     1784.       5.0
SW MID W                   1024.     1777.       5.0
SW 164 W                    994.     1650.       5.0
SW 82 W                     975.     1570.       5.0
SW CNR                      935.     1495.       5.0
SW 82 S                     853.     1474.       5.0
SW 164 S                    771.     1470.       5.0
SW MID S                    631.     1463.       5.0
Site 1 No Build 2030 PM                  24  1   0
  1
NB         Rt1 aprch AG     3.  1362.   559.  1390.    3250 9.2  0.  56   30.
  1
NB         Rt1 th+rt AG   559.  1390.  1016.  1410.    2365 9.2  0.  56   30.
  2
NB         Rt1 th+rt AG   936.  1407.   568.  1390.      0.  36   3
       125        45       2.0 2365   84.1 1678 1 3
  1
NB         Rt1 left  AG   552.  1408.  1013.  1432.     885 9.2  0.  32   30.
  2
NB         Rt1 left  AG   934.  1428.   569.  1409.      0.  12   1
       125        84       2.0  885   84.1 1752 1 3
  1
NB         Rt1 departAG  1017.  1410.  1345.  1432.    2655 9.2  0.  56   30.
  1
NB         Rt1 departAG  1345.  1432.  1632.  1463.    2655 9.2  0.  44   30.
  1
NB         Rt1 departAG  1632.  1463.  1999.  1510.    2655 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1995.  1546.  1680.  1502.    1795 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1680.  1502.  1429.  1473.    1795 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1429.  1473.  1228.  1465.    1795 9.2  0.  44   30.
  1
SB         Rt1 th+rt AG  1228.  1465.  1017.  1455.    1790 9.2  0.  56   30.
  2
SB         Rt1 th+rt AG  1066.  1457.  1221.  1465.      0.  36   3
       125        83       2.0 1790   84.1 1653 1 3
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   1
SB        Rt1 left  AG  1165.  1444.  1020.  1436.      10 9.2  0.  32   30.
   2
SB        Rt1 left  AG  1068.  1439.  1161.  1444.      0.  12   1
       125       122       2.0   10   84.1 1752 1 3
   1
SB        Rt1 departAG  1017.  1455.     2.  1403.    2220 9.2  0.  56   30.
   1
EB        Rt28 aprchAG  1191.  2428.  1007.  1603.     845 9.2  0.  32   30.
   1
EB        Rt28 aprchAG  1007.  1603.   961.  1435.     845 9.2  0.  44   30.
   2
EB        Rt28 aprchAG   979.  1500.  1000.  1578.      0.  24   2
       125       108       2.0  845   84.1 1682 1 3
   1
EB        Rt28 deparAG   987.  1425.   978.  1298.      30 9.2  0.  32   30.
   1
WB        Rt28 aprchAG   986.  1300.   997.  1445.     160 9.2  0.  44   30.
   2
WB        Rt28 aprchAG   993.  1391.   986.  1306.      0.  24   2
       125       116       2.0  160   84.1 1706 1 3
   1
WB        Rt28 deparAG   999.  1445.  1024.  1615.    1145 9.2  0.  32   30.
   1
WB        Rt28 deparAG  1024.  1615.  1201.  2425.    1145 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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JOB: Site 1 No Build 2030 PM - 1NBPM30.DAT RUN: Site 1 No Build 2030 PM
DATE: 05/09/2009 TIME: 21:16:21.84

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	3.0	1362.0	559.0	1390.0	557.	87.	AG	3250.	9.2	.0	56.0		
2. NB	Rt1 th+rt	559.0	1390.0	1016.0	1410.0	457.	87.	AG	2365.	9.2	.0	56.0		
3. NB	Rt1 th+rt	936.0	1407.0	742.3	1398.1	194.	267.	AG	244.	100.0	.0	36.0	.77	9.9
4. NB	Rt1 left	552.0	1408.0	1013.0	1432.0	462.	87.	AG	885.	9.2	.0	32.0		
5. NB	Rt1 left	934.0	1428.0	-3267.8	1209.3	4208.	267.	AG	152.	100.0	.0	12.0	1.71	213.7
6. NB	Rt1 depart	1017.0	1410.0	1345.0	1432.0	329.	86.	AG	2655.	9.2	.0	56.0		
7. NB	Rt1 depart	1345.0	1432.0	1632.0	1463.0	289.	84.	AG	2655.	9.2	.0	44.0		
8. NB	Rt1 depart	1632.0	1463.0	1999.0	1510.0	370.	83.	AG	2655.	9.2	.0	44.0		
9. SB	Rt1 aprch	1995.0	1546.0	1680.0	1502.0	318.	262.	AG	1795.	9.2	.0	44.0		
10. SB	Rt1 aprch	1680.0	1502.0	1429.0	1473.0	253.	263.	AG	1795.	9.2	.0	44.0		
11. SB	Rt1 aprch	1429.0	1473.0	1228.0	1465.0	201.	268.	AG	1795.	9.2	.0	44.0		
12. SB	Rt1 th+rt	1228.0	1465.0	1017.0	1455.0	211.	267.	AG	1790.	9.2	.0	56.0		
13. SB	Rt1 th+rt	1066.0	1457.0	2389.2	1525.3	1325.	87.	AG	449.	100.0	.0	36.0	1.19	67.3
14. SB	Rt1 left	1165.0	1444.0	1020.0	1436.0	145.	267.	AG	10.	9.2	.0	32.0		
15. SB	Rt1 left	1068.0	1439.0	1075.9	1439.4	8.	87.	AG	220.	100.0	.0	12.0	-.71	.4
16. SB	Rt1 depart	1017.0	1455.0	2.0	1403.0	1016.	267.	AG	2220.	9.2	.0	56.0		
17. EB	Rt28 aprch	1191.0	2428.0	1007.0	1603.0	845.	193.	AG	845.	9.2	.0	32.0		
18. EB	Rt28 aprch	1007.0	1603.0	961.0	1435.0	174.	195.	AG	845.	9.2	.0	44.0		
19. EB	Rt28 aprch	979.0	1500.0	1718.9	4248.2	2846.	15.	AG	390.	100.0	.0	24.0	2.43	144.6
20. EB	Rt28 depar	987.0	1425.0	978.0	1298.0	127.	184.	AG	30.	9.2	.0	32.0		
21. WB	Rt28 aprch	986.0	1300.0	997.0	1445.0	145.	4.	AG	160.	9.2	.0	44.0		
22. WB	Rt28 aprch	993.0	1391.0	975.2	1175.5	216.	185.	AG	419.	100.0	.0	24.0	1.18	11.0
23. WB	Rt28 depar	999.0	1445.0	1024.0	1615.0	172.	8.	AG	1145.	9.2	.0	32.0		
24. WB	Rt28 depar	1024.0	1615.0	1201.0	2425.0	829.	12.	AG	1145.	9.2	.0	32.0		

JOB: Site 1 No Build 2030 PM - 1NBPM30.DAT RUN: Site 1 No Build 2030 PM
DATE: 05/09/2009 TIME: 21:16:21.84

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 th+rt	125	45	2.0	2365	1678	84.10	1	3
5. NB	Rt1 left	125	84	2.0	885	1752	84.10	1	3
13. SB	Rt1 th+rt	125	83	2.0	1790	1653	84.10	1	3
15. SB	Rt1 left	125	122	2.0	10	1752	84.10	1	3
19. EB	Rt28 aprch	125	108	2.0	845	1682	84.10	1	3
22. WB	Rt28 aprch	125	116	2.0	160	1706	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. SE MID S	650.0	1369.0	5.0
2. SE 164 S	792.0	1375.0	5.0
3. SE 82 S	874.0	1379.0	5.0
4. SE CNR	960.0	1383.0	5.0
5. SE 82 E	947.0	1304.0	5.0
6. NE 82 E	1016.0	1306.0	5.0
7. NE CNR	1022.0	1387.0	5.0
8. NE 82 N	1094.0	1391.0	5.0
9. NE 164 N	1175.0	1396.0	5.0
10. NE MID N	1298.0	1405.0	5.0
11. NW MID N	1318.0	1496.0	5.0
12. NW 164 N	1218.0	1493.0	5.0
13. NW 82 N	1136.0	1488.0	5.0
14. NW CNR	1054.0	1503.0	5.0
15. NW 82 W	1043.0	1586.0	5.0
16. NW 164 W	1057.0	1667.0	5.0
17. NW MID W	1083.0	1784.0	5.0
18. SW MID W	1024.0	1777.0	5.0
19. SW 164 W	994.0	1650.0	5.0
20. SW 82 W	975.0	1570.0	5.0
21. SW CNR	935.0	1495.0	5.0
22. SW 82 S	853.0	1474.0	5.0
23. SW 164 S	771.0	1470.0	5.0
24. SW MID S	631.0	1463.0	5.0

JOB: Site 1 No Build 2030 PM - 1NBPM30.DAT RUN: Site 1 No Build 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
	CONCENTRATION (PPM)																			
0.	1.5	2.3	2.4	2.4	1.5	1.9	2.4	2.5	2.4	2.1	.2	.4	.7	1.2	1.9	2.1	2.2	.5	.6	.8

5.	*	1.5	2.4	2.5	2.5	1.7	1.7	2.2	2.5	2.3	2.1	.2	.3	.6	1.1	1.8	2.0	2.2	.9	1.0	1.2
10.	*	1.6	2.4	2.8	2.7	1.8	1.7	2.3	2.4	2.2	2.1	.2	.2	.5	1.0	1.7	1.9	2.0	1.4	1.5	1.6
15.	*	1.6	2.5	2.9	2.8	1.9	1.7	2.2	2.2	2.1	2.0	.1	.2	.3	.8	1.3	1.7	1.7	1.8	1.9	1.9
20.	*	1.7	2.8	3.0	2.6	2.2	1.1	1.9	2.1	2.0	1.9	.0	.1	.2	.5	1.0	1.2	1.4	2.0	2.2	2.3
25.	*	1.8	2.9	3.2	2.4	1.9	1.0	1.6	2.0	2.0	1.9	.0	.0	.1	.2	.6	.8	1.0	2.1	2.3	2.5
30.	*	1.8	3.0	3.3	2.2	1.6	1.0	1.7	1.9	1.9	2.0	.0	.0	.0	.1	.3	.4	.5	2.2	2.3	2.6
35.	*	2.0	3.0	3.3	1.8	1.6	1.0	1.6	2.0	2.0	2.0	.0	.0	.1	.0	.1	.2	.3	2.1	2.3	2.4
40.	*	2.0	2.9	3.0	1.7	1.7	1.1	1.8	2.0	2.1	2.2	.0	.0	.1	.0	.0	.1	.1	2.0	2.1	2.3
45.	*	2.3	3.0	3.0	1.8	1.8	1.1	1.9	2.2	2.2	2.3	.0	.0	.1	.0	.0	.0	.0	1.9	2.0	2.1
50.	*	2.2	3.1	3.0	1.8	1.9	1.1	2.1	2.3	2.2	2.4	.0	.0	.1	.0	.0	.0	.0	1.8	1.9	2.0
55.	*	2.3	3.1	3.0	2.2	1.9	1.1	2.2	2.4	2.5	2.5	.1	.0	.1	.0	.0	.0	.0	1.8	1.9	2.0
60.	*	2.5	3.5	3.0	2.4	2.0	1.2	2.5	2.5	2.7	2.5	.1	.1	.2	.0	.0	.0	.0	1.7	1.8	1.9
65.	*	2.4	3.5	2.9	2.5	2.0	1.2	2.7	2.7	2.7	2.8	.3	.3	.3	.1	.0	.0	.0	1.7	1.8	1.7
70.	*	2.7	3.3	3.0	2.8	2.0	1.1	2.7	2.8	2.7	2.8	.6	.5	.7	.2	.0	.0	.0	1.6	1.7	1.6
75.	*	2.8	3.2	3.0	3.1	1.9	1.1	2.9	2.9	2.8	2.8	1.2	1.1	1.1	.3	.1	.0	.0	1.6	1.6	1.7
80.	*	2.9	3.1	2.9	3.1	1.7	.7	2.6	2.6	2.6	2.6	1.8	1.6	1.8	1.0	.1	.0	.0	1.5	1.7	1.8
85.	*	2.5	2.8	2.6	2.9	1.5	.6	2.3	2.2	2.1	2.1	2.4	2.1	2.5	1.4	.2	.1	.0	1.5	1.7	1.8
90.	*	2.0	2.4	2.2	2.5	1.2	.3	1.8	1.8	1.8	1.7	2.9	2.6	2.9	1.8	.6	.2	.1	1.7	1.8	2.3
95.	*	1.7	1.6	1.5	2.0	1.0	.1	1.2	1.2	1.2	1.1	3.2	3.2	3.4	2.1	.9	.4	.1	1.7	2.0	2.5
100.	*	1.0	1.2	1.3	1.7	.9	.0	.9	.8	.8	.8	3.4	3.3	3.6	2.2	1.0	.4	.2	1.8	2.2	2.8
105.	*	.8	.9	1.0	1.4	.9	.0	.5	.5	.5	.4	3.4	3.4	3.4	2.2	1.1	.7	.3	1.9	2.2	2.7
110.	*	.5	.6	.7	1.3	.9	.0	.3	.3	.3	.3	3.3	3.2	3.2	2.2	1.0	.7	.4	2.0	2.3	2.8
115.	*	.3	.5	.6	1.2	.9	.0	.2	.2	.2	.2	3.1	3.0	3.0	2.3	1.0	.7	.5	2.1	2.2	2.8
120.	*	.3	.4	.5	1.1	.9	.0	.2	.2	.2	.1	3.0	3.0	3.0	2.1	1.1	.7	.6	1.9	2.3	2.8
125.	*	.2	.4	.5	1.1	.9	.0	.2	.1	.1	.1	2.8	2.7	2.8	2.0	1.1	.7	.5	1.9	2.4	2.5
130.	*	.2	.3	.5	1.1	.9	.0	.1	.1	.1	.1	2.6	2.6	2.7	1.9	1.0	.7	.4	2.1	2.4	2.6
135.	*	.1	.3	.5	1.2	.9	.0	.1	.1	.1	.1	2.6	2.7	2.6	1.9	.9	.8	.5	2.2	2.3	2.6
140.	*	.1	.2	.5	1.2	.9	.0	.1	.1	.1	.1	2.6	2.5	2.5	1.7	1.0	.8	.6	2.2	2.2	2.5
145.	*	.1	.2	.5	1.2	.9	.0	.1	.1	.1	.1	2.3	2.5	2.4	1.6	1.0	.7	.6	2.3	2.3	2.4
150.	*	.1	.2	.4	1.3	.9	.0	.1	.1	.1	.1	2.4	2.3	2.3	1.6	1.0	.7	.5	2.2	2.4	2.5
155.	*	.1	.1	.3	1.3	.9	.0	.1	.1	.1	.1	2.2	2.3	2.3	1.5	.8	.6	.5	2.2	2.4	2.4
160.	*	.0	.0	.2	1.1	.8	.0	.1	.0	.0	.0	2.4	2.4	2.3	1.4	.7	.6	.5	2.2	2.5	2.5
165.	*	.0	.0	.1	1.1	.7	.0	.1	.0	.0	.0	2.4	2.3	2.3	1.3	.7	.6	.4	2.2	2.4	2.3
170.	*	.0	.0	.1	1.0	.6	.1	.2	.0	.0	.0	2.4	2.4	2.3	1.3	.8	.6	.6	2.4	2.7	2.5
175.	*	.0	.0	.0	.8	.4	.2	.3	.0	.0	.0	2.4	2.3	2.4	1.2	.8	.7	.7	2.2	2.4	2.3
180.	*	.0	.0	.0	.7	.3	.3	.4	.0	.0	.0	2.3	2.4	2.4	1.2	1.0	.8	.8	2.5	2.1	2.0
185.	*	.0	.0	.0	.5	.2	.4	.6	.0	.0	.0	2.4	2.4	2.3	1.2	1.0	1.2	1.1	2.1	1.8	2.1
190.	*	.0	.0	.0	.3	.1	.6	.8	.1	.0	.0	2.4	2.3	2.4	1.3	1.1	1.4	1.7	1.8	1.9	1.7
195.	*	.0	.0	.0	.2	.1	.7	1.0	.2	.0	.1	2.4	2.3	2.4	1.3	1.2	1.5	1.8	1.6	1.6	1.5
200.	*	.1	.1	.1	.2	.0	.9	1.1	.3	.1	.1	2.4	2.3	2.5	1.2	1.6	1.6	2.1	1.1	1.3	1.4
205.	*	.1	.1	.1	.2	.0	1.0	1.2	.4	.1	.1	2.4	2.4	2.5	1.3	1.6	2.0	2.3	.8	1.1	1.2

1

JOB: Site 1 No Build 2030 PM - 1NBPM30.DAT RUN: Site 1 No Build 2030 PM

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	*	.1	.1	.1	.1	.0	1.1	1.3	.4	.2	.1	2.4	2.5	2.7	1.3	1.7	2.3	2.3	.7	1.0	1.1
215.	*	.1	.1	.1	.1	.0	1.1	1.4	.5	.2	.1	2.5	2.6	2.8	1.5	1.9	2.4	2.3	.5	.8	1.0
220.	*	.1	.1	.1	.1	.0	1.2	1.3	.5	.3	.1	2.8	2.8	2.9	1.4	2.1	2.3	2.3	.4	.7	1.0
225.	*	.1	.1	.1	.1	.0	1.2	1.3	.6	.3	.2	2.8	2.8	2.8	1.3	2.2	2.6	2.3	.4	.7	.9
230.	*	.1	.1	.1	.1	.0	1.1	1.3	.6	.4	.3	3.1	3.0	2.9	1.8	2.3	2.6	2.3	.4	.8	.9
235.	*	.1	.1	.2	.2	.0	1.1	1.3	.7	.5	.3	3.3	3.1	2.8	1.7	2.2	2.4	2.2	.4	.6	.9
240.	*	.3	.2	.2	.2	.0	1.1	1.3	.8	.5	.5	3.4	3.2	3.2	1.7	2.3	2.1	2.1	.3	.5	.9
245.	*	.3	.4	.4	.4	.0	1.1	1.4	.8	.7	.6	3.3	3.3	2.8	2.2	2.2	2.1	2.0	.3	.5	1.0
250.	*	.6	.4	.6	.6	.0	1.0	1.5	1.0	.8	.8	3.6	3.4	2.9	2.0	2.2	2.1	2.0	.3	.4	.9
255.	*	.8	1.0	1.0	1.1	.0	1.0	2.0	1.5	1.4	1.3	3.8	3.2	2.9	1.9	2.0	1.7	1.9	.3	.3	.8
260.	*	1.2	1.2	1.6	1.6	.2	1.2	2.5	2.0	1.7	1.7	3.4	3.0	2.9	1.9	1.8	1.7	1.6	.1	.3	.6
265.	*	1.6	1.8	2.0	2.1	.4	1.4	2.8	2.3	2.0	2.1	3.0	2.7	2.4	1.7	1.6	1.7	1.6	.1	.3	.4
270.	*	1.9	2.1	2.5	2.5	.5	1.4	3.1	2.4	2.2	2.4	2.2	2.2	2.1	1.5	1.6	1.5	1.5	.0	.1	.3
275.	*	2.1	2.4	2.8	2.9	.7	1.9	3.3	2.5	2.4	2.7	1.8	1.7	1.6	1.3	1.3	1.4	1.5	.0	.0	.2
280.	*	2.2	2.6	3.1	3.0	.9	2.0	3.2	2.6	2.3	2.7	1.0	1.2	1.1	1.0	1.3	1.4	1.5	.0	.0	.0
285.	*	2.3	2.7	3.1	3.0	1.2	2.2	2.9	2.5	2.3	2.6	.8	.7	.9	.9	1.3	1.4	1.5	.0	.0	.0
290.	*	2.1	2.6	3.1	2.9	1.2	2.2	2.6	2.0	2.4	2.6	.5	.5	.7	.8	1.3	1.4	1.5	.0	.0	.0
295.	*	2.0	2.7	2.9	2.7	1.2	2.2	2.4	2.1	2.4	2.5	.3	.4	.6	.8	1.3	1.4	1.5	.0	.0	.0
300.	*	2.0	2.6	2.9	2.6	1.0	2.2	2.0	1.9	2.4	2.4	.2	.4	.6	.8	1.3	1.4	1.5	.0	.0	.0
305.	*	1.9	2.6	2.8	2.4	1.2	2.2	2.1	1.9	2.4	2.4	.3	.4	.6	.8	1.4	1.4	1.5	.0	.0	.0
310.	*	1.9	2.4	2.7	2.2	1.1	2.1	1.9	1.8	2.3	2.4	.3	.5	.5	.9	1.3	1.4	1.5	.0	.0	.0
315.	*	1.6	2.3	2.4	2.0	1.1	2.1	1.5	1.7	2.2	2.3	.3	.6	.5	.9	1.4	1.5	1.7	.0	.0	.0
320.	*	1.6	2.3	2.4	1.9	1.0	2.0	1.7	1.7	2.3	2.3	.3	.5	.8	.9	1.3	1.6	1.7	.0	.0	.0
325.	*	1.5	2.2	2.3	1.7	1.0	2.0	1.7	1.9	2.2	2.3	.3	.5	.6	.9	1.5	1.6	1.7	.0	.0	.0
330.	*	1.5	2.2	2.3	1.6	1.0	1.9	1.6	2.0	2.3	2.2	.3	.5	.6	1.0	1.5	1.6	1.8	.0	.0	.0
335.	*	1.5	2.2	2.2	1.5	1.0	2.0	1.8	2.2	2.4	2.2	.3	.5	.6	1.1	1.5	1.7	1.8	.0	.0	.0
340.	*	1.5	2.2	2.2	1.7	.9	1.9	1.8	2.3	2.4	2.2	.3	.5	.6	1.2	1.7	1.8	2.0	.0	.0	.0
345.	*	1.5	2.2	2.2	1.6	1.0	1.9	2.0	2.3	2.4	2.2	.3	.5	.6	1.1	1.6	2.0	2.1	.0	.0	.0
350.	*	1.5	2.2	2.3	1.6	1.0	1.7	2.1	2.5	2.4	2.3	.3	.5	.6	1.1	1.8	2.0	2.2	.2	.1	.1
355.	*	1.5	2.3	2.3	1.9	1.1	1.8	2.3	2.5	2.5	2.2	.3	.4	.6	1.2	1.8	2.1	2.3	.3	.3	.4
360.	*	1.5	2.3	2.4	2.4	1.5	1.9	2.4	2.5	2.4	2.1	.2	.4	.7	1.2	1.9	2.1	2.2	.5	.6	.8
MAX	*	2.9	3.5	3.3	3.1	2.2	2.2	3.3	2.9	2.8	2.8	3.8	3.4	3.6	2.3	2.3	2.6	2.3	2.5	2.7	2.8
DEGR.	*	80	60	30	80	20	285	275	75	75	65	255	105	100	115	230	225	205	180	170	100

1

JOB: Site 1 No Build 2030 PM - 1NBPM30.DAT RUN: Site 1 No Build 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0.	*	.2	.1	.0	.0
5.	*	.6	.1	.1	.0
10.	*	.9	.2	.1	.1
15.	*	1.1	.6	.2	.1

20.	*	1.4	.7	.3	.2
25.	*	1.6	.7	.5	.2
30.	*	1.6	.9	.7	.4
35.	*	1.6	.9	.7	.4
40.	*	1.5	.8	.7	.5
45.	*	1.4	.8	.7	.5
50.	*	1.3	.9	.6	.4
55.	*	1.2	.7	.5	.4
60.	*	1.2	.7	.4	.3
65.	*	1.2	.9	.6	.4
70.	*	1.2	.9	.8	.6
75.	*	1.3	1.2	1.2	.8
80.	*	1.5	1.6	1.5	1.2
85.	*	2.2	2.1	1.9	1.7
90.	*	2.3	2.5	2.2	2.2
95.	*	2.5	2.6	2.4	2.4
100.	*	2.4	2.3	2.3	2.4
105.	*	2.4	2.4	2.4	2.5
110.	*	1.9	2.1	2.3	2.5
115.	*	1.7	2.0	2.4	2.2
120.	*	1.5	2.0	2.4	2.1
125.	*	1.5	2.1	2.3	2.0
130.	*	1.7	2.2	2.3	1.9
135.	*	1.5	2.1	2.1	1.8
140.	*	1.4	2.1	2.1	1.5
145.	*	1.4	2.2	2.1	1.5
150.	*	1.5	2.1	1.9	1.4
155.	*	1.4	2.1	1.9	1.4
160.	*	1.4	2.0	1.8	1.4
165.	*	1.6	1.9	1.8	1.4
170.	*	1.6	2.0	1.9	1.5
175.	*	1.7	1.9	1.9	1.5
180.	*	1.6	1.9	1.9	1.5
185.	*	1.5	1.9	1.8	1.5
190.	*	1.5	1.8	1.7	1.4
195.	*	1.5	1.8	1.7	1.4
200.	*	1.5	1.8	1.6	1.4
205.	*	1.5	1.8	1.6	1.5

1

JOB: Site 1 No Build 2030 PM - 1NBPM30.DAT RUN: Site 1 No Build 2030 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	1.6	1.9	1.6	1.6
215.	*	1.7	1.9	1.6	1.6
220.	*	1.7	1.9	1.6	1.5
225.	*	1.7	2.0	1.6	1.7
230.	*	1.7	2.0	1.7	1.7
235.	*	1.8	2.3	1.9	2.0
240.	*	1.9	2.1	2.0	1.9
245.	*	1.7	2.2	2.0	2.1
250.	*	1.9	2.3	2.1	2.0
255.	*	1.7	2.2	2.0	2.0
260.	*	1.6	2.0	2.0	1.8
265.	*	1.1	1.8	1.8	1.6
270.	*	.8	1.5	1.3	1.3
275.	*	.5	1.0	.8	.9
280.	*	.3	.7	.7	.6
285.	*	.1	.3	.3	.3
290.	*	.0	.2	.2	.2
295.	*	.0	.2	.1	.1
300.	*	.0	.1	.1	.1
305.	*	.0	.1	.1	.1
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.0	.0	.0
335.	*	.0	.0	.0	.0
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.1	.0	.0
MAX	*	2.5	2.6	2.4	2.5
DEGR.	*	95	95	95	105

THE HIGHEST CONCENTRATION IS 3.80 PPM AT 255 DEGREES FROM REC11.
THE 2ND HIGHEST CONCENTRATION IS 3.60 PPM AT 100 DEGREES FROM REC13.
THE 3RD HIGHEST CONCENTRATION IS 3.50 PPM AT 60 DEGREES FROM REC2 .

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Site 1 Opt 1/2 2014 1B1AM14.DAT         60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.      1116.       5.0
SE 164 S                  857.      1123.       5.0
SE 82 S                   939.      1128.       5.0
SE CNR                   1020.      1134.       5.0
SE 82 E                  1022.      1053.       5.0
NE 82 E                  1075.      1056.       5.0
NE CNR                   1076.      1137.       5.0
NE 82 N                  1156.      1142.       5.0
NE 164 N                 1238.      1146.       5.0
NE MID N                 1341.      1153.       5.0
NW MID N                 1453.      1280.       5.0
NW 164 N                 1316.      1272.       5.0
NW 82 N                  1234.      1269.       5.0
NW CNR                   1138.      1288.       5.0
NW 82 W                  1137.      1385.       5.0
NW 164 W                 1145.      1466.       5.0
NW MID W                 1156.      1626.       5.0
SW MID W                 1072.      1597.       5.0
SW 164 W                 1043.      1434.       5.0
SW 82 W                  1026.      1354.       5.0
SW CNR                    995.      1273.       5.0
SW 82 S                   900.      1248.       5.0
SW 164 S                  819.      1243.       5.0
SW MID S                  692.      1235.       5.0
Site 1 Opt 1/2 2014 AM                       27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    213311.4  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    160611.4  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        57       2.0 1606  102.2 1679 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.     52711.4  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120       107       2.0  527  102.2 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    183011.4  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    183011.4  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    183011.4  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    356811.4  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    356811.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    354811.4  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        65       2.0 3548  102.2 1665 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      2011.4  0.  32   30.
```

```
  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      2011.4  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0   20  102.2 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    413011.4  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    413011.4  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     95811.4  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     95811.4  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     95811.4  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120        94       2.0  958  102.2 1523 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      4511.4  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.      8511.4  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       109       2.0   85  102.2 1694 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.     73911.4  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.     73911.4  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.     73911.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

JOB: Site 1 Opt 1/2 2014 1B1AM14.DAT RUN: Site 1 Opt 1/2 2014 AM
DATE: 05/10/2009 TIME: 09:50:16.72

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	2133.	11.4	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	1606.	11.4	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	817.5	1150.4	167.	267.	AG	391.	100.0	.0	36.0	.65	8.5
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	527.	11.4	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-620.9	1101.1	1606.	267.	AG	489.	100.0	.0	24.0	2.07	81.6
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	1830.	11.4	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	1830.	11.4	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	1830.	11.4	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	3568.	11.4	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	3568.	11.4	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	3548.	11.4	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	6449.0	1496.9	5311.	87.	AG	445.	100.0	.0	36.0	1.67	269.8
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	20.	11.4	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	20.	11.4	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1244.8	1216.3	98.	87.	AG	263.	100.0	.0	12.0	1.43	5.0
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	4130.	11.4	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	4130.	11.4	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	958.	11.4	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	958.	11.4	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	958.	11.4	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1173.6	1924.4	651.	12.	AG	644.	100.0	.0	36.0	1.14	33.1
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	45.	11.4	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	85.	11.4	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.2	1116.0	25.	180.	AG	498.	100.0	.0	24.0	.43	1.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	739.	11.4	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	739.	11.4	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	739.	11.4	.0	32.0		

JOB: Site 1 Opt 1/2 2014 1B1AM14.DAT RUN: Site 1 Opt 1/2 2014 AM
DATE: 05/10/2009 TIME: 09:50:16.72

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	57	2.0	1606	1679	102.20	1	3
5. NB	Rt1 left	120	107	2.0	527	1700	102.20	1	3
12. SB	Rt1th+rt	120	65	2.0	3548	1665	102.20	1	3
15. SB	Rt1 left	120	115	2.0	20	1752	102.20	1	3
21. EB	Rt28 aprch	120	94	2.0	958	1523	102.20	1	3
24. WB	Rt28 aprch	120	109	2.0	85	1694	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

JOB: Site 1 Opt 1/2 2014 1B1AM14.DAT RUN: Site 1 Opt 1/2 2014 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	2.2	3.3	3.5	2.5	1.9	2.0	2.8	2.6	2.3	2.0	.0	.1	.5	1.3	1.5	1.7	2.1	.6	1.0	1.0
5. *	2.2	3.4	3.7	2.7	1.9	1.8	2.5	2.5	2.2	1.9	.0	.0	.2	1.0	1.3	1.4	1.9	1.1	1.5	1.4
10. *	2.2	3.5	3.9	2.8	1.9	1.8	2.5	2.2	2.0	1.9	.0	.0	.1	.7	1.0	.9	1.5	1.5	2.1	2.1
15. *	2.1	3.6	4.0	2.6	1.8	1.3	2.3	2.1	1.9	1.8	.0	.0	.0	.4	.8	.7	1.1	1.9	2.6	2.5
20. *	2.3	3.8	4.1	2.5	1.8	1.2	1.8	2.2	1.9	1.9	.0	.1	.1	.2	.5	.3	.8	2.3	2.9	3.0
25. *	2.4	3.9	4.1	2.4	1.6	1.1	1.7	2.1	1.8	1.9	.0	.1	.1	.1	.1	.1	.4	2.7	3.3	3.3
30. *	2.5	4.2	4.1	2.1	1.4	1.2	1.8	2.2	1.9	1.9	.0	.1	.1	.0	.0	.0	.2	2.9	3.3	3.3
35. *	2.7	4.2	3.8	2.0	1.3	1.1	1.7	2.2	1.9	2.0	.0	.1	.1	.0	.0	.0	.1	2.9	3.2	3.0
40. *	2.9	4.1	3.4	2.0	1.3	1.2	2.0	2.3	2.1	2.1	.0	.1	.1	.0	.0	.0	.1	2.8	3.1	2.9
45. *	3.1	4.3	3.5	2.0	1.2	1.3	2.1	2.4	2.2	2.2	.0	.1	.1	.0	.0	.0	.0	2.7	2.8	3.0
50. *	3.2	4.1	3.1	2.1	1.4	1.3	2.3	2.4	2.2	2.3	.1	.2	.2	.0	.0	.0	.0	2.6	2.7	2.9
55. *	3.4	4.0	3.0	2.3	1.3	1.3	2.4	2.4	2.3	2.4	.1	.2	.2	.0	.0	.0	.0	2.6	2.6	2.7
60. *	3.4	4.2	3.1	2.5	1.3	1.3	2.5	2.5	2.6	2.4	.2	.4	.3	.0	.0	.0	.0	2.5	2.5	2.5
65. *	3.6	3.9	3.0	2.8	1.4	1.4	2.8	2.7	2.6	2.6	.5	.6	.6	.1	.0	.0	.0	2.4	2.4	2.3
70. *	3.4	3.7	3.1	3.2	1.3	1.2	2.8	2.6	2.5	2.8	.8	1.0	1.0	.2	.0	.0	.0	2.3	2.3	2.3
75. *	3.4	3.8	2.9	3.2	1.1	1.2	2.7	2.5	2.8	2.6	1.3	1.6	1.6	.7	.1	.0	.0	2.2	2.4	2.3
80. *	3.2	3.3	2.7	3.2	.9	.9	2.4	2.4	2.5	2.4	2.2	2.6	2.4	1.1	.2	.1	.1	2.3	2.3	2.6
85. *	2.7	2.8	2.3	3.0	.8	.8	2.0	2.0	2.0	2.1	2.9	3.5	3.3	1.6	.6	.2	.1	2.2	2.6	2.8
90. *	2.1	2.0	1.8	2.5	.3	.3	1.5	1.5	1.4	1.5	3.6	4.0	3.9	2.1	.7	.4	.2	2.3	2.9	3.1
95. *	1.3	1.4	1.2	2.0	.2	.2	1.1	1.1	1.0	1.0	4.0	4.4	4.4	2.5	.9	.5	.3	2.4	3.1	3.5
100. *	.7	.8	.6	1.5	.1	.1	.5	.6	.6	.6	4.2	4.6	4.4	2.7	1.1	.7	.4	2.5	3.0	3.7
105. *	.4	.4	.5	1.2	.0	.0	.3	.3	.3	.4	4.3	4.5	4.4	2.8	1.1	.8	.4	2.5	3.3	3.8
110. *	.2	.1	.2	1.0	.0	.0	.1	.2	.2	.2	4.0	4.2	4.1	2.8	1.2	.8	.4	2.7	3.3	3.5
115. *	.1	.1	.2	.8	.0	.0	.1	.1	.1	.1	3.8	4.1	4.0	2.8	1.3	.8	.5	2.7	3.3	3.8
120. *	.1	.1	.1	.8	.0	.0	.0	.1	.1	.1	3.6	3.8	3.8	2.7	1.2	.9	.5	2.8	3.2	3.6
125. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	3.4	3.6	3.4	2.6	1.2	.9	.6	2.7	3.1	3.5
130. *	.1	.1	.1	.6	.0	.0	.0	.1	.1	.1	3.3	3.6	3.3	2.6	1.2	1.0	.7	2.7	3.3	3.5
135. *	.1	.1	.1	.5	.0	.0	.0	.1	.1	.1	3.2	3.3	3.2	2.5	1.2	.8	.5	2.8	3.4	3.4
140. *	.0	.0	.0	.4	.0	.0	.0	.1	.1	.1	3.0	3.0	3.1	2.4	1.3	.8	.5	2.9	3.5	3.4
145. *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.1	2.9	3.0	3.0	2.5	1.3	.8	.5	3.1	3.6	3.4
150. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.8	2.8	2.9	2.3	1.2	.7	.5	3.1	3.5	3.1
155. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.8	2.8	2.9	2.2	1.2	.7	.6	3.1	3.4	2.9
160. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	2.8	2.9	2.1	1.1	.8	.5	3.3	3.3	2.8
165. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	2.8	2.9	2.0	1.1	.8	.5	3.2	3.3	2.7
170. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	2.9	3.1	1.9	1.2	.9	.7	3.2	3.1	2.6
175. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.0	3.1	1.7	1.1	.8	.9	3.3	3.0	2.1
180. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	2.9	3.2	1.6	1.0	.9	1.0	2.8	2.8	2.3
185. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	2.9	3.2	1.4	.8	1.0	1.4	2.6	2.4	2.0
190. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	2.8	3.1	1.3	1.0	1.3	1.7	2.4	2.0	1.9
195. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.8	2.8	3.1	1.4	1.1	1.2	2.3	1.7	1.8	1.7
200. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.8	2.8	3.1	1.5	1.2	1.6	2.8	1.4	1.6	1.7
205. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.9	2.9	3.2	1.3	1.5	1.8	2.8	1.2	1.5	1.6

1

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	.0	.3	.1	.0	.1	3.0	3.0	3.2	1.5	1.6	2.1	3.0	.9	1.2	1.8
215. *	.0	.0	.0	.1	.0	.0	.5	.1	.1	.1	3.0	3.2	3.4	1.6	2.1	2.4	3.1	.7	1.3	1.8
220. *	.1	.1	.1	.1	.0	.0	.6	.1	.1	.1	3.4	3.4	3.4	2.0	2.4	2.4	3.1	.6	.9	1.5
225. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	3.4	3.4	3.6	2.0	2.7	2.8	3.1	.7	1.1	1.6
230. *	.1	.1	.1	.1	.0	.0	.8	.1	.1	.1	3.6	3.7	3.9	2.4	2.7	2.8	3.0	.7	1.1	1.6
235. *	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	3.6	4.0	4.0	2.5	2.8	2.9	2.9	.7	1.1	1.7
240. *	.1	.1	.1	.1	.0	.0	1.0	.2	.1	.1	3.8	4.4	4.0	2.7	2.9	2.7	2.6	.7	1.1	1.6
245. *	.2	.2	.3	.3	.0	.0	1.4	.3	.1	.2	4.2	4.4	4.3	3.0	2.9	2.7	2.5	.5	1.0	1.4
250. *	.4	.4	.5	.6	.0	.0	1.6	.6	.5	.5	4.5	4.8	4.6	3.2	2.8	2.5	2.3	.4	.9	1.4
255. *	.8	.7	.9	1.2	.1	.1	2.1	1.1	.9	.9	4.5	4.9	4.6	3.1	2.6	2.3	2.2	.2	.7	1.2
260. *	1.2	1.2	1.5	1.7	.3	.3	2.6	1.7	1.5	1.4	4.5	4.8	4.3	2.9	2.3	2.0	2.1	.2	.5	1.0
265. *	1.7	1.8	2.2	2.6	.4	.6	3.3	2.5	2.2	2.0	3.9	4.2	3.8	2.6	2.1	1.8	2.0	.1	.3	.7
270. *	2.2	2.4	2.9	3.3	.8	.9	3.7	2.9	2.5	2.3	3.2	3.8	3.2	2.1	1.8	1.8	2.0	.0	.2	.4
275. *	2.5	3.0	3.6	3.7	1.0	1.1	4.2	3.1	2.9	2.8	2.1	2.7	2.4	1.6	1.7	1.6	2.0	.0	.0	.2
280. *	2.8	3.2	4.0	4.0	1.4	1.5	4.0	3.2	2.7	2.7	1.4	1.9	1.7	1.5	1.5	1.6	2.0	.0	.0	.0
285. *	2.9	3.4	4.2	4.2	1.5	1.7	3.9	2.8	2.5	2.8	1.0	1.5	1.4	1.2	1.5	1.6	2.0	.0	.0	.0
290. *	2.9	3.4	4.1	3.7	1.8	1.9	3.5	2.5	2.5	2.6	.6	1.1	1.1	1.2	1.7	1.6	2.0	.0	.0	.0
295. *	2.8	3.4	4.1	3.5	1.8	1.8	3.0	2.4	2.4	2.7	.6	1.0	.9	1.2	1.5	1.6	2.0	.0	.0	.0
300. *	2.7	3.3	3.9	3.3	1.8	1.9	2.7	2.5	2.4	2.9	.3	.6	.9	1.2	1.5	1.6	2.0	.0	.0	.0
305. *	2.5	3.3	3.8	3.0	1.8	1.8	2.3	2.1	2.4	2.7	.3	.6	.8	1.3	1.6	1.6	2.0	.0	.0	.0
310. *	2.5	3.3	3.8	2.8	1.9	1.8	2.1	1.9	2.5	2.5	.3	.6	.9	1.3	1.6	1.7	2.0	.0	.0	.0
315. *	2.3	3.3	3.6	2.6	1.9	1.7	1.9	1.9	2.6	2.5	.3	.5	.9	1.3	1.6	1.8	2.0	.0	.0	.0
320. *	2.3	3.3	3.4	2.3	1.7	1.6	1.8	1.9	2.6	2.4	.3	.5	.9	1.3	1.6	1.8	2.1	.0	.0	.0
325. *	2.2	3.2	3.5	2.1	1.7	1.4	1.6	1.8	2.8	2.3	.4	.6	.8	1.3	1.6	1.7	2.1	.0	.0	.0
330. *	2.2	3.2	3.3	2.0	1.7	1.5	1.7	2.0	2.7	2.2	.4	.6	.8	1.4	1.7	1.8	2.3	.0	.0	.0
335. *	2.1	3.1	3.3	1.9	1.5	1.6	1.9	2.2	2.7	2.2	.2	.6	.8	1.4	1.9	1.8	2.4	.0	.0	.0
340. *	2.1	3.2	3.2	1.9	1.5	1.5	2.0	2.3	2.6	2.2	.1	.6	.7	1.4	1.9	2.0	2.5	.0	.0	.0
345. *	2.2	3.3	3.3	1.8	1.6	1.4	2.2	2.4	2.7	2.3	.1	.5	.7	1.6	1.8	1.9	2.5	.1	.2	.1
350. *	2.2	3.3	3.4	2.0	1.6	1.7	2.4	2.7	2.6	2.1	.1	.4	.7	1.5	1.9	1.9	2.5	.1	.3	.2
355. *	2.2	3.3	3.5	2.2	1.7	1.7	2.5	2.7	2.5	2.0	.0	.2	.6	1.5	1.9	1.7	2.4	.4	.6	.5
360. *	2.2	3.3	3.5	2.5	1.9	2.0	2.8	2.6	2.3	2.0	.0	.1	.5	1.3	1.5	1.7	2.1	.6	1.0	1.0
MAX *	3.6	4.3	4.2	4.2	1.9	2.0	4.2	3.2	2.9	2.9	4.5	4.9	4.6	3.2	2.9	2.9	3.1	3.3	3.6	3.8
DEGR. *	65	45	285	285	5	0	275	280	275	300	260	255	250	250	245	235	215	160	145	115

1

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.4	.0	.0	.0

5.	*	.9	.1	.0	.0
10.	*	1.4	.2	.1	.0
15.	*	1.8	.4	.2	.1
20.	*	2.1	.6	.3	.1
25.	*	2.3	.8	.5	.2
30.	*	2.4	.9	.6	.3
35.	*	2.3	.9	.8	.4
40.	*	2.1	.9	.8	.6
45.	*	2.0	.9	.8	.6
50.	*	1.8	.8	.8	.6
55.	*	1.7	1.0	.8	.7
60.	*	1.5	.9	.9	.8
65.	*	1.6	1.1	1.1	.9
70.	*	1.5	1.5	1.6	1.3
75.	*	1.9	2.1	2.0	1.8
80.	*	2.2	2.8	2.7	2.7
85.	*	2.8	3.2	3.3	3.5
90.	*	3.1	3.8	3.6	3.7
95.	*	3.4	3.9	4.0	4.2
100.	*	3.1	4.0	3.8	4.1
105.	*	3.0	3.4	3.6	4.2
110.	*	2.8	3.3	3.5	4.0
115.	*	2.5	3.3	3.8	3.8
120.	*	2.3	3.0	3.6	3.6
125.	*	2.2	3.2	3.6	3.5
130.	*	2.1	3.1	3.5	3.3
135.	*	2.0	3.2	3.3	3.0
140.	*	1.9	3.2	3.3	2.9
145.	*	1.9	3.1	3.2	2.8
150.	*	1.9	3.1	3.1	2.7
155.	*	1.9	3.1	3.1	2.6
160.	*	1.7	3.1	3.0	2.5
165.	*	1.7	3.2	3.0	2.7
170.	*	1.9	3.2	3.1	2.7
175.	*	2.0	3.3	3.1	2.8
180.	*	2.1	3.2	3.1	2.8
185.	*	2.2	3.2	2.9	2.7
190.	*	2.1	3.1	2.7	2.7
195.	*	2.2	3.1	2.6	2.5
200.	*	2.4	3.2	2.7	2.6
205.	*	2.6	3.2	2.7	2.7

1

PAGE 6

JOB: Site 1 Opt 1/2 2014 1B1AM14.DAT RUN: Site 1 Opt 1/2 2014 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.7	3.2	2.8	2.9
215.	*	2.9	3.3	2.8	2.9
220.	*	2.9	3.2	2.9	2.9
225.	*	3.0	3.3	3.1	3.2
230.	*	3.0	3.4	3.3	3.3
235.	*	3.1	3.5	3.4	3.5
240.	*	3.1	3.8	3.6	3.7
245.	*	3.0	3.8	3.8	3.9
250.	*	3.0	4.0	4.0	3.9
255.	*	2.8	4.0	3.9	3.8
260.	*	2.3	3.7	3.7	3.6
265.	*	1.9	3.4	3.2	3.1
270.	*	1.4	2.6	2.6	2.5
275.	*	.8	1.9	1.8	1.9
280.	*	.4	1.2	1.2	1.3
285.	*	.3	.8	.8	.8
290.	*	.1	.5	.5	.5
295.	*	.0	.3	.3	.4
300.	*	.0	.2	.2	.3
305.	*	.0	.2	.2	.2
310.	*	.0	.2	.2	.2
315.	*	.0	.2	.2	.2
320.	*	.0	.1	.1	.2
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.1
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.2	.0	.0	.0
360.	*	.4	.0	.0	.0
MAX	*	3.4	4.0	4.0	4.2
DEGR.	*	95	100	95	95

THE HIGHEST CONCENTRATION IS 4.90 PPM AT 255 DEGREES FROM REC12.
THE 2ND HIGHEST CONCENTRATION IS 4.60 PPM AT 250 DEGREES FROM REC13.
THE 3RD HIGHEST CONCENTRATION IS 4.50 PPM AT 260 DEGREES FROM REC11.

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Site 1 Opt 1/2 2030 AM 1B1AM30.DAT      60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 1/2 2030 AM                     27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    2255 9.2  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    1725 9.2  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       112        55       2.0 1725   84.1 1679 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.     530 9.2  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       112        99       2.0  530   84.1 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    1935 9.2  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    1935 9.2  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    1935 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    3310 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    3310 9.2  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    3290 9.2  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       112        64       2.0 3290   84.1 1667 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      20 9.2  0.  32   30.
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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      20 9.2  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       112       107       2.0   20   84.1 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    3915 9.2  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    3915 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     950 9.2  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     950 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     950 9.2  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       112        89       2.0  950   84.1 1524 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      45 9.2  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.      85 9.2  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       112       101       2.0   85   84.1 1694 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.     705 9.2  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.     705 9.2  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.     705 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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JOB: Site 1 Opt 1/2 2030 AM 1B1AM30.DAT RUN: Site 1 Opt 1/2 2030 AM
DATE: 05/10/2009 TIME: 16:50:44.50

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	2255.	9.2	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	1725.	9.2	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	811.4	1150.0	173.	267.	AG	332.	100.0	.0	36.0	.72	8.8
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	530.	9.2	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-538.7	1105.7	1524.	267.	AG	399.	100.0	.0	24.0	1.95	77.4
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	1935.	9.2	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	1935.	9.2	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	1935.	9.2	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	3310.	9.2	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	3310.	9.2	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	3290.	9.2	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	6080.5	1478.8	4942.	87.	AG	387.	100.0	.0	36.0	1.68	251.1
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	20.	9.2	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	20.	9.2	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1233.2	1215.8	86.	87.	AG	216.	100.0	.0	12.0	1.33	4.4
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	3915.	9.2	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	3915.	9.2	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	950.	9.2	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	950.	9.2	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	950.	9.2	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1207.7	2090.8	821.	12.	AG	538.	100.0	.0	36.0	1.22	41.7
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	45.	9.2	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	85.	9.2	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.2	1117.8	23.	180.	AG	407.	100.0	.0	24.0	.40	1.2
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	705.	9.2	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	705.	9.2	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	705.	9.2	.0	32.0		

JOB: Site 1 Opt 1/2 2030 AM 1B1AM30.DAT RUN: Site 1 Opt 1/2 2030 AM
DATE: 05/10/2009 TIME: 16:50:44.50

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	112	55	2.0	1725	1679	84.10	1	3
5. NB	Rt1 left	112	99	2.0	530	1700	84.10	1	3
12. SB	Rt1th+rt	112	64	2.0	3290	1667	84.10	1	3
15. SB	Rt1 left	112	107	2.0	20	1752	84.10	1	3
21. EB	Rt28 aprch	112	89	2.0	950	1524	84.10	1	3
24. WB	Rt28 aprch	112	101	2.0	85	1694	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

JOB: Site 1 Opt 1/2 2030 AM 1B1AM30.DAT RUN: Site 1 Opt 1/2 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	1.8	2.7	2.9	2.0	1.4	1.4	2.2	2.3	2.0	1.7	.0	.1	.3	1.2	1.3	1.3	2.0	.6	.9	1.0
5. *	1.8	2.7	3.0	2.3	1.4	1.4	2.2	2.1	1.9	1.7	.0	.1	.2	.9	1.2	1.2	1.8	1.0	1.3	1.3
10. *	1.8	2.8	3.2	2.4	1.5	1.5	1.9	1.9	1.6	1.5	.0	.0	.1	.7	1.0	.9	1.3	1.4	1.8	1.8
15. *	1.9	3.0	3.3	2.4	1.5	1.2	1.7	1.9	1.5	1.5	.0	.0	.1	.3	.8	.6	1.1	1.8	2.3	2.2
20. *	2.0	3.1	3.3	2.1	1.5	1.0	1.5	1.8	1.5	1.5	.0	.0	.0	.2	.2	.4	.7	2.0	2.6	2.5
25. *	2.1	3.3	3.3	1.8	1.3	.9	1.5	1.8	1.6	1.6	.0	.1	.1	.1	.1	.1	.4	2.3	2.7	2.8
30. *	2.2	3.3	3.3	1.7	1.0	.9	1.6	1.8	1.6	1.7	.0	.1	.1	.0	.0	.1	.2	2.4	2.8	2.7
35. *	2.3	3.5	3.1	1.6	1.1	.9	1.4	1.9	1.7	1.7	.0	.1	.1	.0	.0	.0	.2	2.4	2.7	2.6
40. *	2.6	3.6	2.9	1.5	1.0	1.0	1.6	1.9	1.8	1.7	.0	.1	.1	.0	.0	.0	.0	2.3	2.4	2.5
45. *	2.6	3.6	2.8	1.6	1.0	1.1	1.6	1.9	1.8	1.8	.0	.1	.1	.0	.0	.0	.0	2.2	2.4	2.4
50. *	2.5	3.5	2.6	1.8	.9	1.2	1.8	2.0	1.9	1.8	.0	.1	.1	.0	.0	.0	.0	2.1	2.3	2.3
55. *	2.9	3.4	2.6	1.9	1.2	1.0	2.0	1.9	1.8	1.8	.1	.1	.1	.0	.0	.0	.0	2.0	2.2	2.2
60. *	2.9	3.4	2.4	2.2	1.0	1.0	2.1	2.1	2.0	2.0	.2	.3	.3	.0	.0	.0	.0	2.0	2.1	2.1
65. *	2.8	3.3	2.4	2.3	1.0	1.0	2.1	2.1	2.2	2.1	.3	.5	.4	.1	.0	.0	.0	1.9	2.0	2.0
70. *	3.1	3.1	2.5	2.6	1.1	1.1	2.3	2.2	2.1	2.2	.6	.9	.7	.1	.0	.0	.0	1.9	2.0	2.0
75. *	3.0	3.1	2.4	2.7	1.1	.9	2.3	2.1	2.0	2.1	1.0	1.4	1.3	.5	.1	.0	.0	1.8	2.0	2.0
80. *	2.7	2.5	2.2	2.5	.8	.8	2.1	2.0	1.9	2.1	1.8	1.9	1.9	.8	.2	.1	.0	1.8	1.9	2.1
85. *	2.2	2.3	1.8	2.3	.8	.8	1.6	1.7	1.7	1.6	2.5	2.9	2.6	1.3	.4	.2	.1	1.9	2.0	2.5
90. *	1.7	1.5	1.6	2.0	.2	.2	1.3	1.3	1.2	1.4	3.0	3.3	3.1	1.7	.6	.4	.2	2.0	2.3	2.7
95. *	1.2	.9	1.0	1.5	.1	.1	.9	.9	.9	.8	3.3	3.6	3.6	2.1	.7	.5	.2	2.0	2.5	2.9
100. *	.6	.5	.5	1.1	.1	.1	.4	.4	.5	.4	3.5	3.6	3.5	2.2	.9	.6	.3	2.2	2.5	3.0
105. *	.3	.3	.3	1.0	.0	.0	.3	.3	.3	.3	3.3	3.7	3.7	2.3	1.0	.6	.4	2.2	2.7	3.1
110. *	.1	.1	.2	.8	.0	.0	.1	.1	.1	.1	3.2	3.5	3.3	2.2	1.0	.7	.4	2.3	2.6	3.0
115. *	.1	.1	.1	.7	.0	.0	.1	.1	.1	.1	3.1	3.4	3.1	2.3	1.1	.8	.3	2.4	2.7	3.0
120. *	.1	.1	.1	.6	.0	.0	.0	.1	.1	.1	2.9	3.1	3.1	2.0	1.0	.7	.4	2.3	2.8	3.1
125. *	.1	.1	.1	.5	.0	.0	.0	.1	.1	.1	2.8	3.0	2.9	2.0	1.0	.7	.4	2.2	2.7	3.0
130. *	.1	.1	.1	.4	.0	.0	.0	.1	.1	.1	2.7	2.7	2.7	2.1	.9	.7	.4	2.4	2.7	2.9
135. *	.0	.0	.0	.4	.0	.0	.0	.1	.1	.1	2.6	2.7	2.7	2.1	.8	.7	.4	2.3	2.7	2.9
140. *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.1	2.5	2.5	2.5	1.9	.9	.7	.4	2.5	2.7	2.9
145. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.4	2.5	2.5	1.8	.9	.6	.4	2.5	2.8	2.7
150. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.2	2.4	2.3	1.8	1.0	.6	.5	2.6	2.9	2.5
155. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.3	2.3	1.8	1.0	.6	.4	2.6	2.7	2.3
160. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.3	2.3	1.7	.8	.6	.4	2.7	2.6	2.3
165. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.3	2.4	1.6	.9	.6	.5	2.7	2.7	2.2
170. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.4	2.5	1.5	.8	.6	.6	2.8	2.6	2.1
175. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.5	2.5	1.4	.8	.7	.7	2.6	2.6	1.7
180. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.5	2.5	1.3	.8	.5	.8	2.3	2.2	1.8
185. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.4	2.6	1.2	.6	.7	.9	2.1	2.0	1.5
190. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.3	2.5	1.0	.8	1.0	1.5	1.8	1.6	1.2
195. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.3	2.3	2.5	1.1	.8	1.0	1.8	1.5	1.5	1.3
200. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.3	2.3	2.5	1.1	1.0	1.3	2.1	1.1	1.3	1.3
205. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.3	2.4	2.6	1.1	1.2	1.5	2.3	1.0	1.1	1.4

1

JOB: Site 1 Opt 1/2 2030 AM 1B1AM30.DAT RUN: Site 1 Opt 1/2 2030 AM

WIND ANGLE (DEGR)*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.5	2.5	2.8	1.2	1.3	2.0	2.6	.9	1.1	1.3
215. *	.0	.0	.0	.0	.0	.0	.3	.1	.0	.1	2.5	2.5	2.8	1.4	1.4	2.0	2.6	.7	1.0	1.3
220. *	.0	.0	.0	.1	.0	.0	.5	.1	.1	.1	2.7	2.8	2.9	1.4	1.9	2.1	2.7	.5	.9	1.4
225. *	.1	.1	.1	.1	.0	.0	.6	.1	.1	.1	2.7	2.9	2.8	1.5	2.0	2.1	2.5	.5	.9	1.4
230. *	.1	.1	.1	.1	.0	.0	.6	.1	.1	.1	2.9	3.0	3.0	1.9	2.1	2.3	2.4	.5	.8	1.2
235. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	2.9	3.2	3.2	2.0	2.3	2.3	2.4	.5	.9	1.2
240. *	.1	.1	.1	.1	.0	.0	.8	.2	.1	.1	3.1	3.3	3.2	2.2	2.4	2.2	2.3	.5	.9	1.2
245. *	.1	.1	.1	.3	.0	.0	1.0	.3	.1	.2	3.4	3.7	3.3	2.4	2.4	2.1	2.2	.5	.7	1.1
250. *	.4	.4	.4	.4	.0	.0	1.2	.5	.4	.3	3.6	4.0	3.7	2.6	2.3	2.1	2.0	.3	.7	1.1
255. *	.7	.7	.9	.9	.1	.1	1.7	.9	.7	.7	3.7	3.8	3.5	2.6	2.1	1.8	1.9	.2	.5	.9
260. *	.9	.9	1.2	1.6	.1	.1	2.3	1.4	1.3	1.0	3.6	3.8	3.6	2.3	2.0	1.7	1.7	.1	.4	.8
265. *	1.4	1.6	1.8	2.0	.4	.5	2.7	1.9	1.6	1.6	3.1	3.3	3.1	2.0	1.7	1.6	1.7	.0	.2	.6
270. *	1.7	2.0	2.5	2.7	.7	.7	3.1	2.5	2.1	2.0	2.2	2.7	2.6	1.6	1.5	1.5	1.7	.0	.2	.3
275. *	2.1	2.5	2.9	3.1	.8	1.0	3.5	2.5	2.4	2.3	1.8	1.9	1.8	1.3	1.5	1.4	1.6	.0	.0	.2
280. *	2.3	2.7	3.3	3.3	1.1	1.1	3.5	2.5	2.1	2.1	1.1	1.4	1.4	1.0	1.2	1.3	1.6	.0	.0	.0
285. *	2.4	2.9	3.5	3.5	1.3	1.4	3.0	2.5	2.1	2.2	.7	1.1	1.2	.9	1.2	1.3	1.6	.0	.0	.0
290. *	2.3	2.9	3.3	3.1	1.4	1.6	2.7	2.0	1.8	2.1	.5	.8	.8	.9	1.2	1.4	1.6	.0	.0	.0
295. *	2.3	2.9	3.4	3.0	1.5	1.5	2.5	1.8	1.9	2.3	.5	.5	.8	.9	1.3	1.4	1.7	.0	.0	.0
300. *	2.3	2.9	3.4	2.8	1.4	1.6	2.3	1.7	2.0	2.0	.3	.6	.7	.9	1.3	1.3	1.7	.0	.0	.0
305. *	2.0	2.7	3.1	2.5	1.5	1.4	1.8	1.7	1.9	2.1	.3	.5	.8	1.0	1.3	1.4	1.7	.0	.0	.0
310. *	2.0	2.8	3.1	2.3	1.5	1.3	1.7	1.6	2.1	2.1	.3	.5	.8	1.1	1.3	1.4	1.7	.0	.0	.0
315. *	1.9	2.8	3.1	2.2	1.5	1.3	1.6	1.5	2.1	1.9	.3	.5	.7	1.1	1.2	1.3	1.7	.0	.0	.0
320. *	1.9	2.8	2.8	1.8	1.5	1.2	1.4	1.7	2.3	1.9	.3	.5	.6	1.1	1.3	1.4	1.7	.0	.0	.0
325. *	1.9	2.8	2.8	1.8	1.3	1.1	1.3	1.6	2.3	1.9	.3	.5	.6	1.1	1.4	1.4	1.9	.0	.0	.0
330. *	1.8	2.7	2.8	1.6	1.3	1.2	1.4	1.6	2.1	1.9	.3	.5	.6	1.2	1.4	1.5	1.9	.0	.0	.0
335. *	1.8	2.7	2.6	1.4	1.2	1.1	1.4	1.8	2.2	1.8	.2	.5	.5	1.3	1.4	1.5	2.0	.0	.0	.0
340. *	1.8	2.7	2.7	1.6	1.2	1.2	1.8	2.0	2.2	1.8	.2	.5	.6	1.2	1.5	1.6	2.0	.0	.0	.0
345. *	1.8	2.7	2.6	1.6	1.2	1.2	1.9	2.1	2.2	1.8	.1	.4	.6	1.1	1.6	1.6	2.0	.1	.1	.1
350. *	1.8	2.7	2.7	1.6	1.1	1.3	2.0	2.1	2.2	1.8	.1	.3	.6	1.3	1.7	1.7	2.0	.1	.3	.2
355. *	1.8	2.8	2.9	1.8	1.4	1.7	2.1	2.3	2.0	1.8	.1	.2	.5	1.3	1.6	1.6	2.1	.4	.6	.5
360. *	1.8	2.7	2.9	2.0	1.4	1.4	2.2	2.3	2.0	1.7	.0	.1	.3	1.2	1.3	1.3	2.0	.6	.9	1.0
MAX *	3.1	3.6	3.5	3.5	1.5	1.7	3.5	2.5	2.4	2.3	3.7	4.0	3.7	2.6	2.4	2.3	2.7	2.8	2.9	3.1
DEGR. *	70	40	285	285	10	355	275	270	275	275	255	250	105	250	240	230	220	170	150	105

1

JOB: Site 1 Opt 1/2 2030 AM 1B1AM30.DAT RUN: Site 1 Opt 1/2 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0. *	.4	.0	.0	.0

```
   5.  *    .7    .1    .0    .0
  10.  *   1.1    .2    .1    .0
  15.  *   1.5    .3    .1    .0
  20.  *   1.7    .6    .3    .2
  25.  *   2.0    .7    .4    .2
  30.  *   1.9    .8    .6    .3
  35.  *   1.7    .7    .5    .4
  40.  *   1.7    .8    .6    .4
  45.  *   1.7    .8    .6    .5
  50.  *   1.6    .7    .6    .5
  55.  *   1.5    .8    .6    .5
  60.  *   1.2    .7    .7    .6
  65.  *   1.2   1.0   1.0    .7
  70.  *   1.3   1.3   1.0   1.1
  75.  *   1.5   1.6   1.5   1.3
  80.  *   1.8   2.3   2.0   1.8
  85.  *   2.1   2.6   2.6   2.7
  90.  *   2.4   3.0   2.9   3.1
  95.  *   2.6   3.0   3.1   3.4
 100.  *   2.6   2.8   2.9   3.3
 105.  *   2.4   2.7   2.9   3.3
 110.  *   2.0   2.5   2.9   3.3
 115.  *   2.0   2.4   3.0   3.1
 120.  *   1.9   2.4   2.8   2.9
 125.  *   1.6   2.4   2.8   2.7
 130.  *   1.6   2.4   2.9   2.7
 135.  *   1.5   2.5   2.8   2.5
 140.  *   1.4   2.4   2.7   2.4
 145.  *   1.5   2.4   2.7   2.3
 150.  *   1.6   2.6   2.6   2.1
 155.  *   1.4   2.6   2.5   2.1
 160.  *   1.5   2.5   2.5   2.1
 165.  *   1.4   2.6   2.5   2.1
 170.  *   1.6   2.7   2.6   2.2
 175.  *   1.5   2.7   2.5   2.2
 180.  *   1.6   2.7   2.5   2.2
 185.  *   1.6   2.6   2.3   2.2
 190.  *   1.7   2.6   2.3   2.1
 195.  *   1.8   2.5   2.2   2.1
 200.  *   1.9   2.5   2.2   2.1
 205.  *   2.0   2.6   2.2   2.0
1
                                                                                                                                PAGE  6
     JOB: Site 1 Opt 1/2 2030 AM 1B1AM30.DAT                    RUN: Site 1 Opt 1/2 2030 AM

 WIND ANGLE RANGE:   0.-360.

 WIND   * CONCENTRATION
 ANGLE  *      (PPM)
 (DEGR)* REC21 REC22 REC23 REC24
 ------*------------------------
 210.  *   2.2   2.6   2.2   2.2
 215.  *   2.2   2.7   2.3   2.4
 220.  *   2.4   2.7   2.4   2.4
 225.  *   2.4   2.7   2.5   2.5
 230.  *   2.3   2.8   2.6   2.6
 235.  *   2.4   2.9   2.8   2.8
 240.  *   2.5   2.9   2.9   3.0
 245.  *   2.5   2.9   3.1   3.1
 250.  *   2.5   3.1   3.1   3.0
 255.  *   2.3   3.1   3.1   3.0
 260.  *   1.9   3.0   2.9   2.8
 265.  *   1.6   2.5   2.4   2.5
 270.  *   1.1   1.9   1.9   1.9
 275.  *    .6   1.5   1.5   1.5
 280.  *    .3   1.0    .9    .9
 285.  *    .1    .6    .6    .6
 290.  *    .1    .4    .4    .4
 295.  *    .0    .2    .3    .3
 300.  *    .0    .2    .2    .2
 305.  *    .0    .1    .2    .2
 310.  *    .0    .1    .1    .2
 315.  *    .0    .1    .1    .1
 320.  *    .0    .1    .1    .1
 325.  *    .0    .1    .1    .1
 330.  *    .0    .1    .1    .1
 335.  *    .0    .1    .1    .1
 340.  *    .0    .0    .0    .0
 345.  *    .0    .0    .0    .0
 350.  *    .1    .0    .0    .0
 355.  *    .2    .0    .0    .0
 360.  *    .4    .0    .0    .0
 ------*------------------------
 MAX   *   2.6   3.1   3.1   3.4
 DEGR. *   95   250    95    95

 THE HIGHEST CONCENTRATION IS    4.00 PPM AT  250 DEGREES FROM REC12.
 THE 2ND HIGHEST CONCENTRATION IS    3.70 PPM AT  255 DEGREES FROM REC11.
 THE 3RD HIGHEST CONCENTRATION IS    3.70 PPM AT  105 DEGREES FROM REC13.
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Site 1 Opt 1/2 2014 PM 1B1PM14.DAT      60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 1/2 2014 PM                    27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    382311.4  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    280611.4  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        59       2.0 2806  102.2 1678 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.    101211.4  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120        96       2.0 1012  102.2 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    303511.4  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    303511.4  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    303511.4  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    246911.4  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    246911.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    246411.4  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        80       2.0 2464  102.2 1659 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      1011.4  0.  32   30.
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   1
SB          Rt1 left  AG  1240.  1217.  1058.  1208.      1011.4  0.  32   30.
   2
SB          Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0   10  102.2 1752 1 3
   1
SB          Rt1 departAG  1056.  1231.   921.  1221.    287811.4  0.  56   30.
   1
SB          Rt1 departAG   921.  1221.    58.  1172.    287811.4  0.  56   30.
   1
EB          Rt28 aprchAG  1226.  2185.  1087.  1547.     77211.4  0.  32   30.
   1
EB          Rt28 aprchAG  1088.  1547.  1072.  1425.     77211.4  0.  56   30.
   1
EB          Rt28 aprchAG  1072.  1425.  1025.  1202.     77211.4  0.  56   30.
   2
EB          Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120        96       2.0  772  102.2 1523 1 3
   1
EB          Rt28 deparAG  1039.  1194.  1043.  1015.      3011.4  0.  32   30.
   1
WB          Rt28 aprchAG  1052.  1015.  1049.  1190.     16011.4  0.  44   30.
   2
WB          Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       104       2.0  160  102.2 1706 1 3
   1
WB          Rt28 deparAG  1069.  1197.  1121.  1424.    128111.4  0.  44   30.
   1
WB          Rt28 deparAG  1121.  1424.  1126.  1570.    128111.4  0.  32   30.
   1
WB          Rt28 deparAG  1126.  1570.  1257.  2180.    128111.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000 PAGE 1

JOB: Site 1 Opt 1/2 2014 PM 1B1PM14.DAT RUN: Site 1 Opt 1/2 2014 PM
DATE: 05/10/2009 TIME: 10:06:53.73

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	3823.	11.4	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	2806.	11.4	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	-834.0	1055.0	1821.	267.	AG	404.	100.0	.0	36.0	1.17	92.5
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	1012.	11.4	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-1619.9	1045.8	2607.	267.	AG	439.	100.0	.0	24.0	1.79	132.4
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	3035.	11.4	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	3035.	11.4	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	3035.	11.4	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	2469.	11.4	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	2469.	11.4	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	2464.	11.4	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	4866.6	1419.1	3727.	87.	AG	548.	100.0	.0	36.0	1.65	189.3
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	10.	11.4	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	10.	11.4	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1157.4	1212.5	10.	87.	AG	263.	100.0	.0	12.0	.71	.5
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	2878.	11.4	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	2878.	11.4	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	772.	11.4	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	772.	11.4	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	772.	11.4	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1093.8	1534.8	253.	12.	AG	658.	100.0	.0	36.0	1.02	12.8
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	30.	11.4	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	160.	11.4	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.4	1095.5	45.	180.	AG	475.	100.0	.0	24.0	.47	2.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	1281.	11.4	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	1281.	11.4	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	1281.	11.4	.0	32.0		

1 PAGE 2

JOB: Site 1 Opt 1/2 2014 PM 1B1PM14.DAT RUN: Site 1 Opt 1/2 2014 PM
DATE: 05/10/2009 TIME: 10:06:53.73

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	59	2.0	2806	1678	102.20	1	3
5. NB	Rt1 left	120	96	2.0	1012	1700	102.20	1	3
12. SB	Rt1th+rt	120	80	2.0	2464	1659	102.20	1	3
15. SB	Rt1 left	120	115	2.0	10	1752	102.20	1	3
21. EB	Rt28 aprch	120	96	2.0	772	1523	102.20	1	3
24. WB	Rt28 aprch	120	104	2.0	160	1706	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

1 PAGE 3

JOB: Site 1 Opt 1/2 2014 PM 1B1PM14.DAT RUN: Site 1 Opt 1/2 2014 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	3.5	3.6	3.7	2.7	1.9	2.2	2.8	2.7	2.3	2.4	.0	.1	.1	.8	1.0	.7	1.0	.1	.6	.8
5. *	3.5	3.5	3.7	2.8	1.9	1.8	2.9	2.5	2.3	2.3	.0	.0	.1	.6	.9	.6	1.0	.3	.8	1.1
10. *	3.5	3.6	4.0	3.0	2.1	1.6	2.6	2.3	2.1	2.2	.0	.0	.0	.5	.8	.5	.9	.3	1.0	1.4
15. *	3.5	3.7	4.0	2.9	2.4	1.4	2.2	2.1	2.1	2.2	.0	.0	.0	.3	.5	.4	.7	.5	1.6	1.9
20. *	3.5	3.8	4.2	2.9	2.2	1.2	2.0	2.1	2.2	2.2	.0	.0	.0	.1	.3	.2	.6	.7	2.0	2.3
25. *	3.7	4.1	4.2	2.6	1.8	1.2	2.0	2.2	2.3	2.4	.0	.1	.1	.0	.3	.1	.4	.7	2.2	2.6
30. *	3.8	4.1	4.2	2.6	1.8	1.2	1.9	2.3	2.3	2.3	.0	.1	.1	.0	.1	.0	.2	.7	2.5	2.8
35. *	4.0	4.4	4.1	2.2	1.9	1.2	2.0	2.4	2.4	2.5	.0	.1	.1	.0	.0	.0	.2	.7	2.6	2.9
40. *	4.1	4.4	4.0	2.3	1.7	1.3	2.2	2.5	2.5	2.4	.0	.1	.1	.0	.0	.0	.1	.7	2.6	2.9
45. *	4.5	4.7	3.8	2.4	1.6	1.3	2.4	2.6	2.6	2.6	.0	.1	.1	.0	.0	.0	.1	.6	2.7	2.9
50. *	4.7	4.6	3.7	2.6	1.6	1.4	2.5	2.8	2.8	2.8	.0	.1	.1	.0	.0	.0	.1	.6	2.6	2.7
55. *	5.0	4.6	3.5	2.9	1.6	1.4	2.7	2.8	2.8	2.9	.1	.2	.1	.0	.0	.0	.0	.6	2.6	2.7
60. *	4.9	4.4	3.4	3.2	1.7	1.5	2.9	3.0	2.9	3.0	.2	.2	.3	.0	.0	.0	.0	.6	2.6	2.7
65. *	4.9	4.6	3.4	3.3	1.8	1.4	3.1	3.3	3.3	3.2	.3	.6	.5	.1	.0	.0	.0	.6	2.5	2.5
70. *	5.0	4.4	3.7	3.7	1.7	1.6	3.3	3.3	3.3	3.2	.8	.9	.9	.2	.0	.0	.0	.6	2.4	2.5
75. *	4.9	4.3	3.6	4.0	1.5	1.4	3.2	3.4	3.2	3.3	1.4	1.5	1.5	.6	.1	.1	.0	.6	2.4	2.5
80. *	4.4	3.9	3.4	3.9	1.3	1.2	3.2	3.2	3.0	3.0	2.2	2.4	2.3	1.1	.2	.1	.0	.7	2.5	2.6
85. *	3.6	3.6	3.1	3.6	.9	.9	2.7	2.7	2.6	2.5	2.8	3.3	3.1	1.8	.5	.2	.1	.7	2.6	3.1
90. *	2.8	2.5	2.4	3.3	.6	.5	2.1	2.2	2.1	2.1	3.6	3.9	3.9	2.2	.9	.4	.2	.7	2.8	3.5
95. *	1.8	1.7	1.5	2.4	.3	.2	1.3	1.4	1.4	1.4	4.1	4.3	4.3	2.6	1.1	.7	.3	.8	3.3	3.8
100. *	1.1	1.1	1.1	2.0	.2	.1	.8	.9	.8	.9	4.4	4.7	4.6	3.0	1.1	.9	.3	1.0	3.4	3.9
105. *	.6	.7	.7	1.7	.1	.0	.4	.5	.6	.5	4.3	4.5	4.5	2.9	1.3	.9	.5	1.2	3.6	3.9
110. *	.3	.3	.5	1.5	.1	.0	.2	.3	.3	.3	4.1	4.2	4.2	2.8	1.5	.9	.6	1.3	3.5	3.8
115. *	.2	.2	.3	1.4	.1	.0	.1	.2	.2	.2	3.9	4.0	4.1	2.7	1.4	.9	.6	1.3	3.3	3.8
120. *	.1	.1	.2	1.3	.0	.0	.1	.2	.1	.2	3.7	3.9	3.9	2.7	1.3	1.0	.7	1.4	3.5	3.7
125. *	.1	.1	.2	1.2	.0	.0	.0	.1	.1	.1	3.5	3.8	3.7	2.5	1.3	.9	.7	1.1	3.5	3.5
130. *	.1	.1	.1	1.2	.0	.0	.0	.1	.1	.1	3.4	3.6	3.5	2.4	1.4	.9	.5	1.4	3.3	3.5
135. *	.1	.1	.1	1.1	.0	.0	.0	.1	.1	.1	3.3	3.4	3.4	2.4	1.2	1.0	.5	1.4	3.4	3.4
140. *	.1	.1	.1	1.0	.0	.0	.0	.1	.1	.1	3.1	3.2	3.1	2.3	1.2	1.0	.6	1.7	3.5	3.3
145. *	.1	.1	.1	.9	.0	.0	.0	.1	.1	.1	3.1	3.1	3.1	2.3	1.2	.8	.7	1.6	3.5	3.2
150. *	.0	.1	.1	.7	.0	.0	.0	.1	.1	.1	3.0	3.0	3.0	2.2	1.1	.8	.7	1.8	3.6	3.2
155. *	.0	.0	.0	.5	.0	.0	.0	.0	.0	.1	2.9	3.0	2.9	2.0	1.1	.8	.5	2.2	3.4	3.1
160. *	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	3.0	3.0	2.9	2.0	1.2	.8	.7	2.2	3.2	2.8
165. *	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	2.9	3.1	3.1	1.9	1.1	.8	.7	2.4	3.4	2.9
170. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	3.0	3.1	3.0	1.7	1.1	.8	.9	2.3	3.3	2.6
175. *	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	3.0	3.0	3.0	1.6	1.0	1.0	.9	2.5	3.1	2.4
180. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	3.0	3.1	3.0	1.4	1.0	.9	1.2	2.5	3.0	2.3
185. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	3.1	3.1	3.0	1.3	1.1	1.2	1.3	2.4	2.7	2.0
190. *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	3.0	3.1	2.9	1.4	1.2	1.5	1.9	1.9	2.0	1.7
195. *	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	2.9	3.1	2.9	1.3	1.3	1.6	2.4	1.7	1.7	1.6
200. *	.0	.0	.0	.1	.0	.0	.6	.0	.0	.1	2.9	3.1	2.9	1.4	1.7	2.0	2.4	1.5	1.7	1.5
205. *	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	2.9	3.1	3.0	1.2	2.0	2.1	2.6	1.3	1.4	1.7

1

PAGE 4

JOB: Site 1 Opt 1/2 2014 PM 1B1PM14.DAT   RUN: Site 1 Opt 1/2 2014 PM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.1	.1	.1	.1	.0	.0	1.0	.1	.1	.1	3.3	3.2	3.1	1.6	2.0	2.7	2.6	1.1	1.5	1.5
215. *	.1	.1	.1	.1	.0	.1	1.1	.1	.1	.1	3.3	3.3	3.3	1.6	2.1	2.9	2.7	1.0	1.4	1.7
220. *	.1	.1	.1	.1	.0	.1	1.2	.1	.1	.1	3.4	3.4	3.4	2.0	2.6	2.8	2.3	.9	1.2	1.6
225. *	.1	.1	.1	.1	.0	.1	1.3	.1	.1	.1	3.6	3.6	3.4	2.2	2.8	3.1	2.1	.8	1.3	1.7
230. *	.1	.1	.1	.1	.0	.1	1.4	.2	.1	.2	3.6	3.8	3.6	2.4	3.0	3.3	2.0	.8	1.3	1.8
235. *	.1	.1	.1	.2	.0	.1	1.5	.2	.1	.2	3.8	4.0	4.0	2.8	3.4	3.4	1.8	.8	1.3	1.8
240. *	.3	.3	.3	.3	.0	.1	1.6	.5	.2	.2	4.2	4.2	4.2	3.0	3.3	3.2	1.6	.7	1.4	1.8
245. *	.5	.6	.5	.5	.0	.1	1.7	.6	.5	.5	4.3	4.8	4.4	3.1	3.3	3.0	1.4	.6	1.3	1.9
250. *	.9	.9	.9	1.1	.0	.1	2.3	1.1	.8	.8	4.8	4.9	4.5	3.4	3.4	2.9	1.3	.6	1.2	1.8
255. *	1.6	1.7	1.8	1.8	.3	.4	2.9	1.8	1.5	1.5	4.8	4.9	4.7	3.6	3.0	2.5	1.1	.5	.9	1.6
260. *	2.5	2.5	2.5	2.8	.5	.7	3.8	2.5	2.2	2.1	4.6	4.8	4.4	3.1	2.9	2.6	.9	.2	.8	1.2
265. *	3.4	3.5	3.7	3.7	1.0	1.1	4.4	3.5	3.0	2.9	4.1	4.3	3.7	2.9	2.6	2.3	.8	.1	.5	.8
270. *	4.4	4.3	4.4	4.6	1.4	1.6	5.0	3.9	3.5	3.3	3.3	3.6	3.2	2.4	2.3	2.1	.7	.0	.2	.5
275. *	4.8	4.9	5.0	4.9	1.7	2.0	5.2	4.1	3.6	3.5	2.3	2.7	2.5	1.8	2.1	1.9	.7	.0	.1	.3
280. *	5.1	5.2	5.3	5.1	2.0	2.1	5.1	4.0	3.5	3.5	1.5	1.8	1.7	1.5	1.7	1.9	.7	.0	.0	.0
285. *	5.2	5.1	5.3	5.0	2.3	2.4	4.8	3.5	3.3	3.4	1.1	1.2	1.4	1.3	1.7	1.8	.7	.0	.0	.0
290. *	4.9	4.8	4.9	4.7	2.1	2.3	4.3	3.3	2.9	3.0	.7	.9	1.1	1.2	1.7	1.8	.7	.0	.0	.0
295. *	4.7	4.8	4.8	4.2	2.2	2.4	3.8	3.0	2.9	3.1	.5	.8	.9	1.2	1.8	1.8	.7	.0	.0	.0
300. *	4.4	4.5	4.6	3.8	2.1	2.1	3.2	2.5	2.7	3.0	.2	.6	.9	1.3	1.8	1.8	.7	.0	.0	.0
305. *	4.3	4.3	4.3	3.6	2.1	2.2	2.9	2.4	2.5	3.0	.2	.6	.8	1.3	1.7	1.7	.7	.0	.0	.0
310. *	4.1	4.2	4.3	3.3	1.8	2.0	2.5	2.2	2.7	2.9	.1	.6	.8	1.3	1.8	1.7	.7	.0	.0	.0
315. *	4.0	4.0	3.9	2.9	1.9	2.0	2.3	2.3	2.6	2.9	.1	.5	.7	1.3	1.7	1.5	.7	.0	.0	.0
320. *	3.7	3.7	3.7	2.7	1.8	1.9	2.1	2.3	2.7	2.9	.1	.4	.8	1.3	1.7	1.4	.8	.0	.0	.0
325. *	3.6	3.6	3.6	2.3	1.7	1.9	1.9	2.3	2.7	2.5	.1	.4	.7	1.5	1.8	1.3	.8	.0	.0	.0
330. *	3.6	3.6	3.6	2.3	1.7	2.0	2.2	2.4	2.6	2.5	.1	.4	.6	1.5	1.7	1.2	.8	.0	.0	.0
335. *	3.4	3.5	3.5	2.0	1.5	1.9	2.1	2.3	2.6	2.4	.1	.3	.5	1.6	1.7	1.2	.9	.0	.0	.0
340. *	3.4	3.5	3.7	2.2	1.5	2.0	2.3	2.5	2.5	2.4	.1	.2	.5	1.4	1.6	1.0	.9	.0	.0	.0
345. *	3.5	3.5	3.6	2.1	1.4	2.0	2.5	2.5	2.4	2.4	.1	.2	.4	1.2	1.7	.9	.9	.0	.0	.1
350. *	3.5	3.6	3.7	2.2	1.5	2.1	2.6	2.8	2.4	2.5	.0	.1	.3	1.3	1.5	.9	1.0	.0	.2	.1
355. *	3.6	3.7	3.7	2.4	1.7	1.9	2.8	2.8	2.4	2.5	.0	.1	.2	1.0	1.4	.9	1.0	.1	.3	.3
360. *	3.5	3.6	3.7	2.7	1.9	2.2	2.8	2.7	2.3	2.4	.0	.1	.1	.8	1.0	.7	1.0	.1	.6	.8
MAX *	5.2	5.2	5.3	5.1	2.4	2.4	5.2	4.1	3.6	3.5	4.8	4.9	4.7	3.6	3.4	3.4	2.7	2.5	3.6	3.9
DEGR. *	285	280	280	280	15	285	275	275	275	275	250	250	255	255	235	235	215	175	105	100

1

PAGE 5

JOB: Site 1 Opt 1/2 2014 PM 1B1PM14.DAT   RUN: Site 1 Opt 1/2 2014 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.2	.0	.0	.0

5.	*	.6	.0	.0	.0
10.	*	1.0	.0	.0	.0
15.	*	1.3	.2	.0	.0
20.	*	1.7	.3	.1	.1
25.	*	2.0	.4	.3	.1
30.	*	2.2	.6	.4	.1
35.	*	2.1	.6	.4	.2
40.	*	2.1	.9	.5	.3
45.	*	2.1	1.0	.5	.3
50.	*	1.9	1.0	.5	.4
55.	*	1.8	1.0	.6	.4
60.	*	1.6	.9	.9	.5
65.	*	1.5	1.1	1.0	.7
70.	*	1.5	1.2	1.3	1.2
75.	*	1.8	1.7	1.7	1.6
80.	*	2.3	2.6	2.3	2.2
85.	*	2.7	2.9	3.1	3.1
90.	*	3.0	3.4	3.3	3.6
95.	*	3.1	3.6	3.6	3.8
100.	*	2.8	3.3	3.6	3.8
105.	*	2.8	3.2	3.6	3.9
110.	*	2.6	3.0	3.4	3.8
115.	*	2.2	2.7	3.4	3.6
120.	*	2.1	2.8	3.4	3.7
125.	*	2.0	2.8	3.4	3.6
130.	*	1.9	2.8	3.3	3.5
135.	*	1.8	2.9	3.0	3.3
140.	*	1.7	3.0	3.1	3.1
145.	*	1.8	3.0	3.1	3.1
150.	*	1.7	3.0	3.0	3.0
155.	*	1.9	3.0	3.0	3.0
160.	*	1.9	3.0	2.9	2.9
165.	*	1.7	2.9	3.0	3.0
170.	*	1.8	3.0	3.1	3.1
175.	*	1.8	3.1	3.1	3.1
180.	*	2.0	3.1	3.1	3.1
185.	*	1.8	3.0	3.0	3.1
190.	*	2.0	3.0	2.9	3.0
195.	*	2.1	2.9	2.9	2.9
200.	*	2.2	3.0	3.0	3.0
205.	*	2.3	3.1	3.0	3.1

1

JOB: Site 1 Opt 1/2 2014 PM 1B1PM14.DAT RUN: Site 1 Opt 1/2 2014 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.6	3.1	3.1	3.2
215.	*	2.7	3.2	3.1	3.2
220.	*	2.8	3.2	3.3	3.4
225.	*	2.8	3.4	3.5	3.5
230.	*	3.1	3.5	3.5	3.8
235.	*	3.2	3.8	3.8	3.8
240.	*	3.2	4.0	3.9	4.1
245.	*	3.3	4.0	4.1	4.0
250.	*	3.2	4.3	4.3	4.3
255.	*	3.2	4.2	4.1	4.1
260.	*	2.7	3.8	3.8	3.7
265.	*	2.2	3.4	3.4	3.3
270.	*	1.4	2.6	2.4	2.4
275.	*	1.0	1.7	1.7	1.7
280.	*	.4	1.1	1.1	1.1
285.	*	.2	.6	.6	.6
290.	*	.0	.3	.3	.3
295.	*	.0	.2	.2	.2
300.	*	.0	.2	.2	.2
305.	*	.0	.1	.1	.2
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.0	.0	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.0	.0	.0
MAX	*	3.3	4.3	4.3	4.3
DEGR.	*	245	250	250	250

THE HIGHEST CONCENTRATION IS 5.30 PPM AT 280 DEGREES FROM REC3 .
THE 2ND HIGHEST CONCENTRATION IS 5.20 PPM AT 285 DEGREES FROM REC1 .
THE 3RD HIGHEST CONCENTRATION IS 5.20 PPM AT 280 DEGREES FROM REC2 .

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Site 1 Opt 1/2 2030 PM 1B1PM30.DAT      60.0321.0.0000.000240.30480000    1
1
SE MID S                   743.     1116.       5.0
SE 164 S                   857.     1123.       5.0
SE 82 S                    939.     1128.       5.0
SE CNR                    1020.     1134.       5.0
SE 82 E                   1022.     1053.       5.0
NE 82 E                   1075.     1056.       5.0
NE CNR                    1076.     1137.       5.0
NE 82 N                   1156.     1142.       5.0
NE 164 N                  1238.     1146.       5.0
NE MID N                  1341.     1153.       5.0
NW MID N                  1453.     1280.       5.0
NW 164 N                  1316.     1272.       5.0
NW 82 N                   1234.     1269.       5.0
NW CNR                    1138.     1288.       5.0
NW 82 W                   1137.     1385.       5.0
NW 164 W                  1145.     1466.       5.0
NW MID W                  1156.     1626.       5.0
SW MID W                  1072.     1597.       5.0
SW 164 W                  1043.     1434.       5.0
SW 82 W                   1026.     1354.       5.0
SW CNR                     995.     1273.       5.0
SW 82 S                    900.     1248.       5.0
SW 164 S                   819.     1243.       5.0
SW MID S                   692.     1235.       5.0
Site 1 Opt 1/2 2030 PM                       27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    1805 9.2  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    1305 9.2  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       113        53       2.0 1305   84.1 1132 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.      15 9.2  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       113       108       2.0   15   84.1  885 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    1505 9.2  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    1505 9.2  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    1505 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    1005 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    1005 9.2  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    1420 9.2  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       113        50       2.0 1420   84.1 1179 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      65 9.2  0.  32   30.
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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      65 9.2  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       113       105       2.0   65   84.1 1770 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    1320 9.2  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    1320 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.      25 9.2  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.      25 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.      25 9.2  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       113       106       2.0   25   84.1  575 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.     555 9.2  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.     565 9.2  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       113        92       2.0  565   84.1 1620 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.      20 9.2  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.      20 9.2  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.      20 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000 PAGE 1

JOB: Site 1 Opt 1/2 2030 PM 1B1PM30.DAT RUN: Site 1 Opt 1/2 2030 PM
DATE: 05/10/2009 TIME: 17:17:57.60

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		*	X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	*	58.0	1109.0	581.0	1136.0	*	524.	87.	AG	1805.	9.2	.0	56.0		
2. NB	Rt1 thru	*	582.0	1136.0	1083.0	1166.0	*	502.	87.	AG	1305.	9.2	.0	56.0		
3. NB	Rt1 thru	*	984.0	1160.0	856.9	1152.7	*	127.	267.	AG	317.	100.0	.0	36.0	.78	6.5
4. NB	Rt1 left	*	572.0	1167.0	1065.0	1195.0	*	494.	87.	AG	15.	9.2	.0	44.0		
5. NB	Rt1 left	*	983.0	1190.0	965.9	1189.1	*	17.	267.	AG	431.	100.0	.0	24.0	1.00	.9
6. NB	Rt1 depart	*	1085.0	1167.0	1470.0	1188.0	*	386.	87.	AG	1505.	9.2	.0	56.0		
7. NB	Rt1 depart	*	1470.0	1188.0	1784.0	1227.0	*	316.	83.	AG	1505.	9.2	.0	44.0		
8. NB	Rt1 depart	*	1784.0	1227.0	2072.0	1272.0	*	291.	81.	AG	1505.	9.2	.0	44.0		
9. SB	Rt1 aprch	*	2069.0	1311.0	1694.0	1264.0	*	378.	263.	AG	1005.	9.2	.0	44.0		
10. SB	Rt1 aprch	*	1694.0	1264.0	1395.0	1248.0	*	299.	267.	AG	1005.	9.2	.0	44.0		
11. SB	Rt1 th+rt	*	1395.0	1248.0	1057.0	1231.0	*	338.	267.	AG	1420.	9.2	.0	56.0		
12. SB	Rt1th+rt	*	1144.0	1236.0	1273.2	1242.4	*	129.	87.	AG	299.	100.0	.0	36.0	.77	6.6
13. SB	Rt1 left	*	1378.0	1236.0	1241.0	1217.0	*	138.	262.	AG	65.	9.2	.0	32.0		
14. SB	Rt1 left	*	1240.0	1217.0	1058.0	1208.0	*	182.	267.	AG	65.	9.2	.0	32.0		
15. SB	Rt1 left	*	1147.0	1212.0	1254.1	1216.8	*	107.	87.	AG	210.	100.0	.0	12.0	1.05	5.4
16. SB	Rt1 depart	*	1056.0	1231.0	921.0	1221.0	*	135.	266.	AG	1320.	9.2	.0	56.0		
17. SB	Rt1 depart	*	921.0	1221.0	58.0	1172.0	*	864.	267.	AG	1320.	9.2	.0	56.0		
18. EB	Rt28 aprch	*	1226.0	2185.0	1087.0	1547.0	*	653.	192.	AG	25.	9.2	.0	32.0		
19. EB	Rt28 aprch	*	1088.0	1547.0	1072.0	1425.0	*	123.	187.	AG	25.	9.2	.0	56.0		
20. EB	Rt28 aprch	*	1072.0	1425.0	1025.0	1202.0	*	228.	192.	AG	25.	9.2	.0	56.0		
21. EB	Rt28 aprch	*	1043.0	1287.0	1044.1	1292.6	*	6.	12.	AG	635.	100.0	.0	36.0	.53	.3
22. EB	Rt28 depar	*	1039.0	1194.0	1043.0	1015.0	*	179.	179.	AG	555.	9.2	.0	32.0		
23. WB	Rt28 aprch	*	1052.0	1015.0	1049.0	1190.0	*	175.	359.	AG	565.	9.2	.0	44.0		
24. WB	Rt28 aprch	*	1050.0	1141.0	1055.0	527.2	*	614.	180.	AG	367.	100.0	.0	24.0	1.16	31.2
25. WB	Rt28 depar	*	1069.0	1197.0	1121.0	1424.0	*	233.	13.	AG	20.	9.2	.0	44.0		
26. WB	Rt28 depar	*	1121.0	1424.0	1126.0	1570.0	*	146.	2.	AG	20.	9.2	.0	32.0		
27. WB	Rt28 depar	*	1126.0	1570.0	1257.0	2180.0	*	624.	12.	AG	20.	9.2	.0	32.0		

1 PAGE 2

JOB: Site 1 Opt 1/2 2030 PM 1B1PM30.DAT RUN: Site 1 Opt 1/2 2030 PM
DATE: 05/10/2009 TIME: 17:17:57.60

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	*	113	53	2.0	1305	1132	84.10	1	3
5. NB	Rt1 left	*	113	108	2.0	15	885	84.10	1	3
12. SB	Rt1th+rt	*	113	50	2.0	1420	1179	84.10	1	3
15. SB	Rt1 left	*	113	105	2.0	65	1770	84.10	1	3
21. EB	Rt28 aprch	*	113	106	2.0	25	575	84.10	1	3
24. WB	Rt28 aprch	*	113	92	2.0	565	1620	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. SE MID S	*	743.0	1116.0	5.0	*
2. SE 164 S	*	857.0	1123.0	5.0	*
3. SE 82 S	*	939.0	1128.0	5.0	*
4. SE CNR	*	1020.0	1134.0	5.0	*
5. SE 82 E	*	1022.0	1053.0	5.0	*
6. NE 82 E	*	1075.0	1056.0	5.0	*
7. NE CNR	*	1076.0	1137.0	5.0	*
8. NE 82 N	*	1156.0	1142.0	5.0	*
9. NE 164 N	*	1238.0	1146.0	5.0	*
10. NE MID N	*	1341.0	1153.0	5.0	*
11. NW MID N	*	1453.0	1280.0	5.0	*
12. NW 164 N	*	1316.0	1272.0	5.0	*
13. NW 82 N	*	1234.0	1269.0	5.0	*
14. NW CNR	*	1138.0	1288.0	5.0	*
15. NW 82 W	*	1137.0	1385.0	5.0	*
16. NW 164 W	*	1145.0	1466.0	5.0	*
17. NW MID W	*	1156.0	1626.0	5.0	*
18. SW MID W	*	1072.0	1597.0	5.0	*
19. SW 164 W	*	1043.0	1434.0	5.0	*
20. SW 82 W	*	1026.0	1354.0	5.0	*
21. SW CNR	*	995.0	1273.0	5.0	*
22. SW 82 S	*	900.0	1248.0	5.0	*
23. SW 164 S	*	819.0	1243.0	5.0	*
24. SW MID S	*	692.0	1235.0	5.0	*

1 PAGE 3

JOB: Site 1 Opt 1/2 2030 PM 1B1PM30.DAT RUN: Site 1 Opt 1/2 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	.6	1.1	1.4	.7	.8	.7	.7	1.2	1.3	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. *	.6	1.1	1.6	.8	1.0	.6	.6	1.1	1.1	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. *	.6	1.2	1.6	.8	1.3	.6	.6	1.1	1.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. *	.6	1.3	1.6	.8	1.2	.5	.6	1.2	1.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. *	.6	1.3	1.7	.9	1.4	.5	.7	1.2	.9	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25. *	.6	1.4	1.7	.9	1.6	.5	.7	1.2	.9	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30. *	.6	1.5	1.7	.9	1.7	.6	.9	1.3	.7	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35. *	.6	1.5	1.7	1.0	1.9	.6	.9	1.3	.8	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40. *	.6	1.6	1.7	1.1	1.9	.6	1.0	1.2	.8	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45. *	.6	1.6	1.5	1.3	1.9	.6	1.1	1.2	.7	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50. *	.8	1.7	1.6	1.5	1.9	.5	1.1	1.2	.7	.6	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
55. *	.8	1.8	1.7	1.6	1.8	.5	1.3	1.1	.8	.7	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0
60. *	.9	1.9	1.6	1.6	1.8	.4	1.2	1.0	.8	.7	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0
65. *	1.0	2.0	1.5	1.7	1.7	.3	1.1	1.0	.9	.7	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0
70. *	1.4	1.9	1.7	1.7	1.5	.2	1.1	.9	.9	.8	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0
75. *	1.2	1.9	1.5	1.6	1.5	.2	1.1	.9	.8	.9	.1	.2	.2	.0	.0	.0	.0	.0	.0	.0
80. *	1.2	1.5	1.5	1.9	1.4	.2	.9	.9	.7	.9	.3	.3	.4	.1	.0	.0	.0	.0	.0	.0
85. *	1.0	1.3	1.2	1.8	1.4	.0	.6	.6	.6	.6	.4	.4	.6	.3	.0	.0	.0	.0	.0	.0
90. *	.8	.9	1.1	1.6	1.3	.0	.5	.5	.5	.4	.6	.7	.7	.5	.0	.0	.0	.0	.0	.0
95. *	.8	.7	.8	1.4	1.3	.0	.3	.4	.4	.4	.6	.6	1.0	.7	.0	.0	.0	.0	.0	.1
100. *	.5	.6	.7	1.4	1.3	.0	.2	.2	.2	.3	.7	.7	1.1	.9	.0	.0	.0	.0	.0	.2
105. *	.4	.5	.7	1.4	1.2	.0	.1	.2	.1	.1	.7	.8	1.1	.9	.2	.0	.0	.0	.0	.4
110. *	.3	.4	.7	1.4	1.2	.0	.1	.1	.1	.1	.6	.7	1.3	1.0	.3	.0	.0	.0	.0	.3
115. *	.3	.4	.7	1.4	1.2	.0	.1	.1	.1	.1	.6	.7	1.3	1.1	.4	.1	.0	.0	.1	.6
120. *	.3	.3	.6	1.3	1.3	.0	.0	.1	.1	.1	.6	.8	1.2	1.3	.3	.1	.0	.0	.3	.6
125. *	.2	.3	.6	1.3	1.3	.0	.0	.1	.0	.1	.5	.9	1.3	1.3	.3	.1	.0	.0	.3	.6
130. *	.2	.3	.4	1.4	1.3	.0	.0	.0	.0	.1	.5	.7	1.4	1.3	.3	.2	.0	.0	.3	.6
135. *	.2	.3	.4	1.4	1.4	.0	.0	.0	.0	.0	.5	.6	1.4	1.3	.4	.2	.0	.0	.3	.6
140. *	.2	.3	.4	1.5	1.4	.0	.0	.0	.0	.0	.5	.6	1.4	1.3	.5	.3	.0	.1	.4	.6
145. *	.2	.3	.5	1.5	1.3	.0	.0	.0	.0	.0	.5	.6	1.5	1.3	.5	.3	.0	.3	.4	.6
150. *	.1	.3	.5	1.5	1.4	.0	.0	.0	.0	.0	.5	.6	1.5	1.2	.5	.3	.0	.3	.4	.5
155. *	.1	.2	.4	1.6	1.4	.1	.1	.0	.0	.0	.5	.6	1.5	1.2	.6	.3	.2	.3	.4	.4
160. *	.1	.2	.4	1.6	1.4	.2	.2	.0	.0	.0	.5	.6	1.5	1.2	.5	.5	.3	.3	.4	.6
165. *	.0	.1	.4	1.5	1.4	.3	.3	.0	.0	.0	.5	.6	1.6	1.1	.5	.5	.3	.4	.4	.8
170. *	.0	.1	.3	1.4	1.3	.5	.6	.0	.0	.0	.5	.6	1.7	1.0	.6	.6	.4	.4	.4	.7
175. *	.0	.1	.2	1.3	1.1	.9	.8	.1	.0	.0	.5	.6	1.7	1.1	.7	.5	.4	.3	.6	.7
180. *	.0	.0	.1	1.0	.9	1.1	1.1	.2	.0	.0	.6	.6	1.8	1.0	.6	.5	.4	.2	.5	.8
185. *	.0	.0	.1	.8	.6	1.3	1.4	.2	.1	.0	.5	.6	1.9	1.1	.6	.5	.4	.2	.6	.7
190. *	.0	.0	.0	.5	.4	1.4	1.6	.3	.1	.0	.5	.7	2.0	1.0	.6	.5	.2	.3	.5	.6
195. *	.0	.0	.0	.2	.2	1.5	1.7	.4	.2	.1	.5	.7	1.9	.9	.6	.3	.1	.3	.4	.5
200. *	.0	.0	.0	.1	.1	1.5	1.6	.4	.2	.1	.6	.8	2.1	1.0	.5	.5	.2	.3	.4	.6
205. *	.0	.0	.0	.0	.1	1.6	1.6	.5	.3	.1	.6	.9	2.1	1.0	.6	.4	.3	.2	.3	.4

1

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	1.5	1.6	.5	.3	.2	.6	.9	2.1	.9	.5	.4	.2	.2	.4	.4
215. *	.0	.0	.0	.0	.0	1.5	1.5	.5	.3	.2	.6	1.0	2.1	.8	.4	.3	.1	.2	.3	.5
220. *	.0	.0	.0	.0	.0	1.5	1.5	.5	.3	.2	.8	1.2	2.2	.7	.3	.3	.2	.2	.3	.4
225. *	.0	.0	.0	.0	.0	1.5	1.4	.5	.3	.3	.8	1.3	2.2	.8	.3	.3	.1	.1	.2	.4
230. *	.0	.0	.0	.1	.0	1.4	1.5	.5	.4	.3	.8	1.5	2.1	.7	.4	.3	.1	.2	.2	.3
235. *	.1	.1	.1	.1	.0	1.4	1.4	.7	.4	.3	.9	1.6	2.0	.7	.4	.2	.1	.2	.3	.3
240. *	.1	.1	.1	.1	.0	1.3	1.4	.7	.4	.3	.8	1.8	1.9	.8	.4	.3	.1	.2	.2	.4
245. *	.1	.1	.1	.2	.0	1.3	1.4	.8	.4	.3	1.0	1.9	1.9	.8	.3	.2	.1	.1	.2	.4
250. *	.2	.1	.2	.3	.0	1.3	1.5	.9	.5	.4	1.1	1.9	1.9	.7	.3	.2	.0	.0	.2	.3
255. *	.3	.3	.4	.6	.0	1.3	1.6	.8	.6	.6	1.3	1.7	1.6	.7	.2	.1	.0	.0	.2	.2
260. *	.4	.5	.6	.9	.0	1.3	1.9	1.2	.8	.7	1.1	1.8	1.5	.7	.2	.1	.0	.0	.1	.2
265. *	.6	.6	.8	1.1	.1	1.4	2.0	1.3	1.0	.9	1.0	1.5	1.3	.6	.1	.0	.0	.0	.0	.1
270. *	.7	.7	1.0	1.2	.3	1.6	2.0	1.4	1.0	1.0	.6	1.0	.8	.3	.0	.0	.0	.0	.0	.1
275. *	.8	.8	1.3	1.5	.3	1.6	2.2	1.3	1.2	1.3	.4	.7	.7	.2	.0	.0	.0	.0	.0	.0
280. *	.8	.8	1.5	1.6	.3	1.7	2.2	1.2	1.1	1.2	.2	.4	.4	.1	.0	.0	.0	.0	.0	.0
285. *	.9	.8	1.6	1.5	.4	1.8	2.1	1.3	1.0	1.2	.1	.3	.2	.1	.0	.0	.0	.0	.0	.0
290. *	.8	.8	1.5	1.5	.5	1.8	1.9	.9	1.0	1.1	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0
295. *	.8	.7	1.6	1.5	.5	1.8	1.5	.9	1.0	1.2	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0
300. *	.7	.7	1.6	1.5	.5	1.9	1.5	.7	1.0	1.2	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0
305. *	.7	.7	1.7	1.3	.6	2.0	1.3	.8	.9	1.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
310. *	.6	.6	1.6	1.2	.6	2.0	1.2	.8	1.1	1.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315. *	.6	.6	1.6	1.1	.6	2.0	1.0	.6	1.1	1.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320. *	.6	.6	1.6	1.0	.6	2.1	.9	.7	1.2	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325. *	.6	.6	1.5	1.0	.7	1.9	.9	.6	1.1	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
330. *	.6	.7	1.5	.9	.8	1.8	.8	.6	1.2	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
335. *	.6	.7	1.5	.8	.6	1.7	.7	.7	1.2	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
340. *	.6	.8	1.5	.8	.6	1.5	.6	.8	1.2	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
345. *	.6	.8	1.5	.7	.6	1.4	.6	.8	1.2	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
350. *	.6	.9	1.5	.6	.7	1.2	.6	.9	1.2	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
355. *	.6	1.0	1.5	.7	.8	1.2	.7	1.0	1.3	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
360. *	.6	1.1	1.4	.7	.8	.7	.7	1.2	1.3	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MAX *	1.4	2.0	1.7	1.9	1.9	2.1	2.2	1.4	1.3	1.3	1.3	1.9	2.2	1.3	.7	.6	.4	.4	.6	.8
DEGR. *	70	65	40	80	35	320	275	270	0	275	255	245	225	120	175	170	170	165	175	165

1

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.0	.0	.0	.0

5.	*	.0	.0	.0	.0
10.	*	.0	.0	.0	.0
15.	*	.0	.0	.0	.0
20.	*	.0	.0	.0	.0
25.	*	.0	.0	.0	.0
30.	*	.0	.0	.0	.0
35.	*	.0	.0	.0	.0
40.	*	.1	.0	.0	.0
45.	*	.1	.0	.0	.1
50.	*	.1	.0	.0	.1
55.	*	.1	.0	.1	.1
60.	*	.1	.0	.1	.1
65.	*	.2	.1	.1	.1
70.	*	.2	.2	.1	.2
75.	*	.4	.3	.4	.2
80.	*	.4	.5	.5	.4
85.	*	.4	.8	.7	.8
90.	*	.7	.9	.7	1.1
95.	*	1.0	.9	1.0	1.1
100.	*	.9	1.0	1.0	1.2
105.	*	.9	1.0	1.2	1.2
110.	*	.9	1.1	1.2	1.0
115.	*	.8	1.0	1.3	1.0
120.	*	.8	1.1	1.3	1.0
125.	*	.7	1.2	1.2	1.0
130.	*	.4	1.2	1.2	1.0
135.	*	.6	1.2	1.2	.8
140.	*	.7	1.3	1.3	.8
145.	*	.8	1.3	1.2	.8
150.	*	1.0	1.6	1.2	.7
155.	*	.9	1.4	1.0	.7
160.	*	1.1	1.3	1.0	.7
165.	*	1.2	1.3	.8	.6
170.	*	1.4	1.2	.8	.6
175.	*	1.3	1.1	.7	.6
180.	*	1.1	1.1	.6	.6
185.	*	1.1	1.0	.6	.6
190.	*	1.0	1.0	.6	.6
195.	*	1.0	.9	.6	.6
200.	*	.9	.9	.6	.6
205.	*	.9	.8	.6	.6

1

PAGE 6

JOB: Site 1 Opt 1/2 2030 PM 1B1PM30.DAT RUN: Site 1 Opt 1/2 2030 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	.9	.8	.6	.6
215.	*	.9	.7	.6	.7
220.	*	.9	.7	.6	.6
225.	*	.9	.7	.7	.7
230.	*	.8	.7	.7	.8
235.	*	.8	.7	.8	.8
240.	*	.7	.9	.9	.9
245.	*	.9	.9	.8	.8
250.	*	.6	.8	.9	.9
255.	*	.6	.8	.9	.8
260.	*	.6	.8	.7	.8
265.	*	.4	.7	.7	.7
270.	*	.3	.6	.6	.6
275.	*	.1	.4	.4	.4
280.	*	.1	.3	.3	.3
285.	*	.0	.2	.2	.2
290.	*	.0	.1	.1	.1
295.	*	.0	.1	.1	.1
300.	*	.0	.1	.1	.1
305.	*	.0	.1	.1	.1
310.	*	.0	.0	.0	.1
315.	*	.0	.0	.0	.0
320.	*	.0	.0	.0	.0
325.	*	.0	.0	.0	.0
330.	*	.0	.0	.0	.0
335.	*	.0	.0	.0	.0
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.0	.0	.0	.0
360.	*	.0	.0	.0	.0
MAX	*	1.4	1.6	1.3	1.2
DEGR.	*	170	150	115	100

THE HIGHEST CONCENTRATION IS 2.20 PPM AT 275 DEGREES FROM REC7 .
THE 2ND HIGHEST CONCENTRATION IS 2.20 PPM AT 225 DEGREES FROM REC13.
THE 3RD HIGHEST CONCENTRATION IS 2.10 PPM AT 320 DEGREES FROM REC6 .

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Site 1 Opt 3 2014 AM 1B3AM14.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 3 2014 AM                     27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    248111.4  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    185911.4  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        57       2.0 1859  102.2 1679 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.     62211.4  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120       107       2.0  622  102.2 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    205311.4  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    205311.4  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    205311.4  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    364811.4  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    364811.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    362811.4  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        65       2.0 3628  102.2 1668 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      2011.4  0.  32   30.
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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      2011.4  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0   20  102.2 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    428211.4  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    428211.4  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     97311.4  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     97311.4  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     97311.4  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120        95       2.0  973  102.2 1524 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      4511.4  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.      8511.4  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       109       2.0   85  102.2 1694 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.     80711.4  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.     80711.4  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.     80711.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

JOB: Site 1 Opt 3 2014 AM 1B3AM14.DAT RUN: Site 1 Opt 3 2014 AM
DATE: 05/10/2009 TIME: 18:22:23.36

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	2481.	11.4	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	1859.	11.4	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	791.4	1148.9	193.	267.	AG	391.	100.0	.0	36.0	.75	9.8
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	622.	11.4	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-1141.4	1072.3	2128.	267.	AG	489.	100.0	.0	24.0	2.45	108.1
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	2053.	11.4	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	2053.	11.4	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	2053.	11.4	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	3648.	11.4	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	3648.	11.4	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	3628.	11.4	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	6719.0	1510.2	5582.	87.	AG	445.	100.0	.0	36.0	1.71	283.6
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	20.	11.4	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	20.	11.4	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1244.8	1216.3	98.	87.	AG	263.	100.0	.0	12.0	1.43	5.0
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	4282.	11.4	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	4282.	11.4	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	973.	11.4	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	973.	11.4	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	973.	11.4	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1210.8	2105.9	836.	12.	AG	651.	100.0	.0	36.0	1.22	42.5
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	45.	11.4	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	85.	11.4	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.2	1116.0	25.	180.	AG	498.	100.0	.0	24.0	.43	1.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	807.	11.4	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	807.	11.4	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	807.	11.4	.0	32.0		

JOB: Site 1 Opt 3 2014 AM 1B3AM14.DAT RUN: Site 1 Opt 3 2014 AM
DATE: 05/10/2009 TIME: 18:22:23.36

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	57	2.0	1859	1679	102.20	1	3
5. NB	Rt1 left	120	107	2.0	622	1700	102.20	1	3
12. SB	Rt1th+rt	120	65	2.0	3628	1668	102.20	1	3
15. SB	Rt1 left	120	115	2.0	20	1752	102.20	1	3
21. EB	Rt28 aprch	120	95	2.0	973	1524	102.20	1	3
24. WB	Rt28 aprch	120	109	2.0	85	1694	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

JOB: Site 1 Opt 3 2014 AM 1B3AM14.DAT RUN: Site 1 Opt 3 2014 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	*	2.4	3.6	3.7	2.7	1.9	2.1	2.9	3.0	2.5	2.1	.0	.2	.6	1.4	1.8	1.8	2.4	.7	1.1	1.1
5.	*	2.4	3.5	3.8	2.9	2.1	1.9	2.8	2.8	2.3	2.0	.0	.1	.2	1.2	1.5	1.5	2.1	1.2	1.6	1.6
10.	*	2.4	3.6	4.1	3.0	2.2	1.9	2.7	2.4	2.2	2.0	.0	.0	.1	1.0	1.1	1.2	1.9	1.7	2.3	2.2
15.	*	2.3	3.8	4.2	2.9	2.0	1.4	2.3	2.4	2.2	1.9	.0	.0	.1	.6	.9	.8	1.3	2.2	2.7	2.6
20.	*	2.5	4.0	4.3	2.8	1.8	1.5	1.9	2.4	2.1	2.0	.0	.1	.1	.2	.6	.4	.9	2.6	3.2	3.2
25.	*	2.8	4.2	4.4	2.4	1.6	1.1	1.8	2.3	1.9	1.9	.0	.1	.1	.1	.1	.3	.5	2.9	3.5	3.4
30.	*	2.9	4.5	4.3	2.2	1.6	1.2	1.9	2.4	2.0	2.1	.0	.1	.1	.0	.1	.1	.3	3.0	3.4	3.4
35.	*	3.0	4.3	4.0	2.2	1.3	1.1	1.9	2.4	2.0	2.1	.0	.1	.1	.0	.0	.0	.2	3.0	3.3	3.1
40.	*	3.5	4.5	3.5	2.1	1.4	1.2	2.0	2.4	2.2	2.2	.0	.1	.1	.0	.0	.0	.1	2.9	3.2	3.0
45.	*	3.5	4.6	3.6	2.2	1.3	1.4	2.3	2.5	2.3	2.3	.1	.2	.1	.0	.0	.0	.0	2.7	2.9	3.0
50.	*	3.8	4.5	3.3	2.2	1.4	1.4	2.4	2.6	2.3	2.4	.1	.2	.2	.0	.0	.0	.0	2.7	2.8	2.9
55.	*	3.9	4.2	3.1	2.5	1.3	1.4	2.5	2.5	2.4	2.5	.1	.2	.2	.0	.0	.0	.0	2.6	2.7	2.7
60.	*	3.9	4.3	3.2	2.7	1.4	1.4	2.6	2.6	2.8	2.6	.2	.4	.3	.0	.0	.0	.0	2.5	2.6	2.6
65.	*	4.0	4.1	3.2	3.0	1.4	1.4	2.9	3.0	2.7	2.7	.5	.6	.6	.1	.0	.0	.0	2.4	2.4	2.5
70.	*	4.0	3.9	3.3	3.3	1.4	1.2	2.9	2.8	2.6	2.9	.8	1.0	1.0	.4	.0	.0	.0	2.3	2.3	2.3
75.	*	3.9	3.9	3.1	3.4	1.1	1.2	2.8	2.8	2.9	2.7	1.4	1.8	1.6	.7	.1	.1	.0	2.3	2.4	2.4
80.	*	3.5	3.4	2.8	3.4	1.1	.9	2.6	2.6	2.6	2.5	2.2	2.7	2.4	1.1	.2	.1	.1	2.3	2.3	2.6
85.	*	3.1	2.9	2.4	3.1	.8	.8	2.1	2.2	2.1	2.2	2.9	3.5	3.3	1.6	.6	.2	.1	2.3	2.7	2.9
90.	*	2.2	2.2	2.0	2.5	.4	.3	1.6	1.5	1.6	1.6	3.6	4.1	4.1	2.3	.7	.4	.2	2.4	3.0	3.2
95.	*	1.5	1.4	1.3	2.1	.2	.2	1.1	1.2	1.1	1.0	4.1	4.5	4.5	2.7	1.0	.5	.3	2.4	3.2	3.6
100.	*	.7	.8	.7	1.5	.1	.1	.6	.7	.6	.6	4.3	4.6	4.6	2.7	1.2	.7	.4	2.5	3.2	3.8
105.	*	.4	.5	.5	1.2	.0	.0	.3	.4	.3	.4	4.3	4.6	4.5	2.9	1.1	.9	.4	2.5	3.4	3.9
110.	*	.3	.1	.2	1.0	.0	.0	.1	.2	.2	.2	4.1	4.2	4.2	2.8	1.4	.8	.4	2.7	3.3	3.7
115.	*	.1	.1	.2	.8	.0	.0	.1	.1	.1	.1	3.9	4.1	4.0	2.8	1.3	.8	.5	2.8	3.3	3.9
120.	*	.1	.1	.1	.8	.0	.0	.1	.1	.1	.1	3.7	3.9	3.8	2.7	1.2	.9	.6	2.8	3.2	3.7
125.	*	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	3.5	3.6	3.7	2.6	1.2	.9	.6	2.8	3.4	3.6
130.	*	.1	.1	.1	.6	.0	.0	.0	.1	.1	.1	3.4	3.6	3.4	2.6	1.2	1.0	.7	2.8	3.4	3.6
135.	*	.1	.1	.1	.5	.0	.0	.0	.1	.1	.1	3.2	3.3	3.3	2.6	1.3	.9	.5	3.0	3.6	3.7
140.	*	.1	.1	.1	.4	.0	.0	.0	.1	.1	.1	3.1	3.2	3.2	2.4	1.3	.8	.5	3.0	3.6	3.4
145.	*	.0	.0	.0	.3	.0	.0	.0	.1	.1	.1	2.9	3.1	3.1	2.5	1.3	.8	.6	3.1	3.7	3.5
150.	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.9	3.0	3.1	2.3	1.2	.8	.5	3.1	3.7	3.1
155.	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.9	2.9	3.0	2.3	1.2	.8	.6	3.3	3.7	3.1
160.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	2.9	3.0	2.2	1.2	.9	.5	3.3	3.4	2.8
165.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.0	3.1	2.0	1.1	.9	.5	3.3	3.3	2.7
170.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.0	3.2	2.0	1.2	1.0	.8	3.3	3.1	2.7
175.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.1	3.3	1.8	1.1	.8	.9	3.3	3.0	2.5
180.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.1	3.4	1.7	1.1	.9	1.0	2.8	2.8	2.4
185.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.0	3.3	1.5	.8	1.0	1.4	2.6	2.6	2.1
190.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.0	3.2	1.5	1.1	1.3	2.0	2.4	2.0	1.9
195.	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.9	3.0	3.2	1.4	1.1	1.3	2.3	1.7	1.8	1.7
200.	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.9	3.0	3.2	1.5	1.3	1.8	2.8	1.4	1.8	1.8
205.	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1	3.0	3.0	3.3	1.4	1.5	1.8	2.8	1.2	1.7	1.7

1

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	*	.0	.0	.0	.1	.0	.0	.4	.1	.1	.1	3.2	3.2	3.3	1.5	1.7	2.1	3.1	.9	1.4	1.8
215.	*	.1	.1	.1	.1	.0	.0	.5	.1	.1	.1	3.2	3.3	3.4	1.6	2.3	2.5	3.1	.8	1.5	1.8
220.	*	.1	.1	.1	.1	.0	.0	.6	.1	.1	.1	3.4	3.5	3.6	2.1	2.5	2.7	3.2	.7	1.2	1.7
225.	*	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	3.5	3.6	3.6	2.1	2.8	3.0	3.3	.7	1.2	1.6
230.	*	.1	.1	.1	.1	.0	.0	.8	.1	.1	.1	3.6	4.0	3.9	2.4	2.8	2.8	3.1	.8	1.2	1.7
235.	*	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	3.7	4.0	4.0	2.6	3.0	2.9	3.1	.7	1.1	1.7
240.	*	.1	.1	.1	.2	.0	.0	1.0	.2	.1	.2	4.1	4.4	4.2	2.8	3.0	2.7	2.9	.7	1.1	1.8
245.	*	.2	.2	.4	.4	.0	.0	1.4	.4	.3	.2	4.4	4.6	4.5	3.3	3.0	2.7	2.7	.6	1.1	1.5
250.	*	.4	.5	.6	.7	.0	.0	1.6	.8	.6	.5	4.6	5.1	4.8	3.3	2.9	2.7	2.5	.5	.9	1.4
255.	*	.9	1.0	1.1	1.3	.1	.1	2.2	1.4	1.1	.9	4.6	4.9	4.9	3.3	2.7	2.4	2.3	.3	.8	1.3
260.	*	1.3	1.5	1.8	1.9	.4	.4	2.7	1.8	1.5	1.6	4.5	5.0	4.5	3.1	2.4	2.3	2.2	.2	.6	1.0
265.	*	1.9	2.1	2.6	2.9	.6	.6	3.4	2.7	2.3	2.1	4.0	4.6	4.0	2.9	2.3	2.0	2.1	.1	.3	.7
270.	*	2.4	2.9	3.3	3.5	.8	.9	4.0	3.0	2.6	2.6	3.3	3.8	3.5	2.2	2.0	1.9	2.0	.0	.2	.4
275.	*	2.7	3.4	3.8	4.0	1.3	1.2	4.4	3.3	3.0	3.0	2.2	2.7	2.4	1.7	1.8	1.7	2.0	.0	.1	.2
280.	*	3.2	3.7	4.3	4.1	1.5	1.5	4.5	3.3	3.0	3.1	1.4	2.0	1.7	1.5	1.6	1.6	2.0	.0	.0	.0
285.	*	3.2	3.9	4.4	4.4	1.8	1.9	4.2	3.0	2.6	2.9	1.1	1.5	1.4	1.3	1.6	1.6	2.0	.0	.0	.0
290.	*	3.0	3.8	4.4	4.1	2.0	1.9	3.7	2.8	2.8	2.8	.6	1.1	1.1	1.2	1.7	1.7	2.0	.0	.0	.0
295.	*	2.9	3.9	4.3	4.0	2.0	1.9	3.2	2.5	2.6	2.9	.6	1.0	.9	1.2	1.6	1.7	2.0	.0	.0	.0
300.	*	2.8	3.9	4.2	3.6	1.9	1.9	2.9	2.5	2.5	3.0	.3	.7	.9	1.2	1.5	1.6	2.0	.0	.0	.0
305.	*	2.7	3.9	4.1	3.3	1.8	1.8	2.5	2.3	2.6	2.8	.3	.6	.9	1.3	1.6	1.7	2.0	.0	.0	.0
310.	*	2.6	3.8	4.0	3.0	2.0	1.8	2.3	2.0	2.5	2.7	.3	.6	.9	1.3	1.6	1.7	2.0	.0	.0	.0
315.	*	2.4	3.8	3.8	2.8	1.9	1.7	2.0	2.0	2.7	2.6	.3	.5	.9	1.3	1.8	1.8	2.1	.0	.0	.0
320.	*	2.4	3.6	3.5	2.4	1.7	1.6	1.9	1.9	2.7	2.5	.3	.6	.9	1.3	1.7	1.8	2.2	.0	.0	.0
325.	*	2.4	3.5	3.6	2.3	1.7	1.5	1.9	2.1	2.8	2.5	.4	.6	.9	1.3	1.8	1.8	2.3	.0	.0	.0
330.	*	2.3	3.4	3.4	2.1	1.7	1.5	1.8	2.1	2.8	2.4	.4	.7	.9	1.4	1.7	1.8	2.3	.0	.0	.0
335.	*	2.3	3.4	3.4	2.0	1.5	1.6	2.0	2.3	3.0	2.4	.4	.7	.9	1.4	1.9	1.8	2.5	.0	.0	.0
340.	*	2.3	3.4	3.3	1.9	1.5	1.6	2.1	2.4	2.9	2.5	.2	.6	.8	1.5	2.0	2.1	2.5	.0	.0	.0
345.	*	2.3	3.4	3.4	2.0	1.6	1.7	2.3	2.6	3.0	2.5	.2	.6	.8	1.7	1.9	2.0	2.7	.1	.2	.1
350.	*	2.4	3.5	3.5	2.1	1.6	1.9	2.6	2.8	2.8	2.4	.1	.5	.8	1.6	2.0	2.0	2.7	.2	.4	.4
355.	*	2.4	3.5	3.6	2.3	1.8	1.8	2.9	2.8	2.8	2.3	.1	.2	.7	1.5	2.0	2.0	2.6	.4	.7	.6
360.	*	2.4	3.6	3.7	2.7	1.9	2.1	2.9	3.0	2.5	2.1	.0	.2	.6	1.4	1.8	1.8	2.4	.7	1.1	1.1
MAX	*	4.0	4.6	4.4	4.4	2.2	2.1	4.5	3.3	3.0	3.1	4.6	5.1	4.9	3.3	3.0	3.0	3.3	3.3	3.7	3.9
DEGR.	*	65	45	285	285	10	0	280	275	275	280	250	250	255	250	235	225	225	155	145	115

1

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)	*	REC21	REC22	REC23	REC24
0.	*	.5	.1	.0	.0

5.	*	1.0	.1	.0	.0
10.	*	1.5	.3	.1	.0
15.	*	1.9	.5	.3	.1
20.	*	2.2	.7	.4	.2
25.	*	2.5	.9	.6	.3
30.	*	2.6	1.0	.7	.3
35.	*	2.4	1.0	.8	.6
40.	*	2.1	1.0	.9	.7
45.	*	2.0	.9	.8	.6
50.	*	1.8	.9	.8	.6
55.	*	1.7	1.0	.8	.7
60.	*	1.5	.9	.9	.8
65.	*	1.6	1.1	1.2	.9
70.	*	1.5	1.5	1.6	1.4
75.	*	1.9	2.2	2.0	1.9
80.	*	2.2	2.8	2.8	2.8
85.	*	2.8	3.4	3.3	3.6
90.	*	3.1	3.8	3.9	3.9
95.	*	3.4	4.0	4.3	4.4
100.	*	3.3	4.0	4.0	4.3
105.	*	3.1	3.6	3.8	4.2
110.	*	2.8	3.3	3.7	4.3
115.	*	2.5	3.4	3.8	4.1
120.	*	2.3	3.2	3.6	4.0
125.	*	2.3	3.2	3.7	3.9
130.	*	2.2	3.2	3.8	3.7
135.	*	2.1	3.2	3.5	3.4
140.	*	2.2	3.3	3.3	3.1
145.	*	2.0	3.2	3.3	2.9
150.	*	1.9	3.2	3.2	2.8
155.	*	1.9	3.3	3.2	2.7
160.	*	1.9	3.2	3.1	2.6
165.	*	1.9	3.2	3.1	2.7
170.	*	2.0	3.2	3.3	2.8
175.	*	2.0	3.4	3.3	2.8
180.	*	2.1	3.3	3.3	2.8
185.	*	2.2	3.2	3.2	2.8
190.	*	2.2	3.1	3.0	2.7
195.	*	2.3	3.1	2.9	2.6
200.	*	2.5	3.2	2.9	2.7
205.	*	2.6	3.3	2.9	2.8

1

JOB: Site 1 Opt 3 2014 AM 1B3AM14.DAT RUN: Site 1 Opt 3 2014 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.8	3.4	2.9	2.9
215.	*	2.9	3.4	3.0	3.0
220.	*	3.1	3.5	3.1	3.1
225.	*	3.0	3.8	3.4	3.3
230.	*	3.0	3.8	3.5	3.5
235.	*	3.1	3.9	3.5	3.5
240.	*	3.3	3.9	3.8	3.9
245.	*	3.2	4.0	3.9	4.0
250.	*	3.1	4.2	4.3	4.2
255.	*	3.1	4.1	4.1	4.0
260.	*	2.6	3.9	4.0	3.8
265.	*	1.9	3.5	3.3	3.3
270.	*	1.5	2.6	2.6	2.8
275.	*	.9	2.0	2.0	2.0
280.	*	.4	1.2	1.3	1.3
285.	*	.3	.8	.8	.8
290.	*	.1	.5	.5	.5
295.	*	.0	.3	.3	.4
300.	*	.0	.2	.3	.3
305.	*	.0	.2	.2	.2
310.	*	.0	.2	.2	.2
315.	*	.0	.2	.2	.2
320.	*	.0	.1	.2	.2
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.1
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.2	.0	.0	.0
360.	*	.5	.1	.0	.0
MAX	*	3.4	4.2	4.3	4.4
DEGR.	*	95	250	250	95

THE HIGHEST CONCENTRATION IS 5.10 PPM AT 250 DEGREES FROM REC12.
THE 2ND HIGHEST CONCENTRATION IS 4.90 PPM AT 255 DEGREES FROM REC13.
THE 3RD HIGHEST CONCENTRATION IS 4.60 PPM AT 45 DEGREES FROM REC2 .

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Site 1 Opt 3 2030 AM 1B3AM30.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 3 2030 AM                      27  1   0
  1
NB        Rt1 aprch AG    58.  1109.   581.  1136.    2435 9.2  0.  56   30.
  1
NB        Rt1 thru  AG   582.  1136.  1083.  1166.    1820 9.2  0.  56   30.
  2
NB        Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       122        42       2.0 1820   84.1 1679 1 3
  1
NB        Rt1 left  AG   572.  1167.  1065.  1195.     615 9.2  0.  44   30.
  2
NB        Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       122        95       2.0  615   84.1 1700 1 3
  1
NB        Rt1 departAG  1085.  1167.  1470.  1188.    2025 9.2  0.  56   30.
  1
NB        Rt1 departAG  1470.  1188.  1784.  1227.    2025 9.2  0.  44   30.
  1
NB        Rt1 departAG  1784.  1227.  2072.  1272.    2025 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  2069.  1311.  1694.  1264.    3425 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  1694.  1264.  1395.  1248.    3425 9.2  0.  44   30.
  1
SB        Rt1 th+rt AG  1395.  1248.  1057.  1231.    3405 9.2  0.  56   30.
  2
SB        Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       122        63       2.0 3405   84.1 1666 1 3
  1
SB        Rt1 left  AG  1378.  1236.  1241.  1217.      20 9.2  0.  32   30.
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   1
SB         Rt1 left  AG  1240.  1217.  1058.  1208.      20 9.2  0.  32   30.
   2
SB         Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       122       116       2.0   20   84.1 1752 1 3
   1
SB         Rt1 departAG  1056.  1231.   921.  1221.    4010 9.2  0.  56   30.
   1
SB         Rt1 departAG   921.  1221.    58.  1172.    4010 9.2  0.  56   30.
   1
EB         Rt28 aprchAG  1226.  2185.  1087.  1547.     940 9.2  0.  32   30.
   1
EB         Rt28 aprchAG  1088.  1547.  1072.  1425.     940 9.2  0.  56   30.
   1
EB         Rt28 aprchAG  1072.  1425.  1025.  1202.     940 9.2  0.  56   30.
   2
EB         Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       122       111       2.0  940   84.1 1524 1 3
   1
EB         Rt28 deparAG  1039.  1194.  1043.  1015.      45 9.2  0.  32   30.
   1
WB         Rt28 aprchAG  1052.  1015.  1049.  1190.      85 9.2  0.  44   30.
   2
WB         Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       122       113       2.0   85   84.1 1694 1 3
   1
WB         Rt28 deparAG  1069.  1197.  1121.  1424.     805 9.2  0.  44   30.
   1
WB         Rt28 deparAG  1121.  1424.  1126.  1570.     805 9.2  0.  32   30.
   1
WB         Rt28 deparAG  1126.  1570.  1257.  2180.     805 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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JOB: Site 1 Opt 3 2030 AM 1B3AM30.DAT RUN: Site 1 Opt 3 2030 AM
DATE: 05/10/2009 TIME: 18:44:47.99

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	2435.	9.2	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	1820.	9.2	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	845.1	1152.0	139.	267.	AG	233.	100.0	.0	36.0	.58	7.1
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	615.	9.2	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	762.4	1177.8	221.	267.	AG	351.	100.0	.0	24.0	.96	11.2
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	2025.	9.2	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	2025.	9.2	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	2025.	9.2	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	3425.	9.2	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	3425.	9.2	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	3405.	9.2	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	5510.6	1450.8	4372.	87.	AG	349.	100.0	.0	36.0	1.51	222.1
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	20.	9.2	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	20.	9.2	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1164.7	1212.8	18.	87.	AG	214.	100.0	.0	12.0	.71	.9
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	4010.	9.2	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	4010.	9.2	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	940.	9.2	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	940.	9.2	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	940.	9.2	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1560.6	3812.8	2578.	12.	AG	616.	100.0	.0	36.0	3.60	131.0
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	45.	9.2	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	85.	9.2	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.2	1112.7	28.	180.	AG	418.	100.0	.0	24.0	.61	1.4
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	805.	9.2	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	805.	9.2	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	805.	9.2	.0	32.0		

JOB: Site 1 Opt 3 2030 AM 1B3AM30.DAT RUN: Site 1 Opt 3 2030 AM
DATE: 05/10/2009 TIME: 18:44:47.99

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	122	42	2.0	1820	1679	84.10	1	3
5. NB	Rt1 left	122	95	2.0	615	1700	84.10	1	3
12. SB	Rt1th+rt	122	63	2.0	3405	1666	84.10	1	3
15. SB	Rt1 left	122	116	2.0	20	1752	84.10	1	3
21. EB	Rt28 aprch	122	111	2.0	940	1524	84.10	1	3
24. WB	Rt28 aprch	122	113	2.0	85	1694	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

JOB: Site 1 Opt 3 2030 AM 1B3AM30.DAT RUN: Site 1 Opt 3 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	1.3	2.5	2.7	2.3	1.7	1.8	2.5	2.4	2.2	2.0	.3	.5	.6	1.5	1.8	1.9	2.6	.9	1.2	1.2
5. *	1.4	2.6	3.0	2.7	1.8	1.7	2.7	2.3	2.1	1.9	.2	.4	.5	1.4	1.6	1.7	2.5	1.4	1.9	1.7
10. *	1.6	2.6	3.1	2.8	1.9	1.9	2.5	2.2	1.9	1.8	.1	.2	.4	1.0	1.4	1.4	2.1	2.0	2.4	2.3
15. *	1.7	2.9	3.3	2.7	1.8	1.4	2.1	2.0	1.8	1.7	.1	.1	.2	.6	1.2	1.0	1.6	2.5	2.9	2.8
20. *	1.9	3.2	3.5	2.4	1.9	1.0	1.7	1.8	1.7	1.6	.0	.2	.1	.4	.7	.6	1.2	2.7	3.2	3.1
25. *	2.1	3.3	3.3	2.0	1.4	.9	1.6	1.7	1.6	1.6	.0	.1	.1	.2	.2	.3	.7	3.0	3.2	3.3
30. *	2.1	3.2	3.2	1.7	1.1	.8	1.5	1.6	1.6	1.6	.0	.1	.1	.1	.1	.1	.3	3.0	3.3	3.2
35. *	2.3	3.4	3.0	1.7	1.1	.9	1.5	1.6	1.6	1.6	.0	.1	.1	.0	.0	.0	.2	2.8	3.1	3.0
40. *	2.4	3.2	2.7	1.5	1.0	.9	1.4	1.7	1.8	1.8	.0	.1	.1	.0	.0	.0	.1	2.7	2.8	2.8
45. *	2.3	3.2	2.7	1.6	.9	.9	1.5	1.7	1.7	1.7	.0	.1	.1	.0	.0	.0	.0	2.5	2.6	2.7
50. *	2.5	3.2	2.4	1.7	1.1	1.1	1.6	1.9	1.9	1.8	.0	.1	.1	.0	.0	.0	.0	2.5	2.5	2.6
55. *	2.5	3.3	2.5	1.7	1.0	1.0	1.8	2.0	1.9	1.9	.1	.1	.1	.0	.0	.0	.0	2.3	2.5	2.4
60. *	2.6	3.1	2.2	2.0	1.0	1.0	2.0	1.9	2.1	2.0	.2	.3	.3	.0	.0	.0	.0	2.2	2.4	2.3
65. *	2.5	2.8	2.3	2.3	1.1	1.0	1.9	2.1	2.1	2.0	.3	.5	.5	.1	.0	.0	.0	2.1	2.3	2.3
70. *	2.8	2.7	2.3	2.4	1.0	1.0	2.3	2.3	2.1	2.2	.6	.9	.7	.1	.0	.0	.0	2.1	2.1	2.2
75. *	2.7	2.9	2.2	2.6	1.0	.9	2.3	2.1	2.1	2.3	1.1	1.3	1.3	.5	.1	.0	.0	2.1	2.1	2.3
80. *	2.5	2.5	2.2	2.6	.8	.8	2.0	1.9	1.9	2.0	1.7	1.9	1.8	.9	.2	.1	.0	2.0	2.1	2.3
85. *	2.0	2.2	2.0	2.4	.7	.7	1.6	1.6	1.6	1.5	2.4	2.7	2.5	1.3	.4	.2	.1	2.1	2.3	2.6
90. *	1.5	1.4	1.7	2.2	.2	.2	1.3	1.3	1.2	1.3	2.8	3.2	3.1	1.7	.6	.3	.1	2.1	2.5	2.8
95. *	1.0	1.0	.9	1.6	.1	.1	.8	.8	.8	.7	3.3	3.5	3.5	2.0	.6	.4	.2	2.2	2.8	3.0
100. *	.6	.6	.5	1.3	.0	.0	.4	.4	.5	.4	3.3	3.6	3.4	2.1	.9	.5	.2	2.3	2.8	3.2
105. *	.2	.2	.3	1.0	.0	.0	.2	.2	.2	.3	3.3	3.5	3.5	2.3	1.0	.5	.3	2.3	3.0	3.3
110. *	.1	.1	.2	1.0	.0	.0	.1	.2	.1	.1	3.2	3.3	3.2	2.1	1.0	.6	.3	2.4	2.8	3.2
115. *	.1	.1	.2	.8	.0	.0	.1	.1	.1	.1	3.0	3.2	3.0	2.1	1.0	.7	.3	2.5	2.9	3.1
120. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	2.8	3.0	3.0	1.8	.9	.7	.4	2.5	2.9	3.2
125. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	2.7	2.9	2.7	1.9	1.0	.8	.5	2.4	2.9	3.0
130. *	.1	.1	.1	.6	.0	.0	.0	.1	.1	.1	2.6	2.8	2.6	1.9	.9	.7	.4	2.6	2.9	3.0
135. *	.0	.0	.0	.5	.0	.0	.0	.1	.1	.1	2.5	2.7	2.5	1.9	.9	.7	.4	2.6	2.9	3.0
140. *	.0	.0	.0	.3	.0	.0	.0	.1	.0	.1	2.4	2.4	2.5	1.8	1.0	.7	.5	2.7	2.9	2.9
145. *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	2.4	2.4	2.4	1.8	1.0	.6	.5	2.7	3.0	2.9
150. *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	2.2	2.3	2.3	1.5	.9	.6	.5	2.8	3.0	2.7
155. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.2	2.2	2.2	1.6	.9	.7	.4	2.9	3.0	2.5
160. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.2	2.2	2.2	1.5	.8	.6	.5	2.8	2.9	2.6
165. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.3	2.2	1.6	.9	.6	.5	3.1	3.0	2.4
170. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.3	2.3	1.4	.9	.7	.5	3.1	2.9	2.4
175. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.4	2.3	1.3	.8	.7	.7	3.0	2.9	1.9
180. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.3	2.3	1.3	.6	.6	.9	2.5	2.4	1.7
185. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.3	2.3	1.1	.7	.8	1.1	2.3	2.1	1.6
190. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.2	2.3	2.2	1.0	.9	1.2	1.6	1.9	1.9	1.5
195. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.2	2.3	2.2	1.2	.9	1.2	1.9	1.6	1.6	1.4
200. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.2	2.3	2.2	1.1	1.1	1.1	2.2	1.2	1.2	1.3
205. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	2.2	2.3	2.3	1.1	1.1	1.7	2.4	.8	1.1	1.3

1

JOB: Site 1 Opt 3 2030 AM 1B3AM30.DAT RUN: Site 1 Opt 3 2030 AM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1	2.5	2.4	2.4	1.2	1.4	2.1	2.8	.7	1.0	1.3
215. *	.0	.0	.0	.1	.0	.0	.5	.1	.1	.1	2.5	2.5	2.5	1.3	1.5	2.0	2.7	.5	.9	1.2
220. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	2.6	2.6	2.5	1.6	2.0	2.1	2.7	.4	.8	1.2
225. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	2.7	2.7	2.7	1.6	2.2	2.1	2.6	.4	.6	1.2
230. *	.1	.1	.1	.1	.0	.0	.8	.1	.1	.1	2.7	2.8	2.7	1.8	2.3	2.1	2.5	.3	.5	1.1
235. *	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	2.9	3.0	3.0	1.9	2.4	2.3	2.4	.3	.7	1.1
240. *	.1	.1	.1	.1	.0	.0	.9	.2	.1	.1	2.9	3.0	3.1	2.0	2.4	2.2	2.4	.3	.6	.9
245. *	.2	.1	.1	.3	.0	.0	1.1	.3	.1	.2	3.1	3.4	3.2	2.3	2.2	1.9	2.3	.3	.5	.8
250. *	.3	.3	.2	.3	.0	.0	1.2	.3	.3	.3	3.5	3.5	3.5	2.4	2.3	1.8	2.1	.1	.4	.8
255. *	.5	.5	.6	.8	.0	.0	1.7	1.0	.7	.5	3.4	3.5	3.2	2.3	1.9	1.7	2.0	.1	.3	.6
260. *	.6	.8	.8	1.1	.1	.0	2.0	1.2	1.1	.9	3.2	3.4	3.4	2.0	1.8	1.6	1.8	.0	.3	.5
265. *	.9	1.0	1.4	1.5	.2	.3	2.3	1.7	1.6	1.5	2.8	2.8	2.8	1.8	1.6	1.6	1.8	.0	.1	.4
270. *	1.1	1.3	1.8	1.9	.4	.4	2.6	2.0	1.9	1.7	2.2	2.6	2.3	1.5	1.5	1.5	1.9	.0	.1	.2
275. *	1.4	1.5	2.1	2.4	.4	.6	2.8	2.1	2.2	2.0	1.7	2.0	1.9	1.2	1.5	1.5	1.9	.0	.0	.1
280. *	1.6	1.7	2.4	2.5	.7	.8	2.9	2.2	2.0	2.0	1.0	1.4	1.3	1.2	1.4	1.5	1.9	.0	.0	.0
285. *	1.6	1.8	2.7	2.8	.9	.9	2.8	2.2	2.0	2.0	.9	1.1	1.2	1.1	1.4	1.5	1.9	.0	.0	.0
290. *	1.7	1.8	2.6	2.7	1.0	1.2	2.5	1.9	1.6	2.0	.6	1.0	.8	1.1	1.3	1.5	1.9	.0	.0	.0
295. *	1.6	1.8	2.7	2.6	1.1	1.2	2.3	2.0	1.8	2.0	.4	.6	.9	1.1	1.4	1.5	1.9	.0	.0	.0
300. *	1.5	1.9	2.8	2.5	1.2	1.4	2.1	1.8	1.9	2.0	.3	.6	.8	1.1	1.4	1.5	1.9	.0	.0	.0
305. *	1.4	1.9	2.8	2.4	1.3	1.3	1.8	1.8	1.8	1.9	.3	.5	.8	1.1	1.4	1.5	1.9	.0	.0	.0
310. *	1.3	1.9	2.6	2.1	1.3	1.4	1.6	1.6	2.0	2.0	.3	.5	.8	1.2	1.4	1.5	1.9	.0	.0	.0
315. *	1.3	1.9	2.6	2.1	1.4	1.4	1.6	1.6	2.1	2.1	.3	.5	.7	1.2	1.3	1.5	2.0	.0	.0	.0
320. *	1.3	2.0	2.6	1.9	1.3	1.2	1.5	1.7	2.0	2.0	.3	.5	.7	1.2	1.5	1.6	2.0	.0	.0	.0
325. *	1.2	1.9	2.4	1.6	1.2	1.2	1.3	1.7	2.2	2.0	.3	.5	.7	1.2	1.5	1.7	2.1	.0	.0	.0
330. *	1.2	1.9	2.5	1.6	1.2	1.2	1.5	1.8	2.1	2.0	.3	.6	.7	1.3	1.5	1.7	2.1	.0	.0	.0
335. *	1.2	2.1	2.5	1.5	1.1	1.2	1.6	1.9	2.0	2.0	.4	.6	.6	1.4	1.6	1.8	2.2	.0	.0	.0
340. *	1.2	2.1	2.4	1.5	1.1	1.4	1.9	2.1	2.2	2.0	.4	.6	.7	1.4	1.8	1.8	2.4	.0	.0	.0
345. *	1.2	2.2	2.5	1.6	1.2	1.4	2.0	2.4	2.2	2.0	.4	.6	.7	1.5	1.9	1.9	2.4	.1	.1	.1
350. *	1.2	2.3	2.6	1.8	1.3	1.5	2.3	2.3	2.2	2.1	.4	.5	.9	1.5	1.9	1.9	2.5	.2	.4	.3
355. *	1.4	2.4	2.7	2.1	1.5	1.9	2.4	2.5	2.2	2.0	.3	.5	.9	1.6	2.0	2.0	2.6	.5	.7	.6
360. *	1.3	2.5	2.7	2.3	1.7	1.8	2.5	2.4	2.2	2.0	.3	.5	.6	1.5	1.8	1.9	2.6	.9	1.2	1.2
MAX *	2.8	3.4	3.5	2.8	1.9	1.9	2.9	2.5	2.2	2.3	3.5	3.6	3.5	2.4	2.4	2.3	2.8	3.1	3.3	3.3
DEGR. *	70	35	20	10	10	10	280	355	0	75	250	100	95	250	235	235	210	170	30	25

1

JOB: Site 1 Opt 3 2030 AM 1B3AM30.DAT RUN: Site 1 Opt 3 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.6	.1	.1	.0

5.	*	1.1	.3	.1	.1
10.	*	1.6	.5	.3	.1
15.	*	2.1	.7	.4	.2
20.	*	2.3	.9	.6	.4
25.	*	2.5	1.0	.7	.5
30.	*	2.2	1.0	.8	.5
35.	*	2.1	.9	.7	.5
40.	*	1.9	.9	.7	.5
45.	*	1.9	.9	.7	.6
50.	*	1.8	.8	.6	.6
55.	*	1.5	.9	.7	.6
60.	*	1.4	.9	.8	.7
65.	*	1.3	1.1	1.0	.7
70.	*	1.3	1.3	1.2	1.1
75.	*	1.6	1.6	1.4	1.3
80.	*	1.8	2.3	2.0	1.9
85.	*	2.0	2.8	2.7	2.7
90.	*	2.4	2.9	2.9	3.1
95.	*	2.5	3.1	3.2	3.2
100.	*	2.5	2.8	2.8	3.1
105.	*	2.2	2.7	2.9	3.0
110.	*	2.1	2.4	2.7	3.2
115.	*	1.9	2.3	2.9	2.7
120.	*	1.7	2.5	2.8	2.4
125.	*	1.6	2.3	2.8	2.4
130.	*	1.6	2.4	2.7	2.2
135.	*	1.6	2.5	2.6	1.9
140.	*	1.5	2.6	2.5	1.8
145.	*	1.6	2.4	2.5	1.7
150.	*	1.6	2.5	2.4	1.7
155.	*	1.5	2.5	2.3	1.5
160.	*	1.5	2.5	2.2	1.5
165.	*	1.4	2.5	2.2	1.6
170.	*	1.5	2.4	2.2	1.6
175.	*	1.6	2.4	2.2	1.6
180.	*	1.5	2.4	2.2	1.6
185.	*	1.5	2.4	2.1	1.6
190.	*	1.6	2.3	2.0	1.5
195.	*	1.7	2.3	2.0	1.5
200.	*	1.7	2.3	2.0	1.5
205.	*	1.8	2.4	2.1	1.6

1

JOB: Site 1 Opt 3 2030 AM 1B3AM30.DAT RUN: Site 1 Opt 3 2030 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.0	2.4	2.0	1.6
215.	*	2.0	2.4	2.1	1.7
220.	*	2.2	2.4	2.0	1.8
225.	*	2.2	2.4	2.1	1.9
230.	*	2.3	2.4	2.2	1.9
235.	*	2.2	2.5	2.1	2.1
240.	*	2.1	2.6	2.2	2.2
245.	*	2.2	2.5	2.4	2.3
250.	*	2.0	2.6	2.3	2.2
255.	*	1.7	2.6	2.4	2.3
260.	*	1.5	2.4	2.3	2.2
265.	*	1.2	2.0	1.9	2.0
270.	*	.8	1.6	1.6	1.6
275.	*	.4	1.2	1.2	1.2
280.	*	.2	.8	.8	.8
285.	*	.1	.5	.5	.6
290.	*	.1	.4	.4	.4
295.	*	.0	.2	.3	.3
300.	*	.0	.2	.2	.2
305.	*	.0	.2	.2	.2
310.	*	.0	.1	.1	.2
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.3	.1	.0	.0
360.	*	.6	.1	.1	.0
MAX	*	2.5	3.1	3.2	3.2
DEGR.	*	25	95	95	95

THE HIGHEST CONCENTRATION IS 3.60 PPM AT 100 DEGREES FROM REC12.
THE 2ND HIGHEST CONCENTRATION IS 3.50 PPM AT 20 DEGREES FROM REC3 .
THE 3RD HIGHEST CONCENTRATION IS 3.50 PPM AT 250 DEGREES FROM REC11.

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Site 1 Opt 3 2014 PM 1B3PM14.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 3 2014 PM                     27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    403211.4  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    300411.4  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        60       2.0 3004  102.2 1678 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.    102311.4  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120       101       2.0 1023  102.2 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    325611.4  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    325611.4  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    325611.4  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    267411.4  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    267411.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    266911.4  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        76       2.0 2669  102.2 1660 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      1011.4  0.  32   30.
```

```
  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      1011.4  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0   10  102.2 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    310411.4  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    310411.4  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     82911.4  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     82911.4  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     82911.4  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120        94       2.0  829  102.2 1523 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      3011.4  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.     16011.4  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       104       2.0  160  102.2 1706 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.    130511.4  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.    130511.4  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.    130511.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000 PAGE 1

JOB: Site 1 Opt 3 2014 PM 1B3PM14.DAT RUN: Site 1 Opt 3 2014 PM
DATE: 05/10/2009 TIME: 18:35:23.47

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	4032.	11.4	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	3004.	11.4	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	-1659.7	1007.3	2648.	267.	AG	411.	100.0	.0	36.0	1.28	134.5
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	1023.	11.4	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-2407.9	1002.1	3396.	267.	AG	461.	100.0	.0	24.0	2.41	172.5
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	3256.	11.4	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	3256.	11.4	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	3256.	11.4	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	2674.	11.4	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	2674.	11.4	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	2669.	11.4	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	4999.6	1425.6	3860.	87.	AG	521.	100.0	.0	36.0	1.61	196.1
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	10.	11.4	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	10.	11.4	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1157.4	1212.5	10.	87.	AG	263.	100.0	.0	12.0	.71	.5
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	3104.	11.4	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	3104.	11.4	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	829.	11.4	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	829.	11.4	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	829.	11.4	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1086.4	1499.0	216.	12.	AG	644.	100.0	.0	36.0	.99	11.0
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	30.	11.4	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	160.	11.4	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.4	1095.5	45.	180.	AG	475.	100.0	.0	24.0	.47	2.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	1305.	11.4	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	1305.	11.4	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	1305.	11.4	.0	32.0		

LINK COORDINATES (FT)

1 PAGE 2

JOB: Site 1 Opt 3 2014 PM 1B3PM14.DAT RUN: Site 1 Opt 3 2014 PM
DATE: 05/10/2009 TIME: 18:35:23.47

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	60	2.0	3004	1678	102.20	1	3
5. NB	Rt1 left	120	101	2.0	1023	1700	102.20	1	3
12. SB	Rt1th+rt	120	76	2.0	2669	1660	102.20	1	3
15. SB	Rt1 left	120	115	2.0	10	1752	102.20	1	3
21. EB	Rt28 aprch	120	94	2.0	829	1523	102.20	1	3
24. WB	Rt28 aprch	120	104	2.0	160	1706	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

COORDINATES (FT)

1 PAGE 3

JOB: Site 1 Opt 3 2014 PM 1B3PM14.DAT RUN: Site 1 Opt 3 2014 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE * CONCENTRATION (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	3.8	3.7	3.8	2.6	2.0	2.1	3.0	2.9	2.5	2.4	.0	.1	.2	.7	.9	.8	1.1	.2	.4	.7
5. *	3.8	3.7	4.0	3.0	1.9	1.9	2.8	2.7	2.5	2.4	.0	.0	.1	.5	.8	.6	1.0	.3	.6	1.0
10. *	3.7	3.6	4.1	2.9	2.2	1.7	2.5	2.4	2.3	2.3	.0	.0	.0	.5	.7	.6	.9	.4	1.0	1.2
15. *	3.7	3.8	4.2	3.1	2.3	1.5	2.4	2.2	2.3	2.3	.0	.0	.0	.3	.6	.4	.7	.5	1.3	1.7
20. *	3.7	4.0	4.3	2.8	2.3	1.2	2.2	2.3	2.3	2.3	.0	.0	.0	.1	.3	.2	.6	.7	1.6	2.2
25. *	3.8	4.1	4.3	2.6	1.9	1.3	2.1	2.4	2.3	2.4	.0	.1	.1	.0	.3	.1	.4	.7	1.8	2.4
30. *	4.0	4.1	4.3	2.6	1.8	1.1	2.1	2.4	2.4	2.4	.0	.1	.1	.0	.1	.0	.2	.7	2.0	2.7
35. *	4.2	4.8	4.1	2.3	1.8	1.2	2.2	2.5	2.5	2.6	.0	.1	.1	.0	.0	.0	.2	.7	2.2	2.8
40. *	4.4	4.6	3.9	2.5	1.6	1.3	2.3	2.6	2.7	2.6	.0	.1	.1	.0	.0	.0	.1	.7	2.3	2.8
45. *	4.6	4.8	3.9	2.7	1.7	1.4	2.5	2.7	2.7	2.7	.0	.1	.1	.0	.0	.0	.1	.7	2.4	2.8
50. *	4.9	4.8	3.9	2.7	1.7	1.5	2.7	2.9	2.9	2.8	.0	.1	.1	.0	.0	.0	.1	.6	2.4	2.7
55. *	5.2	4.9	3.7	3.1	1.7	1.6	2.9	3.0	3.0	3.0	.1	.2	.1	.0	.0	.0	.0	.6	2.4	2.7
60. *	5.3	4.5	3.7	3.2	1.7	1.5	3.0	3.1	3.2	3.2	.2	.3	.3	.0	.0	.0	.0	.6	2.4	2.6
65. *	5.1	4.9	3.6	3.6	1.8	1.5	3.2	3.3	3.3	3.3	.3	.6	.4	.1	.0	.0	.0	.6	2.4	2.5
70. *	5.2	4.8	3.9	3.9	1.6	1.6	3.5	3.5	3.4	3.6	.8	1.1	.9	.2	.0	.0	.0	.6	2.4	2.5
75. *	5.0	4.4	3.7	3.9	1.5	1.4	3.5	3.5	3.4	3.4	1.3	1.7	1.5	.6	.1	.0	.0	.6	2.4	2.4
80. *	4.6	4.2	3.6	3.9	1.3	1.2	3.3	3.2	3.0	3.1	2.2	2.4	2.4	1.1	.2	.1	.0	.7	2.3	2.6
85. *	3.8	3.6	3.2	3.7	1.1	.9	2.8	2.8	2.8	2.7	3.0	3.4	3.2	1.7	.5	.2	.1	.7	2.6	3.0
90. *	2.9	2.5	2.6	3.3	.6	.5	2.2	2.3	2.1	2.2	3.7	4.0	3.8	2.3	.8	.5	.2	.8	2.8	3.4
95. *	2.1	1.8	1.8	2.3	.3	.2	1.3	1.6	1.5	1.6	4.2	4.4	4.4	2.6	1.1	.7	.3	.8	3.2	3.7
100. *	1.0	1.2	1.1	2.1	.2	.1	.9	.9	.8	.9	4.4	4.6	4.5	2.9	1.2	.9	.3	1.0	3.3	3.8
105. *	.7	.7	.7	1.7	.1	.0	.5	.5	.6	.6	4.2	4.7	4.7	3.1	1.4	.9	.4	1.2	3.5	3.9
110. *	.4	.3	.5	1.5	.1	.0	.2	.3	.3	.4	4.1	4.4	4.2	2.9	1.5	.9	.5	1.4	3.5	3.7
115. *	.2	.2	.3	1.5	.1	.0	.1	.2	.2	.2	4.1	4.1	4.1	2.8	1.3	1.0	.6	1.2	3.2	4.0
120. *	.1	.1	.2	1.3	.0	.0	.1	.2	.2	.2	3.7	4.0	3.9	2.7	1.2	1.1	.7	1.3	3.4	3.8
125. *	.1	.1	.2	1.2	.0	.0	.0	.1	.1	.2	3.5	3.9	3.8	2.5	1.3	.9	.7	1.1	3.4	3.6
130. *	.1	.1	.1	1.2	.0	.0	.0	.1	.1	.1	3.5	3.6	3.5	2.5	1.4	.8	.5	1.3	3.4	3.5
135. *	.1	.1	.1	1.1	.0	.0	.0	.1	.1	.1	3.3	3.4	3.4	2.4	1.2	1.0	.5	1.2	3.5	3.5
140. *	.1	.1	.1	1.0	.0	.0	.0	.1	.1	.1	3.1	3.3	3.2	2.3	1.1	1.0	.7	1.5	3.7	3.3
145. *	.1	.1	.1	.9	.0	.0	.0	.1	.1	.1	3.1	3.2	3.2	2.2	1.1	.8	.7	1.4	3.7	3.3
150. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	3.0	3.1	3.0	2.2	1.1	.8	.7	1.6	3.5	3.2
155. *	.0	.0	.0	.5	.0	.0	.0	.0	.0	.1	2.9	3.0	3.0	2.1	1.1	.9	.6	1.6	3.5	3.1
160. *	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	3.0	3.0	3.0	2.0	1.1	.8	.7	1.8	3.3	3.0
165. *	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	2.9	3.0	3.0	1.9	1.1	.8	.7	1.9	3.5	2.9
170. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	3.0	3.1	3.1	1.8	1.1	.9	.9	1.8	3.4	2.7
175. *	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	3.0	3.2	3.1	1.7	1.1	.9	1.0	2.1	3.1	2.4
180. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.9	3.2	3.1	1.6	1.0	.9	1.1	2.1	3.1	2.4
185. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	3.0	3.1	3.1	1.5	1.1	1.2	1.2	2.0	2.6	2.0
190. *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	3.0	3.0	3.0	1.5	1.2	1.5	1.9	1.8	2.1	2.0
195. *	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	3.0	3.0	3.0	1.5	1.3	1.7	2.2	1.5	1.8	1.6
200. *	.0	.0	.0	.1	.0	.0	.7	.1	.0	.1	3.0	3.0	3.0	1.5	1.7	1.9	2.2	1.4	1.8	1.5
205. *	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	3.0	3.2	3.0	1.3	2.0	2.2	2.4	1.3	1.5	1.7

1

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.1	.1	.1	.1	.0	.0	1.0	.1	.1	.1	3.2	3.2	3.2	1.7	2.2	2.7	2.5	1.1	1.6	1.5
215. *	.1	.1	.1	.1	.0	.1	1.1	.1	.1	.1	3.2	3.3	3.4	1.7	2.2	2.9	2.4	1.0	1.5	1.7
220. *	.1	.1	.1	.1	.0	.1	1.2	.1	.1	.1	3.4	3.4	3.4	2.1	2.6	2.9	2.3	.9	1.4	1.7
225. *	.1	.1	.1	.1	.0	.1	1.3	.1	.1	.1	3.5	3.6	3.5	2.2	2.9	3.4	1.9	.8	1.4	1.7
230. *	.1	.1	.1	.1	.0	.1	1.4	.2	.1	.2	3.6	3.8	3.6	2.5	3.0	3.3	1.9	.8	1.3	1.8
235. *	.1	.2	.2	.2	.0	.1	1.5	.2	.2	.2	3.8	4.1	4.0	2.8	3.5	3.4	1.7	1.0	1.5	1.9
240. *	.3	.3	.3	.3	.0	.1	1.6	.5	.2	.3	4.2	4.2	4.3	3.1	3.5	3.2	1.6	.9	1.5	2.0
245. *	.5	.7	.6	.7	.0	.1	1.9	.7	.6	.5	4.3	4.9	4.5	3.5	3.6	3.2	1.6	.8	1.3	1.9
250. *	.9	1.0	1.0	1.1	.0	.1	2.3	1.3	1.0	.8	4.8	5.0	4.6	3.7	3.5	3.1	1.4	.7	1.2	1.9
255. *	1.8	1.8	1.8	1.9	.3	.4	2.9	2.0	1.6	1.6	4.9	5.0	4.8	3.8	3.2	2.8	1.3	.6	1.1	1.6
260. *	2.7	2.7	3.0	3.0	.5	.7	3.9	3.0	2.5	2.3	4.7	5.0	4.7	3.4	2.9	2.5	1.0	.3	.9	1.4
265. *	3.7	3.9	3.9	4.0	1.1	1.2	4.6	3.5	3.3	3.2	4.2	4.5	4.2	3.2	2.5	2.4	.9	.2	.6	1.0
270. *	4.5	4.7	4.7	4.8	1.6	1.7	5.2	4.3	3.6	3.6	3.5	3.7	3.5	2.6	2.2	2.0	.8	.1	.4	.7
275. *	5.2	5.2	5.3	5.1	1.9	2.1	5.5	4.3	3.9	3.7	2.6	2.7	2.7	1.9	2.0	1.9	.7	.0	.1	.3
280. *	5.4	5.5	5.5	5.4	2.3	2.4	5.5	4.1	3.7	3.8	1.4	1.9	1.8	1.5	1.7	1.7	.7	.0	.0	.1
285. *	5.3	5.3	5.5	5.2	2.4	2.5	5.0	3.9	3.5	3.7	1.0	1.3	1.4	1.3	1.6	1.6	.7	.0	.0	.0
290. *	5.0	5.2	5.3	4.9	2.4	2.4	4.5	3.4	3.2	3.2	.5	1.0	1.0	1.2	1.6	1.5	.7	.0	.0	.0
295. *	4.8	5.0	5.0	4.3	2.2	2.4	3.9	3.1	2.9	3.4	.4	.8	1.0	1.3	1.7	1.4	.7	.0	.0	.0
300. *	4.6	4.7	4.7	4.0	2.1	2.3	3.5	2.7	2.9	3.1	.2	.7	.9	1.2	1.7	1.3	.7	.0	.0	.0
305. *	4.5	4.5	4.5	3.8	2.1	2.3	2.9	2.5	2.6	3.1	.1	.5	.8	1.3	1.7	1.1	.7	.0	.0	.0
310. *	4.2	4.4	4.4	3.4	2.1	2.1	2.7	2.4	2.7	3.0	.1	.6	.8	1.4	1.8	1.0	.7	.0	.0	.0
315. *	4.1	4.1	4.2	3.1	2.0	2.0	2.5	2.4	2.7	2.9	.0	.4	.7	1.4	1.6	.9	.7	.0	.0	.0
320. *	3.9	4.0	3.9	2.8	1.9	2.0	2.2	2.5	2.8	2.8	.1	.4	.7	1.4	1.5	.9	.8	.0	.0	.0
325. *	3.9	3.9	3.8	2.5	1.7	2.0	2.2	2.3	2.9	2.6	.1	.3	.6	1.4	1.6	.9	.8	.0	.0	.0
330. *	3.7	3.7	3.8	2.4	1.8	2.1	2.3	2.5	2.7	2.5	.1	.4	.6	1.5	1.5	.9	.8	.0	.0	.0
335. *	3.7	3.7	3.6	2.0	1.5	2.0	2.2	2.5	2.7	2.5	.1	.2	.4	1.5	1.5	.9	.9	.0	.0	.0
340. *	3.7	3.7	3.7	2.2	1.6	2.2	2.5	2.6	2.7	2.4	.1	.2	.4	1.3	1.3	.8	.9	.0	.0	.0
345. *	3.7	3.7	3.6	2.2	1.5	2.2	2.6	2.6	2.7	2.4	.1	.2	.4	1.2	1.4	.9	1.0	.0	.1	.0
350. *	3.8	3.8	3.8	2.3	1.5	2.1	2.8	2.9	2.7	2.5	.0	.1	.2	1.2	1.3	.9	1.0	.0	.1	.1
355. *	3.8	3.8	3.8	2.5	1.8	2.1	2.8	2.9	2.6	2.5	.0	.1	.2	.9	1.3	.9	1.1	.1	.3	.3
360. *	3.8	3.7	3.8	2.6	2.0	2.1	3.0	2.9	2.5	2.4	.0	.1	.2	.7	.9	.8	1.1	.2	.4	.7
MAX *	5.4	5.5	5.5	5.4	2.4	2.5	5.5	4.3	3.9	3.8	4.9	5.0	4.8	3.8	3.6	3.4	2.5	2.1	3.7	4.0
DEGR. *	280	280	280	280	285	285	275	270	275	280	255	250	255	255	245	225	210	175	140	115

1

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.2	.0	.0	.0

5.	*	.6	.0	.0	.0
10.	*	.9	.0	.0	.0
15.	*	1.3	.3	.0	.0
20.	*	1.7	.3	.1	.1
25.	*	2.0	.4	.3	.1
30.	*	2.1	.5	.4	.1
35.	*	2.1	.6	.4	.2
40.	*	2.0	.8	.4	.2
45.	*	2.1	.9	.5	.4
50.	*	1.9	.9	.4	.3
55.	*	1.8	.9	.6	.4
60.	*	1.6	.9	.8	.5
65.	*	1.6	1.1	1.1	.8
70.	*	1.6	1.3	1.3	1.2
75.	*	1.8	1.8	1.8	1.6
80.	*	2.4	2.6	2.3	2.3
85.	*	2.6	3.2	3.3	3.1
90.	*	3.0	3.5	3.5	3.7
95.	*	3.2	3.7	3.8	4.1
100.	*	3.2	3.5	3.7	4.0
105.	*	2.9	3.3	3.7	4.0
110.	*	2.6	3.1	3.4	4.1
115.	*	2.4	3.0	3.7	4.0
120.	*	2.2	2.8	3.5	3.8
125.	*	2.1	2.9	3.6	3.7
130.	*	2.1	3.0	3.6	3.6
135.	*	1.8	3.1	3.3	3.5
140.	*	2.1	3.0	3.2	3.4
145.	*	1.9	3.1	3.1	3.3
150.	*	1.9	3.2	3.1	3.1
155.	*	1.9	3.0	3.1	3.1
160.	*	1.9	3.0	3.1	3.2
165.	*	1.9	3.1	3.2	3.2
170.	*	2.0	3.2	3.1	3.2
175.	*	2.0	3.2	3.2	3.2
180.	*	2.2	3.2	3.2	3.2
185.	*	2.1	3.1	3.1	3.1
190.	*	2.2	3.2	3.1	3.1
195.	*	2.2	3.0	3.0	3.1
200.	*	2.5	3.1	3.1	3.1
205.	*	2.6	3.2	3.1	3.2

1

PAGE 6

JOB: Site 1 Opt 3 2014 PM 1B3PM14.DAT RUN: Site 1 Opt 3 2014 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.8	3.2	3.2	3.4
215.	*	2.8	3.4	3.3	3.5
220.	*	2.8	3.5	3.5	3.5
225.	*	3.1	3.7	3.7	3.7
230.	*	3.1	3.9	3.7	4.0
235.	*	3.3	4.1	4.0	4.1
240.	*	3.4	4.2	4.2	4.2
245.	*	3.4	4.3	4.3	4.3
250.	*	3.6	4.5	4.5	4.6
255.	*	3.4	4.5	4.5	4.4
260.	*	3.1	4.1	4.1	4.0
265.	*	2.4	3.6	3.6	3.5
270.	*	1.8	2.8	2.6	2.6
275.	*	1.0	1.8	1.8	1.8
280.	*	.5	1.2	1.2	1.2
285.	*	.2	.6	.6	.6
290.	*	.1	.3	.4	.4
295.	*	.0	.2	.2	.3
300.	*	.0	.2	.2	.2
305.	*	.0	.1	.2	.2
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.0	.1	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.0	.0	.0
MAX	*	3.6	4.5	4.5	4.6
DEGR.	*	250	250	250	250

THE HIGHEST CONCENTRATION IS 5.50 PPM AT 280 DEGREES FROM REC2 .
THE 2ND HIGHEST CONCENTRATION IS 5.50 PPM AT 280 DEGREES FROM REC3 .
THE 3RD HIGHEST CONCENTRATION IS 5.50 PPM AT 275 DEGREES FROM REC7 .

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Site 1 Opt 3 2030 PM 1B3PM30.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 3 2030 PM                     27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    3860 9.2  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    2840 9.2  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        46       2.0 2840   84.1 1678 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.    1015 9.2  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120        92       2.0 1015   84.1 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    3080 9.2  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    3080 9.2  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    3080 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    2575 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    2575 9.2  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    2570 9.2  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        70       2.0 2570   84.1 1659 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      10 9.2  0.  32   30.
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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      10 9.2  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0  10   84.1 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    2985 9.2  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    2985 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     795 9.2  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     795 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     795 9.2  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120       105       2.0  795   84.1 1523 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      30 9.2  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.     160 9.2  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       109       2.0  160   84.1 1706 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.    1295 9.2  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.    1295 9.2  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.    1295 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000

JOB: Site 1 Opt 3 2030 PM 1B3PM30.DAT RUN: Site 1 Opt 3 2030 PM
DATE: 05/10/2009 TIME: 18:54:59.64

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	3860.	9.2	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	2840.	9.2	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	648.0	1140.6	337.	267.	AG	259.	100.0	.0	36.0	.97	17.1
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	1015.	9.2	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-1046.4	1077.6	2032.	267.	AG	346.	100.0	.0	24.0	1.49	103.2
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	3080.	9.2	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	3080.	9.2	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	3080.	9.2	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	2575.	9.2	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	2575.	9.2	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	2570.	9.2	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	3808.8	1367.1	2668.	87.	AG	395.	100.0	.0	36.0	1.35	135.5
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	10.	9.2	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	10.	9.2	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1157.4	1212.5	10.	87.	AG	216.	100.0	.0	12.0	.71	.5
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	2985.	9.2	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	2985.	9.2	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	795.	9.2	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	795.	9.2	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	795.	9.2	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1344.5	2758.4	1502.	12.	AG	592.	100.0	.0	36.0	1.91	76.3
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	30.	9.2	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	160.	9.2	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.5	1080.1	61.	180.	AG	410.	100.0	.0	24.0	.81	3.1
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	1295.	9.2	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	1295.	9.2	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	1295.	9.2	.0	32.0		

1

JOB: Site 1 Opt 3 2030 PM 1B3PM30.DAT RUN: Site 1 Opt 3 2030 PM
DATE: 05/10/2009 TIME: 18:54:59.64

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	46	2.0	2840	1678	84.10	1	3
5. NB	Rt1 left	120	92	2.0	1015	1700	84.10	1	3
12. SB	Rt1th+rt	120	70	2.0	2570	1659	84.10	1	3
15. SB	Rt1 left	120	115	2.0	10	1752	84.10	1	3
21. EB	Rt28 aprch	120	105	2.0	795	1523	84.10	1	3
24. WB	Rt28 aprch	120	109	2.0	160	1706	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

1

JOB: Site 1 Opt 3 2030 PM 1B3PM30.DAT RUN: Site 1 Opt 3 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	2.7	2.8	3.0	2.6	2.0	2.1	3.0	2.6	2.3	2.1	.1	.3	.6	1.4	1.9	1.8	2.7	.8	1.1	.9
5. *	2.7	2.8	3.2	3.0	2.1	2.0	2.8	2.4	2.1	2.0	.1	.2	.5	1.3	1.8	1.7	2.4	1.3	1.6	1.7
10. *	2.7	2.9	3.3	3.0	2.2	1.6	2.5	2.3	2.0	1.8	.0	.1	.3	1.0	1.5	1.4	2.1	1.8	2.2	2.1
15. *	2.8	3.2	3.7	3.0	2.3	1.4	2.3	2.1	1.8	1.7	.0	.1	.2	.6	.9	1.1	1.6	2.3	2.6	2.6
20. *	3.0	3.5	3.7	2.7	2.4	1.2	2.0	1.9	1.8	1.8	.0	.0	.1	.3	.7	.5	1.2	2.6	3.0	3.0
25. *	3.1	3.6	3.7	2.2	2.0	1.0	1.8	1.9	1.8	1.8	.0	.1	.0	.1	.4	.3	.7	2.7	3.2	3.1
30. *	3.3	3.7	3.5	2.1	1.8	1.0	1.7	1.9	1.9	1.9	.0	.1	.1	.0	.1	.1	.4	2.9	3.1	3.0
35. *	3.4	3.6	3.4	2.0	1.8	.9	1.7	2.0	2.0	2.0	.0	.1	.1	.0	.0	.0	.2	2.7	3.0	2.9
40. *	3.4	3.7	3.0	1.8	1.6	.9	1.8	2.0	2.1	2.0	.0	.1	.1	.0	.0	.0	.1	2.7	2.8	2.7
45. *	3.6	3.6	3.1	1.9	1.5	1.0	1.8	2.1	2.1	2.1	.0	.1	.1	.0	.0	.0	.1	2.6	2.8	2.6
50. *	3.6	3.7	2.9	2.1	1.4	1.1	2.0	2.1	2.1	2.2	.0	.1	.1	.0	.0	.0	.0	2.4	2.6	2.4
55. *	3.6	3.7	2.8	2.1	1.4	1.1	2.2	2.2	2.3	2.2	.0	.1	.1	.0	.0	.0	.0	2.3	2.4	2.3
60. *	3.8	3.6	2.6	2.4	1.4	1.1	2.3	2.3	2.4	2.4	.2	.2	.2	.0	.0	.0	.0	2.1	2.3	2.3
65. *	3.9	3.4	2.8	2.7	1.3	1.3	2.4	2.5	2.5	2.6	.3	.4	.4	.1	.0	.0	.0	2.1	2.2	2.2
70. *	3.6	3.3	3.0	3.0	1.3	1.2	2.6	2.6	2.6	2.6	.6	.7	.6	.1	.0	.0	.0	2.0	2.2	2.1
75. *	3.7	3.3	2.7	3.0	1.3	1.0	2.5	2.6	2.6	2.5	1.1	1.2	1.1	.5	.1	.0	.0	2.0	2.1	2.2
80. *	3.4	3.1	2.7	3.1	1.0	1.0	2.4	2.5	2.4	2.4	1.7	1.9	1.9	.8	.1	.1	.0	2.0	2.1	2.3
85. *	2.9	2.6	2.3	2.8	.5	.5	2.1	2.2	2.0	2.0	2.1	2.5	2.4	1.3	.3	.1	.1	2.1	2.2	2.4
90. *	2.2	1.8	2.0	2.3	.4	.4	1.4	1.7	1.7	1.7	2.7	3.0	3.1	1.8	.6	.2	.1	2.1	2.4	2.9
95. *	1.4	1.2	1.3	1.8	.1	.1	.9	1.0	.9	1.0	3.1	3.3	3.3	2.1	.9	.4	.2	2.2	2.7	3.1
100. *	.9	.8	.9	1.5	.0	.0	.6	.7	.6	.6	3.3	3.7	3.5	2.4	.9	.6	.2	2.2	3.0	3.3
105. *	.4	.6	.6	1.3	.0	.0	.3	.3	.3	.4	3.4	3.5	3.3	2.1	1.0	.8	.2	2.5	2.9	3.2
110. *	.2	.3	.5	1.2	.0	.0	.2	.2	.2	.2	3.2	3.4	3.2	2.1	.9	.8	.4	2.5	2.9	3.2
115. *	.1	.2	.3	1.1	.0	.0	.1	.2	.2	.2	2.9	3.1	3.1	2.1	.9	.7	.4	2.6	2.9	3.2
120. *	.1	.1	.2	1.1	.0	.0	.1	.1	.1	.1	2.9	3.0	3.0	2.1	1.0	.5	.6	2.5	3.0	3.0
125. *	.1	.1	.2	1.1	.0	.0	.0	.1	.1	.1	2.8	2.7	2.8	1.9	1.1	.7	.5	2.4	3.2	3.0
130. *	.1	.1	.2	1.1	.0	.0	.0	.1	.1	.1	2.5	2.8	2.7	1.9	1.0	.7	.4	2.6	2.9	3.0
135. *	.1	.1	.1	1.0	.0	.0	.0	.1	.1	.1	2.5	2.7	2.6	1.9	.9	.7	.4	2.6	2.9	2.9
140. *	.1	.1	.1	1.1	.0	.0	.0	.1	.1	.1	2.4	2.5	2.4	1.8	.9	.8	.5	2.6	2.9	2.9
145. *	.1	.1	.1	1.0	.0	.0	.0	.1	.1	.1	2.3	2.3	2.4	1.8	1.0	.7	.6	2.7	2.9	2.8
150. *	.0	.0	.0	.9	.0	.0	.0	.1	.0	.1	2.4	2.3	2.3	1.7	1.0	.7	.5	2.7	3.0	2.9
155. *	.0	.0	.0	.6	.0	.0	.0	.0	.0	.0	2.2	2.4	2.2	1.6	1.0	.7	.4	2.9	3.0	2.7
160. *	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	2.2	2.4	2.2	1.5	.8	.7	.4	2.9	3.0	2.6
165. *	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	2.3	2.4	2.3	1.4	.9	.8	.5	2.9	3.1	2.4
170. *	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	2.2	2.5	2.2	1.4	.9	.7	.7	2.8	2.9	2.3
175. *	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	2.3	2.5	2.4	1.3	.8	.8	.7	2.9	2.7	2.2
180. *	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	2.2	2.5	2.4	1.2	.9	.8	.9	2.6	2.4	1.8
185. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	2.3	2.5	2.2	1.1	1.1	.9	1.4	2.2	2.5	1.6
190. *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	2.2	2.4	2.2	1.1	.9	1.4	1.8	1.9	1.8	1.4
195. *	.0	.0	.0	.0	.0	.0	.6	.0	.0	.0	2.2	2.4	2.2	1.1	1.0	1.4	2.1	1.5	1.6	1.3
200. *	.0	.0	.0	.0	.0	.0	.8	.0	.0	.0	2.2	2.4	2.2	1.1	1.3	1.5	2.6	1.2	1.4	1.3
205. *	.0	.0	.0	.1	.0	.0	1.0	.1	.1	.1	2.3	2.4	2.3	1.1	1.7	1.9	2.9	.8	1.3	1.4

1

PAGE 4

JOB: Site 1 Opt 3 2030 PM 1B3PM30.DAT RUN: Site 1 Opt 3 2030 PM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.1	.1	.1	.1	.0	.0	1.1	.1	.1	.1	2.5	2.5	2.4	1.0	1.7	2.1	2.9	.7	1.1	1.4
215. *	.1	.1	.1	.1	.0	.0	1.2	.1	.1	.1	2.5	2.6	2.5	1.5	1.8	2.2	2.9	.6	1.1	1.3
220. *	.1	.1	.1	.1	.0	.0	1.3	.2	.1	.1	2.6	2.7	2.6	1.6	2.1	2.4	3.0	.7	1.0	1.3
225. *	.1	.1	.1	.1	.0	.0	1.3	.2	.1	.1	2.7	2.8	2.8	1.6	2.2	2.5	3.0	.7	.8	1.3
230. *	.1	.1	.1	.1	.0	.0	1.3	.2	.1	.1	2.8	3.0	2.7	1.9	2.3	2.8	2.9	.6	1.1	1.2
235. *	.1	.1	.1	.1	.0	.0	1.2	.3	.1	.1	3.0	3.0	2.9	2.1	2.7	2.6	2.7	.5	1.0	1.3
240. *	.1	.2	.2	.2	.0	.0	1.3	.4	.3	.2	3.1	3.4	3.3	2.2	2.5	2.5	2.5	.5	.9	1.3
245. *	.3	.4	.3	.4	.0	.0	1.5	.6	.4	.3	3.3	3.6	3.5	2.6	2.6	2.5	2.3	.4	.9	1.4
250. *	.6	.6	.6	.8	.0	.0	1.7	.9	.7	.7	3.6	3.7	3.6	2.5	2.4	2.2	2.3	.4	.6	1.3
255. *	1.0	1.2	1.1	1.3	.1	.1	2.2	1.4	1.2	1.1	3.6	3.9	3.4	2.6	2.2	2.0	2.1	.2	.5	1.0
260. *	1.4	1.5	1.7	1.9	.2	.2	2.6	1.9	1.6	1.5	3.5	3.6	3.4	2.5	2.1	1.9	2.0	.1	.4	.7
265. *	2.1	2.3	2.4	2.5	.5	.7	3.2	2.5	2.2	2.1	3.0	3.1	2.9	2.0	2.0	1.7	1.9	.1	.2	.5
270. *	2.5	2.9	3.1	3.1	.8	.9	3.6	3.0	2.4	2.5	2.6	2.6	2.4	1.7	1.7	1.7	1.9	.0	.1	.3
275. *	3.0	3.3	3.4	3.5	1.1	1.2	3.9	3.0	2.7	2.6	1.6	2.0	1.8	1.5	1.6	1.6	1.9	.0	.0	.2
280. *	3.2	3.6	3.8	3.7	1.4	1.5	3.8	3.0	2.8	2.8	1.1	1.4	1.2	1.2	1.5	1.5	1.9	.0	.0	.0
285. *	3.4	3.8	3.8	3.7	1.5	1.6	3.5	2.9	2.6	2.7	.7	1.0	1.1	1.2	1.5	1.5	1.9	.0	.0	.0
290. *	3.3	3.5	3.7	3.5	1.6	1.7	3.1	2.3	2.5	2.5	.5	.8	.8	1.1	1.5	1.6	1.9	.0	.0	.0
295. *	3.3	3.5	3.5	3.2	1.6	1.8	2.7	2.4	2.2	2.6	.4	.7	.8	1.2	1.6	1.6	1.9	.0	.0	.0
300. *	3.3	3.4	3.4	2.9	1.5	1.8	2.5	2.2	2.3	2.4	.3	.6	.8	1.2	1.6	1.5	1.9	.0	.0	.0
305. *	3.1	3.2	3.2	2.7	1.5	1.8	2.2	2.1	2.1	2.4	.3	.6	.8	1.2	1.6	1.6	1.9	.0	.0	.0
310. *	3.0	3.2	3.2	2.5	1.5	1.9	2.1	1.8	2.3	2.4	.3	.5	.7	1.2	1.5	1.6	1.9	.0	.0	.0
315. *	3.0	3.0	3.0	2.4	1.4	2.0	1.8	1.8	2.2	2.4	.3	.6	.7	1.2	1.6	1.6	1.9	.0	.0	.0
320. *	2.9	2.9	2.9	2.1	1.4	2.0	1.7	1.8	2.3	2.4	.3	.6	.7	1.3	1.5	1.6	2.1	.0	.0	.0
325. *	2.8	2.8	2.8	1.9	1.4	1.9	1.6	2.0	2.3	2.3	.4	.6	.8	1.3	1.6	1.7	2.2	.0	.0	.0
330. *	2.7	2.7	2.9	1.8	1.3	2.0	1.8	2.0	2.4	2.2	.4	.5	.8	1.3	1.7	1.8	2.3	.0	.0	.0
335. *	2.7	2.7	2.7	1.7	1.2	1.9	1.8	2.2	2.3	2.2	.4	.6	.7	1.4	1.7	1.9	2.3	.0	.0	.0
340. *	2.6	2.6	2.6	1.7	1.3	1.9	1.9	2.3	2.3	2.3	.4	.6	.8	1.6	2.0	1.9	2.5	.0	.0	.0
345. *	2.6	2.6	2.7	1.8	1.2	2.1	2.2	2.5	2.3	2.3	.3	.6	.9	1.5	2.1	1.9	2.5	.1	.1	.1
350. *	2.6	2.6	2.8	2.0	1.4	2.2	2.4	2.4	2.4	2.3	.3	.5	.8	1.6	2.0	2.1	2.6	.2	.4	.3
355. *	2.7	2.7	3.0	2.2	1.7	2.1	2.6	2.6	2.4	2.2	.2	.5	.7	1.6	2.0	2.0	2.8	.5	.6	.5
360. *	2.7	2.8	3.0	2.6	2.0	2.1	3.0	2.6	2.3	2.1	.1	.3	.6	1.4	1.9	1.8	2.7	.8	1.1	.9
MAX *	3.9	3.8	3.8	3.7	2.4	2.2	3.9	3.0	2.8	2.8	3.6	3.9	3.6	2.6	2.7	2.8	3.0	2.9	3.2	3.3
DEGR. *	65	285	280	280	20	350	275	270	280	280	250	255	250	255	235	230	220	30	25	100

1

PAGE 5

JOB: Site 1 Opt 3 2030 PM 1B3PM30.DAT RUN: Site 1 Opt 3 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.5	.1	.0	.0

5.	*	.8	.2	.1	.0
10.	*	1.5	.4	.2	.1
15.	*	1.8	.5	.3	.1
20.	*	2.2	.8	.4	.3
25.	*	2.4	1.0	.7	.4
30.	*	2.3	.9	.8	.4
35.	*	2.1	.9	.8	.5
40.	*	2.0	.8	.8	.6
45.	*	1.7	.8	.6	.5
50.	*	1.7	.9	.6	.5
55.	*	1.6	.8	.6	.6
60.	*	1.4	.9	.8	.6
65.	*	1.4	1.0	1.0	.6
70.	*	1.5	1.1	1.1	.8
75.	*	1.4	1.4	1.5	1.1
80.	*	1.7	1.9	1.9	1.7
85.	*	2.2	2.5	2.4	2.1
90.	*	2.5	2.6	2.6	2.7
95.	*	2.6	3.0	2.7	2.8
100.	*	2.4	2.7	2.6	2.8
105.	*	2.3	2.6	2.7	3.2
110.	*	2.1	2.2	2.9	3.1
115.	*	1.9	2.3	2.8	2.8
120.	*	1.8	2.3	2.7	2.9
125.	*	1.6	2.3	2.6	2.8
130.	*	1.5	2.3	2.7	2.7
135.	*	1.6	2.4	2.6	2.6
140.	*	1.6	2.4	2.5	2.5
145.	*	1.6	2.4	2.5	2.5
150.	*	1.5	2.4	2.3	2.5
155.	*	1.4	2.4	2.3	2.3
160.	*	1.4	2.3	2.2	2.3
165.	*	1.4	2.3	2.3	2.4
170.	*	1.5	2.4	2.4	2.4
175.	*	1.6	2.4	2.4	2.4
180.	*	1.7	2.4	2.4	2.3
185.	*	1.8	2.4	2.4	2.3
190.	*	1.7	2.4	2.3	2.3
195.	*	1.7	2.2	2.2	2.2
200.	*	1.9	2.4	2.3	2.2
205.	*	2.0	2.4	2.5	2.3

1

JOB: Site 1 Opt 3 2030 PM 1B3PM30.DAT RUN: Site 1 Opt 3 2030 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.1	2.5	2.5	2.3
215.	*	2.2	2.6	2.6	2.4
220.	*	2.3	2.6	2.6	2.4
225.	*	2.2	2.7	2.6	2.5
230.	*	2.3	2.7	2.7	2.4
235.	*	2.4	2.9	2.9	2.6
240.	*	2.5	3.0	2.9	2.7
245.	*	2.5	3.1	3.0	2.7
250.	*	2.4	3.0	2.8	2.8
255.	*	2.1	2.9	2.9	2.8
260.	*	1.8	2.8	2.6	2.5
265.	*	1.7	2.4	2.4	2.2
270.	*	.8	1.9	1.7	1.7
275.	*	.6	1.2	1.2	1.3
280.	*	.3	.7	.8	.7
285.	*	.1	.5	.5	.5
290.	*	.0	.3	.3	.3
295.	*	.0	.2	.2	.2
300.	*	.0	.1	.1	.2
305.	*	.0	.1	.1	.1
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.0	.0	.0
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.3	.0	.0	.0
360.	*	.5	.1	.0	.0
MAX	*	2.6	3.1	3.0	3.2
DEGR.	*	95	245	245	105

THE HIGHEST CONCENTRATION IS 3.90 PPM AT 275 DEGREES FROM REC7 .
THE 2ND HIGHEST CONCENTRATION IS 3.90 PPM AT 65 DEGREES FROM REC1 .
THE 3RD HIGHEST CONCENTRATION IS 3.90 PPM AT 255 DEGREES FROM REC12.

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Site 1 Opt 8 2014 AM 1B8AM14.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 8 2014 AM                     27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    223511.4  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    168511.4  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        58       2.0 1685  102.2 1679 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.     55011.4  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120       107       2.0  550  102.2 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    192511.4  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    192511.4  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    192511.4  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    376011.4  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    376011.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    374011.4  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        66       2.0 3740  102.2 1665 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      2011.4  0.  32   30.
```

```
  1
SB         Rt1 left  AG  1240.  1217.  1058.  1208.      2011.4  0.  32   30.
  2
SB         Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0   20  102.2 1752 1 3
  1
SB         Rt1 departAG  1056.  1231.   921.  1221.    433011.4  0.  56   30.
  1
SB         Rt1 departAG   921.  1221.    58.  1172.    433011.4  0.  56   30.
  1
EB         Rt28 aprchAG  1226.  2185.  1087.  1547.    100011.4  0.  32   30.
  1
EB         Rt28 aprchAG  1088.  1547.  1072.  1425.    100011.4  0.  56   30.
  1
EB         Rt28 aprchAG  1072.  1425.  1025.  1202.    100011.4  0.  56   30.
  2
EB         Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120        93       2.0 1000  102.2 1523 1 3
  1
EB         Rt28 deparAG  1039.  1194.  1043.  1015.      4511.4  0.  32   30.
  1
WB         Rt28 aprchAG  1052.  1015.  1049.  1190.      8511.4  0.  44   30.
  2
WB         Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       109       2.0   85  102.2 1694 1 3
  1
WB         Rt28 deparAG  1069.  1197.  1121.  1424.     78011.4  0.  44   30.
  1
WB         Rt28 deparAG  1121.  1424.  1126.  1570.     78011.4  0.  32   30.
  1
WB         Rt28 deparAG  1126.  1570.  1257.  2180.     78011.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

JOB: Site 1 Opt 8 2014 AM 1B8AM14.DAT RUN: Site 1 Opt 8 2014 AM
DATE: 05/10/2009 TIME: 21:34:45.84

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	2235.	11.4	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	1685.	11.4	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	806.4	1149.7	178.	267.	AG	397.	100.0	.0	36.0	.69	9.0
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	550.	11.4	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-751.0	1093.9	1737.	267.	AG	489.	100.0	.0	24.0	2.17	88.2
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	1925.	11.4	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	1925.	11.4	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	1925.	11.4	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	3760.	11.4	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	3760.	11.4	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	3740.	11.4	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	7259.3	1536.8	6123.	87.	AG	452.	100.0	.0	36.0	1.80	311.0
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	20.	11.4	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	20.	11.4	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1244.8	1216.3	98.	87.	AG	263.	100.0	.0	12.0	1.43	5.0
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	4330.	11.4	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	4330.	11.4	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	1000.	11.4	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	1000.	11.4	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	1000.	11.4	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1179.1	1950.9	678.	12.	AG	637.	100.0	.0	36.0	1.14	34.4
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	45.	11.4	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	85.	11.4	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.2	1116.0	25.	180.	AG	498.	100.0	.0	24.0	.43	1.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	780.	11.4	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	780.	11.4	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	780.	11.4	.0	32.0		

JOB: Site 1 Opt 8 2014 AM 1B8AM14.DAT RUN: Site 1 Opt 8 2014 AM
DATE: 05/10/2009 TIME: 21:34:45.84

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	58	2.0	1685	1679	102.20	1	3
5. NB	Rt1 left	120	107	2.0	550	1700	102.20	1	3
12. SB	Rt1th+rt	120	66	2.0	3740	1665	102.20	1	3
15. SB	Rt1 left	120	115	2.0	20	1752	102.20	1	3
21. EB	Rt28 aprch	120	93	2.0	1000	1523	102.20	1	3
24. WB	Rt28 aprch	120	109	2.0	85	1694	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

JOB: Site 1 Opt 8 2014 AM 1B8AM14.DAT RUN: Site 1 Opt 8 2014 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	2.3	3.4	3.6	2.7	2.0	2.0	2.8	2.9	2.6	2.1	.0	.1	.5	1.3	1.6	1.7	2.2	.7	1.0	1.0
5. *	2.3	3.4	3.7	2.8	2.0	1.9	2.6	2.6	2.3	1.9	.0	.0	.2	1.1	1.3	1.4	1.9	1.1	1.6	1.5
10. *	2.3	3.6	4.0	3.0	1.9	1.9	2.7	2.4	2.2	2.0	.0	.0	.1	.9	1.0	1.1	1.6	1.5	2.1	2.1
15. *	2.3	3.7	4.1	2.8	1.9	1.3	2.3	2.4	2.1	2.0	.0	.0	.0	.5	.8	.7	1.1	2.0	2.6	2.5
20. *	2.5	3.9	4.3	2.7	1.8	1.3	2.0	2.4	2.1	2.0	.0	.1	.1	.2	.5	.5	.8	2.5	3.0	3.1
25. *	2.6	4.2	4.2	2.4	1.7	1.1	1.8	2.3	2.0	2.0	.0	.1	.1	.1	.1	.2	.4	2.7	3.3	3.3
30. *	2.7	4.3	4.1	2.2	1.5	1.2	2.0	2.3	2.0	2.0	.0	.1	.1	.0	.0	.1	.2	2.9	3.3	3.4
35. *	2.9	4.2	3.9	2.0	1.3	1.1	1.8	2.3	1.9	2.2	.0	.1	.1	.0	.0	.0	.1	2.9	3.2	3.0
40. *	3.0	4.4	3.6	2.0	1.3	1.2	2.0	2.4	2.2	2.2	.0	.1	.1	.0	.0	.0	.1	2.9	3.1	3.0
45. *	3.1	4.3	3.5	2.2	1.2	1.3	2.2	2.4	2.2	2.3	.1	.2	.1	.0	.0	.0	.0	2.7	2.8	3.0
50. *	3.5	4.5	3.2	2.1	1.4	1.4	2.3	2.6	2.3	2.3	.1	.2	.2	.0	.0	.0	.0	2.6	2.7	2.9
55. *	3.5	4.1	3.0	2.4	1.3	1.3	2.6	2.4	2.4	2.6	.1	.2	.2	.0	.0	.0	.0	2.5	2.6	2.7
60. *	3.5	4.2	3.1	2.7	1.4	1.5	2.6	2.7	2.7	2.6	.2	.4	.3	.0	.0	.0	.0	2.5	2.5	2.5
65. *	3.8	4.0	3.2	2.9	1.4	1.4	2.9	2.9	2.6	2.6	.5	.6	.6	.1	.0	.0	.0	2.4	2.3	2.4
70. *	3.7	3.8	3.2	3.4	1.5	1.3	2.8	2.8	2.8	2.8	.8	1.1	1.0	.4	.0	.0	.0	2.4	2.3	2.3
75. *	3.7	3.9	3.3	3.3	1.3	1.3	2.8	2.7	2.8	2.7	1.4	1.8	1.6	.7	.1	.1	.0	2.2	2.3	2.3
80. *	3.3	3.3	2.9	3.2	1.0	.9	2.6	2.5	2.5	2.4	2.2	2.6	2.4	1.1	.2	.1	.1	2.3	2.4	2.6
85. *	2.8	2.8	2.4	3.1	.8	.8	2.1	2.1	2.1	2.1	3.1	3.5	3.5	1.6	.6	.2	.1	2.3	2.7	2.8
90. *	2.2	2.2	1.9	2.5	.4	.3	1.5	1.5	1.5	1.5	3.8	4.1	4.2	2.3	.7	.5	.2	2.4	3.0	3.1
95. *	1.3	1.4	1.2	2.1	.2	.2	1.1	1.1	1.1	1.0	4.2	4.6	4.7	2.7	1.0	.5	.3	2.4	3.1	3.6
100. *	.7	.9	.6	1.5	.1	.1	.5	.7	.6	.6	4.4	4.9	4.7	2.7	1.2	.7	.4	2.5	3.1	3.8
105. *	.4	.5	.5	1.2	.0	.0	.3	.4	.3	.4	4.4	4.6	4.6	2.9	1.2	.8	.4	2.5	3.3	3.8
110. *	.2	.1	.2	1.0	.0	.0	.1	.2	.2	.2	4.1	4.4	4.2	2.9	1.4	.8	.4	2.7	3.3	3.8
115. *	.1	.1	.2	.8	.0	.0	.1	.1	.1	.1	3.9	4.1	4.1	2.9	1.4	.9	.5	2.7	3.4	3.8
120. *	.1	.1	.1	.8	.0	.0	.0	.1	.1	.1	3.6	4.0	3.9	2.7	1.2	.9	.5	2.8	3.2	3.6
125. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	3.5	3.9	3.6	2.7	1.2	.9	.6	2.9	3.2	3.5
130. *	.1	.1	.1	.6	.0	.0	.0	.1	.1	.1	3.3	3.7	3.5	2.6	1.2	1.0	.7	2.7	3.4	3.5
135. *	.1	.1	.1	.5	.0	.0	.0	.1	.1	.1	3.3	3.3	3.4	2.6	1.3	.8	.6	2.9	3.5	3.5
140. *	.0	.0	.0	.4	.0	.0	.0	.1	.1	.1	3.1	3.1	3.1	2.4	1.3	.9	.6	3.1	3.4	3.4
145. *	.0	.0	.0	.2	.0	.0	.0	.1	.0	.1	3.0	3.0	3.1	2.5	1.3	.8	.5	3.1	3.6	3.3
150. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.9	3.0	3.0	2.3	1.2	.7	.5	3.1	3.7	3.2
155. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	3.0	3.0	3.0	2.3	1.2	.8	.6	3.2	3.5	3.1
160. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.0	3.0	2.2	1.2	.8	.5	3.3	3.3	2.8
165. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.0	3.0	2.1	1.1	.8	.5	3.3	3.2	2.7
170. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.0	3.2	2.0	1.2	1.0	.7	3.2	3.3	2.6
175. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.0	3.2	1.8	1.2	.8	.9	3.3	3.1	2.4
180. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.0	3.3	1.7	1.1	.9	1.0	2.8	2.8	2.4
185. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.1	3.2	1.6	.9	1.0	1.4	2.6	2.4	2.2
190. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.0	3.2	1.4	1.1	1.3	2.1	2.3	2.1	1.9
195. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.8	3.0	3.2	1.5	1.1	1.2	2.3	1.7	1.8	1.7
200. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.8	3.0	3.2	1.6	1.3	1.6	2.7	1.4	1.6	1.8
205. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	3.0	3.0	3.2	1.4	1.5	1.8	2.9	1.2	1.6	1.7

1

JOB: Site 1 Opt 8 2014 AM 1B8AM14.DAT RUN: Site 1 Opt 8 2014 AM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.1	.0	.0	.3	.1	.0	.1	3.2	3.1	3.4	1.6	1.6	2.1	3.0	.9	1.2	1.8
215. *	.1	.1	.1	.1	.0	.0	.5	.1	.1	.1	3.2	3.4	3.4	1.7	2.2	2.4	3.1	.8	1.3	1.8
220. *	.1	.1	.1	.1	.0	.0	.6	.1	.1	.1	3.4	3.5	3.6	2.1	2.4	2.5	3.1	.6	1.0	1.6
225. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	3.5	3.7	3.7	2.2	2.8	2.8	3.1	.7	1.1	1.7
230. *	.1	.1	.1	.1	.0	.0	.8	.1	.1	.1	3.7	3.8	3.9	2.4	2.8	2.8	3.1	.7	1.2	1.7
235. *	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	3.9	4.1	4.1	2.5	3.0	2.9	3.1	.7	1.1	1.7
240. *	.1	.1	.1	.1	.0	.0	1.0	.2	.1	.2	4.1	4.6	4.1	2.8	2.9	2.7	2.8	.7	1.1	1.7
245. *	.2	.2	.3	.4	.0	.0	1.4	.3	.2	.2	4.4	4.5	4.3	3.3	2.9	2.7	2.5	.5	1.0	1.4
250. *	.4	.4	.5	.7	.0	.0	1.6	.7	.6	.5	4.7	5.1	4.8	3.3	2.8	2.5	2.4	.5	.9	1.4
255. *	.8	.7	1.1	1.2	.1	.1	2.1	1.1	.9	.9	4.7	5.0	4.9	3.3	2.6	2.3	2.3	.3	.7	1.2
260. *	1.3	1.4	1.5	1.9	.3	.4	2.7	1.7	1.5	1.5	4.6	5.0	4.5	3.1	2.4	2.0	2.2	.2	.6	1.0
265. *	1.7	1.9	2.5	2.6	.6	.6	3.3	2.6	2.2	2.0	4.1	4.5	3.8	2.7	2.2	1.8	2.1	.1	.3	.7
270. *	2.3	2.5	3.3	3.3	.8	.9	4.0	2.9	2.6	2.6	3.3	3.8	3.3	2.0	1.9	1.8	2.0	.0	.2	.4
275. *	2.7	3.1	3.8	3.7	1.1	1.2	4.3	3.2	2.9	2.8	2.1	2.7	2.4	1.5	1.7	1.6	2.0	.0	.0	.2
280. *	2.9	3.4	4.0	4.1	1.4	1.6	4.3	3.2	3.0	2.8	1.4	1.9	1.7	1.4	1.5	1.6	2.0	.0	.0	.0
285. *	3.2	3.7	4.3	4.2	1.6	1.8	4.0	2.9	2.5	3.0	1.1	1.5	1.4	1.2	1.5	1.6	2.0	.0	.0	.0
290. *	3.0	3.6	4.3	3.9	1.9	2.0	3.6	2.6	2.6	2.9	.7	1.1	1.0	1.2	1.6	1.6	2.0	.0	.0	.0
295. *	2.9	3.6	4.1	3.8	1.9	1.9	3.2	2.5	2.5	2.8	.6	1.0	.9	1.2	1.5	1.6	2.0	.0	.0	.0
300. *	2.7	3.6	4.0	3.5	1.9	1.9	2.7	2.5	2.4	2.9	.3	.7	.9	1.2	1.5	1.6	2.0	.0	.0	.0
305. *	2.6	3.6	3.9	3.2	1.8	1.8	2.4	2.1	2.5	2.8	.3	.6	.9	1.3	1.5	1.6	2.0	.0	.0	.0
310. *	2.6	3.6	3.8	2.8	2.0	1.8	2.1	2.0	2.5	2.6	.4	.6	.8	1.3	1.5	1.6	2.0	.0	.0	.0
315. *	2.4	3.6	3.8	2.6	1.9	1.7	2.0	1.9	2.8	2.6	.3	.5	1.0	1.3	1.8	1.8	2.0	.0	.0	.0
320. *	2.3	3.4	3.5	2.5	1.7	1.6	1.8	1.9	2.6	2.4	.3	.5	.9	1.3	1.7	1.8	2.0	.0	.0	.0
325. *	2.3	3.4	3.5	2.2	1.7	1.6	1.8	2.1	2.9	2.4	.4	.6	.9	1.4	1.6	1.7	2.2	.0	.0	.0
330. *	2.3	3.4	3.5	2.0	1.7	1.6	1.8	2.1	2.9	2.4	.4	.6	.9	1.4	1.7	1.8	2.4	.0	.0	.0
335. *	2.3	3.4	3.4	2.0	1.5	1.6	2.0	2.2	2.9	2.4	.3	.6	.9	1.4	1.9	1.8	2.4	.0	.0	.0
340. *	2.3	3.4	3.3	2.0	1.5	1.6	2.1	2.4	2.7	2.4	.2	.6	.7	1.4	1.9	2.0	2.5	.0	.0	.0
345. *	2.3	3.4	3.4	1.9	1.6	1.6	2.3	2.6	2.9	2.4	.1	.5	.7	1.6	1.8	1.9	2.6	.1	.2	.1
350. *	2.3	3.4	3.4	2.2	1.6	1.8	2.6	2.8	2.7	2.2	.1	.5	.7	1.5	1.9	1.9	2.5	.1	.3	.3
355. *	2.3	3.4	3.5	2.2	1.7	1.7	2.7	2.8	2.7	2.1	.0	.2	.6	1.5	1.9	1.8	2.4	.4	.6	.5
360. *	2.3	3.4	3.6	2.7	2.0	2.0	2.8	2.9	2.6	2.1	.0	.1	.5	1.3	1.6	1.7	2.2	.7	1.0	1.0
MAX *	3.8	4.5	4.3	4.2	2.0	2.0	4.3	3.2	3.0	3.0	4.7	5.1	4.9	3.3	3.0	2.9	3.1	3.3	3.7	3.8
DEGR. *	65	50	285	285	0	0	275	275	280	285	255	250	255	245	235	235	225	160	150	115

1

JOB: Site 1 Opt 8 2014 AM 1B8AM14.DAT RUN: Site 1 Opt 8 2014 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.4	.0	.0	.0

5.	*	.9	.1	.0	.0
10.	*	1.4	.2	.1	.0
15.	*	1.8	.4	.2	.1
20.	*	2.1	.6	.3	.2
25.	*	2.3	.8	.5	.2
30.	*	2.4	.9	.6	.3
35.	*	2.3	1.0	.8	.5
40.	*	2.1	1.0	.8	.6
45.	*	1.9	.9	.8	.6
50.	*	1.8	.8	.8	.6
55.	*	1.7	1.0	.8	.7
60.	*	1.5	.9	.9	.8
65.	*	1.5	1.2	1.2	.9
70.	*	1.5	1.5	1.6	1.4
75.	*	1.9	2.1	2.1	2.0
80.	*	2.1	2.8	2.8	2.8
85.	*	2.9	3.4	3.3	3.4
90.	*	3.2	3.9	3.8	3.9
95.	*	3.4	4.1	4.3	4.4
100.	*	3.4	4.0	3.9	4.3
105.	*	3.1	3.5	3.9	4.3
110.	*	2.8	3.3	3.7	4.2
115.	*	2.6	3.4	3.9	4.0
120.	*	2.5	3.1	3.8	3.7
125.	*	2.4	3.2	3.7	3.6
130.	*	2.1	3.2	3.6	3.4
135.	*	2.0	3.2	3.4	3.2
140.	*	2.1	3.3	3.4	3.0
145.	*	2.1	3.2	3.3	2.9
150.	*	1.9	3.3	3.2	2.8
155.	*	1.9	3.3	3.2	2.7
160.	*	1.8	3.2	3.1	2.6
165.	*	1.9	3.2	3.1	2.7
170.	*	2.0	3.2	3.3	2.8
175.	*	2.0	3.4	3.3	2.9
180.	*	2.1	3.3	3.2	2.9
185.	*	2.2	3.3	3.1	2.8
190.	*	2.2	3.1	2.8	2.7
195.	*	2.3	3.1	2.8	2.6
200.	*	2.5	3.2	2.8	2.7
205.	*	2.6	3.3	2.9	2.8

1

PAGE 6

JOB: Site 1 Opt 8 2014 AM 1B8AM14.DAT   RUN: Site 1 Opt 8 2014 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.8	3.4	2.8	2.9
215.	*	2.9	3.3	2.9	3.0
220.	*	3.1	3.4	3.0	3.0
225.	*	3.0	3.5	3.2	3.3
230.	*	3.0	3.5	3.4	3.4
235.	*	3.1	3.7	3.5	3.6
240.	*	3.3	3.9	3.8	3.8
245.	*	3.1	4.0	3.9	4.0
250.	*	3.1	4.1	4.1	4.0
255.	*	3.0	4.1	4.0	4.0
260.	*	2.5	3.9	3.8	3.7
265.	*	1.9	3.5	3.3	3.3
270.	*	1.4	2.7	2.7	2.7
275.	*	.9	2.0	2.0	2.0
280.	*	.4	1.3	1.3	1.3
285.	*	.3	.8	.8	.9
290.	*	.1	.5	.5	.5
295.	*	.0	.3	.3	.4
300.	*	.0	.3	.3	.3
305.	*	.0	.2	.2	.2
310.	*	.0	.2	.2	.2
315.	*	.0	.2	.2	.2
320.	*	.0	.1	.2	.2
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.1
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.2	.0	.0	.0
360.	*	.4	.0	.0	.0
MAX	*	3.4	4.1	4.3	4.4
DEGR.	*	95	95	95	95

THE HIGHEST CONCENTRATION IS 5.10 PPM AT 250 DEGREES FROM REC12.
THE 2ND HIGHEST CONCENTRATION IS 4.90 PPM AT 255 DEGREES FROM REC13.
THE 3RD HIGHEST CONCENTRATION IS 4.70 PPM AT 255 DEGREES FROM REC11.

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Site 1 Opt 8 2030 AM 1B8AM30.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 8 2030 AM                      27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    2295 9.2  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    1715 9.2  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       125        58       2.0 1715   84.1 1679 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.     580 9.2  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       125       111       2.0  580   84.1 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    1930 9.2  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    1930 9.2  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    1930 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    3435 9.2  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    3435 9.2  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    3415 9.2  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       125        67       2.0 3415   84.1 1666 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      20 9.2  0.  32   30.
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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      20 9.2  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       125       120       2.0   20   84.1 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    4030 9.2  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    4030 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     965 9.2  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     965 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     965 9.2  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       125       100       2.0  965   84.1 1524 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      45 9.2  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.      85 9.2  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       125       114       2.0   85   84.1 1694 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.     775 9.2  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.     775 9.2  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.     775 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000 PAGE 1

JOB: Site 1 Opt 8 2030 AM 1B8AM30.DAT RUN: Site 1 Opt 8 2030 AM
DATE: 05/10/2009 TIME: 21:49:28.11

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	2295.	9.2	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	1715.	9.2	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	803.2	1149.6	181.	267.	AG	314.	100.0	.0	36.0	.67	9.2
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	580.	9.2	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-827.3	1089.7	1813.	267.	AG	401.	100.0	.0	24.0	2.13	92.1
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	1930.	9.2	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	1930.	9.2	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	1930.	9.2	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	3435.	9.2	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	3435.	9.2	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	3415.	9.2	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	5885.5	1469.2	4747.	87.	AG	363.	100.0	.0	36.0	1.58	241.2
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	20.	9.2	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	20.	9.2	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1245.3	1216.4	98.	87.	AG	217.	100.0	.0	12.0	1.43	5.0
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	4030.	9.2	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	4030.	9.2	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	965.	9.2	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	965.	9.2	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	965.	9.2	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1226.3	2181.3	913.	12.	AG	541.	100.0	.0	36.0	1.25	46.4
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	45.	9.2	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	85.	9.2	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.2	1114.8	26.	180.	AG	411.	100.0	.0	24.0	.45	1.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	775.	9.2	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	775.	9.2	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	775.	9.2	.0	32.0		

1 PAGE 2

JOB: Site 1 Opt 8 2030 AM 1B8AM30.DAT RUN: Site 1 Opt 8 2030 AM
DATE: 05/10/2009 TIME: 21:49:28.11

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	125	58	2.0	1715	1679	84.10	1	3
5. NB	Rt1 left	125	111	2.0	580	1700	84.10	1	3
12. SB	Rt1th+rt	125	67	2.0	3415	1666	84.10	1	3
15. SB	Rt1 left	125	120	2.0	20	1752	84.10	1	3
21. EB	Rt28 aprch	125	100	2.0	965	1524	84.10	1	3
24. WB	Rt28 aprch	125	114	2.0	85	1694	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X (FT)	Y (FT)	Z (FT)
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

1 PAGE 3

JOB: Site 1 Opt 8 2030 AM 1B8AM30.DAT RUN: Site 1 Opt 8 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	1.8	2.7	2.8	2.0	1.6	1.4	2.3	2.2	2.1	1.7	.0	.2	.3	1.2	1.5	1.4	2.1	.6	.9	1.0
5. *	1.8	2.8	3.1	2.4	1.5	1.4	2.3	2.1	1.9	1.7	.0	.1	.2	1.1	1.2	1.2	1.9	1.0	1.5	1.4
10. *	1.9	2.8	3.2	2.4	1.6	1.6	2.1	1.9	1.7	1.5	.0	.0	.1	.7	1.0	1.0	1.5	1.4	1.8	1.8
15. *	1.9	3.0	3.6	2.5	1.5	1.2	1.7	1.8	1.7	1.5	.0	.0	.1	.3	.8	.7	1.1	1.9	2.4	2.3
20. *	2.0	3.1	3.5	2.1	1.5	1.0	1.6	1.8	1.5	1.5	.0	.1	.0	.2	.4	.4	.8	2.2	2.7	2.6
25. *	2.1	3.2	3.4	1.8	1.3	.9	1.4	1.8	1.6	1.6	.0	.1	.1	.1	.1	.2	.5	2.4	2.7	2.8
30. *	2.2	3.4	3.4	1.6	1.1	.9	1.6	1.8	1.6	1.6	.0	.1	.1	.0	.1	.1	.2	2.6	2.9	2.8
35. *	2.4	3.5	3.2	1.6	1.2	.9	1.4	1.8	1.6	1.6	.0	.1	.1	.0	.0	.0	.2	2.5	2.8	2.6
40. *	2.6	3.5	3.0	1.5	1.0	1.0	1.5	1.8	1.7	1.7	.0	.1	.1	.0	.0	.0	.1	2.5	2.5	2.5
45. *	2.6	3.5	2.8	1.6	1.0	1.0	1.6	2.0	1.8	1.8	.0	.1	.1	.0	.0	.0	.0	2.3	2.4	2.4
50. *	2.6	3.4	2.5	1.8	1.1	1.2	1.8	2.0	1.9	1.8	.0	.1	.1	.0	.0	.0	.0	2.1	2.3	2.4
55. *	2.9	3.4	2.7	1.9	1.2	1.0	1.9	2.0	1.8	1.9	.1	.1	.1	.0	.0	.0	.0	2.1	2.2	2.2
60. *	3.1	3.3	2.5	2.1	1.0	1.0	2.1	2.0	2.0	2.0	.2	.3	.3	.0	.0	.0	.0	2.0	2.1	2.1
65. *	2.8	3.4	2.4	2.2	1.0	1.0	2.0	2.2	2.1	2.1	.3	.5	.5	.1	.0	.0	.0	1.9	2.1	2.0
70. *	3.1	3.1	2.6	2.5	1.0	1.0	2.4	2.2	2.1	2.2	.6	.9	.7	.1	.0	.0	.0	1.9	2.0	2.0
75. *	3.0	3.1	2.3	2.7	1.0	.8	2.3	2.1	2.0	2.1	1.1	1.3	1.3	.5	.1	.0	.0	1.9	1.9	2.0
80. *	2.8	2.6	2.4	2.5	.8	.8	2.2	2.0	1.9	2.1	1.7	1.9	1.8	.9	.2	.1	.0	1.8	1.9	2.1
85. *	2.2	2.3	1.8	2.4	.7	.7	1.6	1.7	1.6	1.6	2.4	2.8	2.5	1.2	.4	.2	.1	1.9	2.0	2.4
90. *	1.7	1.5	1.5	2.0	.2	.2	1.3	1.3	1.2	1.3	2.9	3.2	3.2	1.7	.6	.4	.1	2.0	2.3	2.7
95. *	1.2	1.0	.9	1.7	.1	.1	.9	.9	.9	.8	3.2	3.6	3.5	2.0	.7	.4	.2	2.0	2.6	2.8
100. *	.6	.5	.5	1.2	.1	.1	.4	.4	.5	.4	3.4	3.6	3.5	2.1	.9	.6	.2	2.2	2.6	3.0
105. *	.3	.3	.3	.9	.0	.0	.2	.2	.2	.3	3.4	3.6	3.5	2.2	1.0	.6	.3	2.2	2.7	3.2
110. *	.1	.1	.2	.9	.0	.0	.1	.1	.1	.1	3.2	3.4	3.2	2.3	1.0	.6	.3	2.3	2.6	3.0
115. *	.1	.1	.1	.8	.0	.0	.1	.1	.1	.1	3.1	3.3	3.0	2.2	1.0	.7	.3	2.3	2.7	3.0
120. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	2.9	3.1	3.1	2.0	.9	.7	.4	2.3	2.7	3.1
125. *	.1	.1	.1	.6	.0	.0	.0	.1	.1	.1	2.8	2.9	2.8	1.9	1.0	.7	.4	2.2	2.6	2.9
130. *	.1	.1	.1	.5	.0	.0	.0	.1	.1	.1	2.6	2.8	2.6	2.1	.9	.7	.4	2.4	2.7	2.9
135. *	.0	.0	.0	.4	.0	.0	.0	.1	.1	.1	2.6	2.7	2.6	2.1	.8	.7	.4	2.3	2.7	2.9
140. *	.0	.0	.0	.3	.0	.0	.0	.0	.0	.1	2.4	2.5	2.5	1.9	1.0	.7	.4	2.5	2.9	2.9
145. *	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	2.3	2.4	2.4	1.9	1.1	.6	.4	2.5	2.8	2.8
150. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.3	2.4	2.4	1.8	1.1	.6	.5	2.6	2.9	2.5
155. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	2.2	2.3	2.3	1.7	1.0	.7	.4	2.6	2.7	2.3
160. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.3	2.4	1.7	.8	.8	.5	2.6	2.6	2.4
165. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.4	2.4	1.6	1.0	.7	.5	2.8	2.7	2.2
170. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.4	2.6	1.4	.9	.8	.6	2.9	2.7	2.1
175. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.4	2.5	2.6	1.3	.9	.8	.7	2.7	2.7	1.7
180. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.4	2.4	2.6	1.3	.8	.5	.9	2.3	2.2	1.8
185. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.4	2.5	1.2	.7	.7	1.0	2.1	2.0	1.5
190. *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	2.4	2.5	1.0	.9	1.0	1.5	1.9	1.7	1.2
195. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	2.2	2.4	2.5	1.1	.8	1.0	1.9	1.5	1.5	1.3
200. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.2	2.4	2.5	1.0	1.1	1.3	2.1	1.2	1.3	1.4
205. *	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	2.3	2.4	2.7	1.1	1.2	1.6	2.3	1.0	1.0	1.5

1

JOB: Site 1 Opt 8 2030 AM 1B8AM30.DAT RUN: Site 1 Opt 8 2030 AM

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	2.5	2.4	2.7	1.2	1.3	2.0	2.7	.9	1.0	1.5
215. *	.0	.0	.0	.0	.0	.0	.4	.1	.0	.1	2.5	2.7	2.8	1.4	1.4	2.0	2.7	.7	1.0	1.4
220. *	.0	.0	.0	.1	.0	.0	.6	.1	.1	.1	2.7	2.7	2.8	1.5	1.9	2.1	2.7	.5	.9	1.4
225. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	2.7	2.9	2.9	1.6	2.1	2.1	2.5	.5	.9	1.4
230. *	.1	.1	.1	.1	.0	.0	.7	.1	.1	.1	2.8	3.0	2.8	2.0	2.2	2.3	2.5	.5	.8	1.2
235. *	.1	.1	.1	.1	.0	.0	.8	.1	.1	.1	2.9	3.2	3.2	2.1	2.4	2.4	2.4	.5	.9	1.3
240. *	.1	.1	.1	.1	.0	.0	.9	.2	.1	.1	3.0	3.4	3.3	2.3	2.5	2.2	2.4	.5	.9	1.2
245. *	.1	.1	.1	.3	.0	.0	1.1	.3	.1	.2	3.3	3.7	3.4	2.5	2.5	2.1	2.3	.5	.8	1.1
250. *	.4	.4	.4	.4	.0	.0	1.3	.5	.4	.3	3.8	3.8	3.7	2.7	2.3	2.1	2.1	.3	.7	1.1
255. *	.7	.7	.9	.9	.1	.1	1.8	.9	.8	.8	3.7	3.8	3.6	2.6	2.2	1.8	1.9	.2	.6	1.0
260. *	.9	1.2	1.4	1.6	.1	.2	2.3	1.4	1.3	1.2	3.6	3.8	3.7	2.4	2.0	1.8	1.8	.1	.4	.8
265. *	1.4	1.6	1.8	2.2	.4	.5	2.8	1.9	1.7	1.6	3.2	3.4	3.2	2.2	1.7	1.6	1.7	.1	.2	.6
270. *	1.9	2.1	2.5	2.6	.7	.7	3.1	2.4	2.1	2.0	2.3	2.9	2.7	1.7	1.5	1.5	1.7	.0	.2	.4
275. *	2.1	2.6	2.9	3.1	.8	1.0	3.5	2.4	2.5	2.3	1.9	2.1	1.9	1.4	1.5	1.4	1.7	.0	.0	.2
280. *	2.5	2.9	3.2	3.3	1.2	1.2	3.4	2.5	2.1	2.2	1.1	1.5	1.4	1.2	1.3	1.4	1.7	.0	.0	.0
285. *	2.4	3.0	3.4	3.4	1.3	1.4	3.2	2.5	2.1	2.2	.8	1.2	1.2	1.0	1.2	1.4	1.7	.0	.0	.0
290. *	2.4	3.0	3.3	3.1	1.5	1.6	2.7	2.0	1.8	2.1	.6	.9	.8	1.0	1.2	1.4	1.8	.0	.0	.0
295. *	2.3	2.9	3.3	3.0	1.5	1.5	2.4	1.9	1.9	2.3	.4	.5	.8	1.0	1.3	1.4	1.7	.0	.0	.0
300. *	2.3	2.9	3.3	2.8	1.4	1.5	2.3	1.7	2.1	2.0	.3	.6	.7	1.0	1.3	1.4	1.7	.0	.0	.0
305. *	2.1	2.9	3.1	2.5	1.4	1.4	1.8	1.7	1.9	2.1	.3	.5	.8	1.0	1.3	1.4	1.7	.0	.0	.0
310. *	2.0	2.8	3.0	2.3	1.5	1.5	1.7	1.6	2.1	2.1	.3	.5	.8	1.1	1.3	1.4	1.7	.0	.0	.0
315. *	1.9	2.9	3.0	2.2	1.5	1.3	1.6	1.5	2.2	2.0	.3	.5	.7	1.1	1.2	1.4	1.8	.0	.0	.0
320. *	1.9	2.8	2.9	1.8	1.5	1.2	1.4	1.7	2.2	1.9	.3	.5	.7	1.1	1.3	1.5	1.8	.0	.0	.0
325. *	1.9	2.8	2.7	1.8	1.3	1.2	1.3	1.6	2.3	1.9	.3	.5	.6	1.1	1.4	1.5	1.9	.0	.0	.0
330. *	1.8	2.7	2.8	1.6	1.3	1.2	1.5	1.7	2.1	2.0	.3	.5	.6	1.2	1.4	1.6	1.9	.0	.0	.0
335. *	1.8	2.7	2.7	1.5	1.2	1.2	1.5	1.8	2.2	1.9	.3	.5	.5	1.3	1.4	1.6	2.0	.0	.0	.0
340. *	1.8	2.7	2.7	1.6	1.2	1.2	1.9	2.0	2.2	1.8	.2	.5	.6	1.3	1.7	1.7	2.0	.0	.0	.0
345. *	1.8	2.7	2.7	1.6	1.1	1.2	1.9	2.1	2.2	1.8	.2	.5	.6	1.2	1.7	1.6	2.2	.1	.2	.1
350. *	1.8	2.7	2.7	1.7	1.3	1.3	2.1	2.2	2.2	1.9	.1	.3	.7	1.3	1.7	1.7	2.2	.2	.3	.2
355. *	1.8	2.7	2.8	1.9	1.4	1.7	2.2	2.3	2.2	1.8	.1	.2	.6	1.4	1.7	1.7	2.2	.4	.6	.5
360. *	1.8	2.7	2.8	2.0	1.6	1.4	2.3	2.2	2.1	1.7	.0	.2	.3	1.2	1.5	1.4	2.1	.6	.9	1.0
MAX *	3.1	3.5	3.6	3.4	1.6	1.7	3.5	2.5	2.5	2.3	3.8	3.8	3.7	2.7	2.5	2.4	2.7	2.9	2.9	3.2
DEGR. *	60	40	15	285	0	355	275	280	275	275	250	250	250	250	240	235	210	170	140	105

1

JOB: Site 1 Opt 8 2030 AM 1B8AM30.DAT RUN: Site 1 Opt 8 2030 AM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.4	.1	.0	.0

5.	*	.8	.1	.0	.0
10.	*	1.2	.2	.1	.0
15.	*	1.7	.4	.2	.0
20.	*	2.0	.6	.3	.2
25.	*	2.0	.7	.4	.3
30.	*	1.9	.8	.6	.3
35.	*	1.8	.7	.7	.4
40.	*	1.8	.8	.6	.4
45.	*	1.7	.8	.6	.5
50.	*	1.6	.7	.6	.5
55.	*	1.5	.8	.7	.5
60.	*	1.4	.8	.7	.6
65.	*	1.2	1.0	1.0	.7
70.	*	1.2	1.3	1.1	1.1
75.	*	1.5	1.7	1.5	1.3
80.	*	1.8	2.3	2.1	1.9
85.	*	2.1	2.8	2.7	2.8
90.	*	2.5	2.9	2.8	3.2
95.	*	2.7	3.2	3.2	3.4
100.	*	2.6	2.9	3.0	3.3
105.	*	2.3	2.7	3.0	3.3
110.	*	2.2	2.5	2.9	3.5
115.	*	1.9	2.3	2.9	3.1
120.	*	1.9	2.5	2.8	3.0
125.	*	1.6	2.4	2.9	2.8
130.	*	1.6	2.4	2.9	2.7
135.	*	1.6	2.5	2.8	2.5
140.	*	1.5	2.5	2.6	2.5
145.	*	1.5	2.5	2.6	2.4
150.	*	1.6	2.6	2.5	2.2
155.	*	1.5	2.7	2.5	2.1
160.	*	1.5	2.7	2.5	2.1
165.	*	1.4	2.7	2.5	2.2
170.	*	1.6	2.6	2.6	2.2
175.	*	1.6	2.5	2.6	2.3
180.	*	1.6	2.6	2.5	2.2
185.	*	1.6	2.6	2.5	2.2
190.	*	1.7	2.5	2.3	2.1
195.	*	1.8	2.5	2.3	2.1
200.	*	1.9	2.6	2.2	2.0
205.	*	1.9	2.6	2.3	2.1

1

JOB: Site 1 Opt 8 2030 AM 1B8AM30.DAT RUN: Site 1 Opt 8 2030 AM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.2	2.7	2.2	2.2
215.	*	2.2	2.7	2.4	2.4
220.	*	2.4	2.8	2.4	2.5
225.	*	2.3	2.7	2.5	2.6
230.	*	2.4	2.8	2.7	2.6
235.	*	2.4	2.9	2.8	2.8
240.	*	2.6	3.0	2.9	3.0
245.	*	2.5	3.1	3.1	3.0
250.	*	2.5	3.2	3.2	3.1
255.	*	2.3	3.2	3.2	3.1
260.	*	2.0	3.1	3.1	2.9
265.	*	1.6	2.6	2.6	2.6
270.	*	1.2	2.1	2.1	2.1
275.	*	.6	1.5	1.5	1.5
280.	*	.3	1.0	1.0	1.0
285.	*	.1	.6	.6	.7
290.	*	.1	.4	.4	.4
295.	*	.0	.3	.3	.3
300.	*	.0	.2	.2	.2
305.	*	.0	.2	.2	.2
310.	*	.0	.1	.1	.2
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.1	.1	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.2	.0	.0	.0
360.	*	.4	.1	.0	.0
MAX	*	2.7	3.2	3.2	3.5
DEGR.	*	95	255	255	110

THE HIGHEST CONCENTRATION IS 3.80 PPM AT 250 DEGREES FROM REC12.
THE 2ND HIGHEST CONCENTRATION IS 3.80 PPM AT 250 DEGREES FROM REC11.
THE 3RD HIGHEST CONCENTRATION IS 3.70 PPM AT 250 DEGREES FROM REC13.

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Site 1 Opt 8 2014 PM 1B8PM14.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.       5.0
SE 164 S                  857.     1123.       5.0
SE 82 S                   939.     1128.       5.0
SE CNR                   1020.     1134.       5.0
SE 82 E                  1022.     1053.       5.0
NE 82 E                  1075.     1056.       5.0
NE CNR                   1076.     1137.       5.0
NE 82 N                  1156.     1142.       5.0
NE 164 N                 1238.     1146.       5.0
NE MID N                 1341.     1153.       5.0
NW MID N                 1453.     1280.       5.0
NW 164 N                 1316.     1272.       5.0
NW 82 N                  1234.     1269.       5.0
NW CNR                   1138.     1288.       5.0
NW 82 W                  1137.     1385.       5.0
NW 164 W                 1145.     1466.       5.0
NW MID W                 1156.     1626.       5.0
SW MID W                 1072.     1597.       5.0
SW 164 W                 1043.     1434.       5.0
SW 82 W                  1026.     1354.       5.0
SW CNR                    995.     1273.       5.0
SW 82 S                   900.     1248.       5.0
SW 164 S                  819.     1243.       5.0
SW MID S                  692.     1235.       5.0
Site 1 Opt 8 2014 PM                     27  1   0
  1
NB         Rt1 aprch AG    58.  1109.   581.  1136.    398511.4  0.  56   30.
  1
NB         Rt1 thru  AG   582.  1136.  1083.  1166.    296511.4  0.  56   30.
  2
NB         Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       120        59       2.0 2965  102.2 1678 1 3
  1
NB         Rt1 left  AG   572.  1167.  1065.  1195.    101511.4  0.  44   30.
  2
NB         Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       120        96       2.0 1015  102.2 1700 1 3
  1
NB         Rt1 departAG  1085.  1167.  1470.  1188.    320011.4  0.  56   30.
  1
NB         Rt1 departAG  1470.  1188.  1784.  1227.    320011.4  0.  44   30.
  1
NB         Rt1 departAG  1784.  1227.  2072.  1272.    320011.4  0.  44   30.
  1
SB         Rt1 aprch AG  2069.  1311.  1694.  1264.    256511.4  0.  44   30.
  1
SB         Rt1 aprch AG  1694.  1264.  1395.  1248.    256511.4  0.  44   30.
  1
SB         Rt1 th+rt AG  1395.  1248.  1057.  1231.    256011.4  0.  56   30.
  2
SB         Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       120        80       2.0 2560  102.2 1660 1 3
  1
SB         Rt1 left  AG  1378.  1236.  1241.  1217.      1011.4  0.  32   30.
```

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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      1011.4  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       120       115       2.0   10  102.2 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    298011.4  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    298011.4  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     78511.4  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     78511.4  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     78511.4  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       120        95       2.0  785  102.2 1523 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      3011.4  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.     16011.4  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       120       104       2.0  160  102.2 1706 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.    128511.4  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.    128511.4  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.    128511.4  0.  32   30.
1.0   04 1000.   0Y  5  0 72
```

1 CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.2, JUNE 2000

JOB: Site 1 Opt 8 2014 PM 1B8PM14.DAT RUN: Site 1 Opt 8 2014 PM
DATE: 05/10/2009 TIME: 21:41:43.00

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	3985.	11.4	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	2965.	11.4	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	-1381.0	1023.4	2369.	267.	AG	404.	100.0	.0	36.0	1.24	120.3
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	1015.	11.4	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-1630.5	1045.2	2618.	267.	AG	439.	100.0	.0	24.0	1.79	133.0
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	3200.	11.4	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	3200.	11.4	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	3200.	11.4	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	2565.	11.4	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	2565.	11.4	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	2560.	11.4	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	5202.1	1435.6	4063.	87.	AG	548.	100.0	.0	36.0	1.72	206.4
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	10.	11.4	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	10.	11.4	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1157.4	1212.5	10.	87.	AG	263.	100.0	.0	12.0	.71	.5
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	2980.	11.4	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	2980.	11.4	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	785.	11.4	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	785.	11.4	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	785.	11.4	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1083.9	1486.8	204.	12.	AG	651.	100.0	.0	36.0	.98	10.4
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	30.	11.4	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	160.	11.4	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1050.4	1095.5	45.	180.	AG	475.	100.0	.0	24.0	.47	2.3
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	1285.	11.4	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	1285.	11.4	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	1285.	11.4	.0	32.0		

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JOB: Site 1 Opt 8 2014 PM 1B8PM14.DAT RUN: Site 1 Opt 8 2014 PM
DATE: 05/10/2009 TIME: 21:41:43.00

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	120	59	2.0	2965	1678	102.20	1	3
5. NB	Rt1 left	120	96	2.0	1015	1700	102.20	1	3
12. SB	Rt1th+rt	120	80	2.0	2560	1660	102.20	1	3
15. SB	Rt1 left	120	115	2.0	10	1752	102.20	1	3
21. EB	Rt28 aprch	120	95	2.0	785	1523	102.20	1	3
24. WB	Rt28 aprch	120	104	2.0	160	1706	102.20	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

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JOB: Site 1 Opt 8 2014 PM 1B8PM14.DAT RUN: Site 1 Opt 8 2014 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0. *	3.6	3.7	3.8	2.6	2.0	2.1	2.8	2.9	2.5	2.5	.0	.1	.1	.7	.9	.7	1.0	.1	.4	.7
5. *	3.6	3.6	3.8	2.9	1.8	1.8	2.8	2.6	2.4	2.4	.0	.0	.1	.5	.8	.6	1.0	.3	.6	.9
10. *	3.5	3.5	4.0	2.9	2.1	1.6	2.5	2.3	2.3	2.3	.0	.0	.0	.5	.7	.6	.9	.3	.7	1.2
15. *	3.5	3.7	4.1	2.9	2.3	1.5	2.2	2.3	2.3	2.3	.0	.0	.0	.3	.5	.4	.7	.5	1.2	1.7
20. *	3.5	3.8	4.3	2.8	2.2	1.2	2.0	2.3	2.4	2.3	.0	.0	.0	.1	.3	.2	.6	.7	1.5	2.0
25. *	3.7	4.0	4.1	2.6	1.8	1.3	2.1	2.3	2.4	2.4	.0	.1	.1	.0	.3	.1	.4	.7	1.6	2.3
30. *	3.9	4.1	4.3	2.6	1.8	1.2	2.0	2.5	2.4	2.5	.0	.1	.1	.0	.1	.0	.2	.7	1.8	2.6
35. *	3.9	4.4	4.0	2.3	1.8	1.2	2.2	2.5	2.4	2.5	.0	.1	.1	.0	.0	.0	.2	.7	2.0	2.7
40. *	4.3	4.5	4.0	2.5	1.7	1.3	2.3	2.6	2.6	2.6	.0	.1	.1	.0	.0	.0	.1	.7	2.1	2.7
45. *	4.5	4.7	3.8	2.5	1.7	1.4	2.5	2.7	2.7	2.7	.0	.1	.1	.0	.0	.0	.1	.6	2.3	2.8
50. *	4.8	4.6	3.7	2.7	1.7	1.6	2.7	3.0	2.9	2.9	.0	.1	.1	.0	.0	.0	.1	.6	2.3	2.6
55. *	5.0	4.8	3.6	2.9	1.7	1.6	2.9	2.9	3.0	2.9	.1	.2	.1	.0	.0	.0	.0	.6	2.4	2.7
60. *	5.1	4.5	3.5	3.3	1.7	1.5	3.1	3.1	3.0	3.0	.2	.2	.3	.0	.0	.0	.0	.6	2.4	2.6
65. *	5.0	4.6	3.7	3.4	1.8	1.5	3.1	3.3	3.4	3.4	.3	.6	.5	.1	.0	.0	.0	.6	2.4	2.4
70. *	5.1	4.6	3.9	3.9	1.7	1.7	3.3	3.5	3.4	3.4	.8	.9	.9	.2	.0	.0	.0	.6	2.4	2.5
75. *	5.0	4.5	3.7	4.0	1.6	1.5	3.4	3.5	3.4	3.4	1.4	1.5	1.6	.6	.1	.1	.0	.6	2.3	2.5
80. *	4.5	4.2	3.5	3.9	1.3	1.2	3.2	3.3	3.1	3.2	2.2	2.5	2.5	1.1	.2	.1	.1	.7	2.4	2.6
85. *	3.7	3.6	3.2	3.7	1.2	.9	2.8	2.8	2.6	2.7	3.0	3.5	3.2	1.8	.5	.2	.1	.7	2.6	3.0
90. *	2.8	2.5	2.6	3.3	.6	.5	2.2	2.2	2.1	2.2	3.8	4.1	3.9	2.3	.9	.4	.2	.7	2.8	3.5
95. *	2.1	1.8	1.8	2.4	.3	.2	1.3	1.6	1.5	1.6	4.1	4.4	4.4	2.7	1.1	.7	.3	.8	3.2	3.7
100. *	1.1	1.2	1.1	2.1	.2	.1	.9	.9	.8	.9	4.4	4.7	4.6	3.0	1.1	.9	.3	1.0	3.4	3.9
105. *	.7	.7	.7	1.7	.1	.0	.5	.5	.6	.6	4.4	4.8	4.8	3.0	1.4	.9	.5	1.2	3.6	3.9
110. *	.4	.3	.5	1.5	.1	.0	.2	.3	.3	.4	4.2	4.4	4.3	2.8	1.5	.9	.6	1.3	3.5	3.8
115. *	.2	.2	.3	1.5	.1	.0	.1	.2	.2	.2	4.2	4.1	4.2	2.8	1.4	1.0	.6	1.3	3.2	3.9
120. *	.1	.1	.2	1.3	.0	.0	.1	.2	.2	.2	3.7	4.1	3.9	2.7	1.3	1.1	.7	1.4	3.4	3.7
125. *	.1	.1	.2	1.2	.0	.0	.0	.1	.1	.1	3.6	3.8	3.8	2.6	1.3	.9	.7	1.1	3.5	3.5
130. *	.1	.1	.1	1.2	.0	.0	.0	.1	.1	.1	3.5	3.6	3.6	2.5	1.4	.9	.5	1.3	3.4	3.5
135. *	.1	.1	.1	1.1	.0	.0	.0	.1	.1	.1	3.3	3.5	3.4	2.4	1.2	1.0	.5	1.2	3.4	3.5
140. *	.1	.1	.1	1.0	.0	.0	.0	.1	.1	.1	3.2	3.4	3.3	2.3	1.2	1.0	.6	1.4	3.6	3.3
145. *	.1	.1	.1	.9	.0	.0	.0	.1	.1	.1	3.1	3.2	3.2	2.3	1.2	.8	.7	1.4	3.6	3.2
150. *	.1	.1	.1	.7	.0	.0	.0	.1	.1	.1	3.1	3.1	3.1	2.2	1.1	.8	.7	1.5	3.6	3.2
155. *	.0	.0	.0	.5	.0	.0	.0	.0	.0	.1	3.0	3.1	3.1	2.1	1.1	.9	.6	1.6	3.4	3.0
160. *	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	3.1	3.1	3.1	2.1	1.2	.8	.7	1.6	3.3	2.9
165. *	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	3.0	3.1	3.1	2.0	1.1	.8	.8	1.8	3.4	2.8
170. *	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	3.1	3.1	3.1	1.8	1.1	.8	.9	1.7	3.4	2.7
175. *	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	3.1	3.2	3.2	1.7	1.1	1.0	1.0	1.9	3.1	2.4
180. *	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	3.0	3.2	3.2	1.6	1.0	.9	1.1	2.0	3.1	2.4
185. *	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	3.1	3.1	3.1	1.5	1.1	1.2	1.2	1.9	2.7	2.0
190. *	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	3.1	3.1	3.1	1.5	1.2	1.5	1.7	1.5	2.0	1.7
195. *	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	2.9	3.1	3.1	1.5	1.3	1.6	2.1	1.5	1.7	1.6
200. *	.0	.0	.0	.1	.0	.0	.7	.1	.0	.1	3.0	3.1	3.1	1.5	1.7	2.0	2.1	1.3	1.8	1.5
205. *	.1	.1	.1	.1	.0	.0	.9	.1	.1	.1	3.1	3.1	3.1	1.3	2.0	2.2	2.3	1.3	1.5	1.7

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WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210. *	.1	.1	.1	.1	.0	.0	1.0	.1	.1	.1	3.3	3.3	3.2	1.7	2.2	2.7	2.2	1.1	1.6	1.5
215. *	.1	.1	.1	.1	.0	.1	1.1	.1	.1	.1	3.3	3.3	3.4	1.7	2.1	2.9	2.3	1.0	1.5	1.7
220. *	.1	.1	.1	.1	.0	.1	1.2	.1	.1	.1	3.4	3.5	3.4	2.0	2.7	2.9	2.1	.9	1.4	1.6
225. *	.1	.1	.1	.1	.0	.1	1.3	.1	.1	.1	3.6	3.6	3.5	2.2	2.9	3.2	1.9	.8	1.4	1.7
230. *	.1	.1	.1	.1	.0	.1	1.4	.2	.1	.2	3.7	3.9	3.6	2.4	3.0	3.3	1.8	.8	1.3	1.8
235. *	.1	.2	.2	.2	.0	.1	1.5	.2	.2	.2	3.9	4.0	4.1	2.8	3.4	3.4	1.7	.9	1.3	1.8
240. *	.3	.3	.3	.3	.0	.1	1.6	.5	.2	.3	4.2	4.3	4.4	3.0	3.4	3.2	1.5	.8	1.4	1.9
245. *	.5	.6	.5	.5	.0	.1	1.8	.6	.6	.5	4.4	4.9	4.5	3.4	3.4	3.0	1.3	.7	1.3	1.9
250. *	.9	.9	1.0	1.1	.0	.1	2.3	1.3	1.0	.8	4.8	4.9	4.6	3.5	3.4	3.0	1.3	.6	1.2	1.8
255. *	1.7	1.7	1.8	1.8	.3	.4	2.9	1.8	1.6	1.6	5.0	4.9	4.7	3.6	3.1	2.5	1.3	.6	1.0	1.6
260. *	2.5	2.5	2.8	3.0	.5	.7	3.9	2.9	2.4	2.2	4.7	4.9	4.4	3.2	2.9	2.5	.9	.2	.8	1.2
265. *	3.4	3.7	3.8	4.0	1.1	1.2	4.6	3.5	3.2	3.0	4.2	4.3	4.0	3.0	2.6	2.3	.9	.2	.6	.9
270. *	4.4	4.5	4.6	4.8	1.5	1.6	5.1	4.0	3.6	3.5	3.5	3.7	3.2	2.4	2.3	1.9	.7	.0	.2	.6
275. *	5.0	5.0	5.1	5.1	1.8	2.0	5.3	4.2	3.6	3.5	2.3	2.7	2.6	1.8	2.1	1.6	.7	.0	.1	.3
280. *	5.2	5.4	5.4	5.2	2.1	2.3	5.3	4.0	3.6	3.6	1.5	1.8	1.8	1.5	1.8	1.5	.7	.0	.0	.0
285. *	5.2	5.3	5.4	5.1	2.4	2.5	4.9	3.8	3.5	3.5	1.0	1.3	1.4	1.2	1.7	1.4	.7	.0	.0	.0
290. *	4.9	4.9	5.0	4.8	2.2	2.3	4.4	3.4	3.1	3.1	.6	1.0	1.1	1.2	1.7	1.2	.7	.0	.0	.0
295. *	4.7	4.9	4.9	4.3	2.2	2.4	3.9	3.1	2.9	3.2	.4	.8	1.0	1.2	1.8	1.1	.7	.0	.0	.0
300. *	4.5	4.6	4.7	4.0	2.1	2.2	3.3	2.6	2.9	3.0	.2	.6	.9	1.2	1.7	1.0	.7	.0	.0	.0
305. *	4.4	4.4	4.4	3.6	2.1	2.2	2.9	2.5	2.7	3.0	.1	.5	.8	1.3	1.7	.9	.7	.0	.0	.0
310. *	4.1	4.2	4.3	3.4	1.8	2.1	2.5	2.3	2.7	3.0	.1	.6	.8	1.3	1.7	.8	.7	.0	.0	.0
315. *	4.1	4.1	4.1	3.1	1.9	2.0	2.4	2.4	2.7	3.0	.0	.4	.6	1.3	1.5	.7	.7	.0	.0	.0
320. *	3.7	3.7	3.7	2.7	1.9	1.9	2.2	2.4	2.7	2.8	.1	.3	.7	1.3	1.5	.7	.8	.0	.0	.0
325. *	3.7	3.7	3.7	2.5	1.7	1.9	2.1	2.3	2.9	2.7	.1	.3	.6	1.4	1.5	.7	.8	.0	.0	.0
330. *	3.6	3.6	3.7	2.3	1.7	2.1	2.2	2.5	2.7	2.5	.1	.3	.5	1.5	1.4	.7	.8	.0	.0	.0
335. *	3.5	3.5	3.5	2.0	1.5	2.0	2.2	2.4	2.7	2.6	.1	.2	.4	1.5	1.4	.8	.9	.0	.0	.0
340. *	3.5	3.5	3.7	2.2	1.5	2.1	2.5	2.5	2.6	2.4	.1	.2	.4	1.3	1.2	.8	.9	.0	.0	.0
345. *	3.5	3.5	3.6	2.1	1.4	2.1	2.6	2.6	2.5	2.4	.1	.2	.4	1.2	1.3	.8	.9	.0	.1	.0
350. *	3.6	3.7	3.8	2.3	1.5	2.0	2.7	2.9	2.6	2.6	.0	.1	.2	1.1	1.2	.8	1.0	.0	.1	.1
355. *	3.6	3.7	3.7	2.4	1.8	2.1	2.8	2.9	2.5	2.6	.0	.1	.2	.9	1.2	.9	1.0	.1	.2	.3
360. *	3.6	3.7	3.8	2.6	2.0	2.1	2.8	2.9	2.5	2.5	.0	.1	.1	.7	.9	.7	1.0	.1	.4	.7
MAX *	5.2	5.4	5.4	5.2	2.4	2.5	5.3	4.2	3.6	3.6	5.0	4.9	4.8	3.6	3.4	3.4	2.3	2.0	3.6	3.9
DEGR. *	280	280	280	280	285	285	275	275	280	280	255	260	105	255	235	235	205	180	105	105

1

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)*	REC21	REC22	REC23	REC24
0. *	.2	.0	.0	.0

5.	*	.5	.0	.0	.0
10.	*	.8	.0	.0	.0
15.	*	1.2	.1	.0	.0
20.	*	1.6	.3	.1	.1
25.	*	1.9	.4	.2	.1
30.	*	2.0	.5	.4	.1
35.	*	2.0	.5	.4	.2
40.	*	2.0	.8	.4	.2
45.	*	2.1	.9	.5	.3
50.	*	1.9	.9	.4	.3
55.	*	1.8	.9	.6	.4
60.	*	1.6	.9	.8	.5
65.	*	1.5	1.1	1.0	.7
70.	*	1.5	1.2	1.3	1.3
75.	*	1.8	1.9	1.7	1.6
80.	*	2.4	2.7	2.4	2.3
85.	*	2.7	3.1	3.2	3.1
90.	*	3.1	3.4	3.5	3.6
95.	*	3.2	3.6	3.7	3.9
100.	*	3.2	3.3	3.7	4.0
105.	*	2.8	3.2	3.7	4.0
110.	*	2.6	3.0	3.4	3.8
115.	*	2.2	2.9	3.6	3.9
120.	*	2.2	2.9	3.5	3.7
125.	*	2.0	2.8	3.6	3.7
130.	*	1.9	2.9	3.4	3.6
135.	*	1.8	2.9	3.2	3.4
140.	*	1.9	3.0	3.1	3.3
145.	*	1.9	3.0	3.1	3.1
150.	*	1.9	3.0	3.0	3.1
155.	*	1.9	3.0	3.0	3.0
160.	*	1.9	3.0	2.9	2.9
165.	*	1.7	3.1	3.0	3.1
170.	*	1.9	3.1	3.1	3.1
175.	*	2.0	3.1	3.1	3.1
180.	*	2.1	3.1	3.1	3.1
185.	*	1.9	3.1	3.1	3.1
190.	*	2.1	3.1	2.9	3.1
195.	*	2.2	3.0	2.9	2.9
200.	*	2.3	3.1	3.0	3.0
205.	*	2.4	3.1	3.1	3.2

1

JOB: Site 1 Opt 8 2014 PM 1B8PM14.DAT RUN: Site 1 Opt 8 2014 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	2.6	3.1	3.1	3.2
215.	*	2.7	3.2	3.2	3.4
220.	*	2.8	3.3	3.4	3.4
225.	*	2.9	3.5	3.6	3.6
230.	*	3.1	3.8	3.6	3.8
235.	*	3.2	4.0	3.9	3.9
240.	*	3.2	4.2	4.1	4.2
245.	*	3.4	4.1	4.2	4.2
250.	*	3.5	4.4	4.4	4.5
255.	*	3.3	4.3	4.3	4.2
260.	*	2.9	4.0	4.0	3.8
265.	*	2.3	3.4	3.4	3.3
270.	*	1.6	2.7	2.6	2.6
275.	*	1.0	1.7	1.7	1.8
280.	*	.4	1.1	1.1	1.2
285.	*	.2	.6	.6	.6
290.	*	.1	.3	.3	.4
295.	*	.0	.2	.2	.3
300.	*	.0	.2	.2	.2
305.	*	.0	.1	.1	.2
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.0	.1	.1
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.0	.0	.0	.0
355.	*	.1	.0	.0	.0
360.	*	.2	.0	.0	.0
MAX	*	3.5	4.4	4.4	4.5
DEGR.	*	250	250	250	250

THE HIGHEST CONCENTRATION IS 5.40 PPM AT 280 DEGREES FROM REC2 .
THE 2ND HIGHEST CONCENTRATION IS 5.40 PPM AT 280 DEGREES FROM REC3 .
THE 3RD HIGHEST CONCENTRATION IS 5.30 PPM AT 275 DEGREES FROM REC7 .

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Site 1 Opt 8 2030 PM 1B8PM30.DAT        60.0321.0.0000.000240.30480000    1
1
SE MID S                  743.     1116.        5.0
SE 164 S                  857.     1123.        5.0
SE 82 S                   939.     1128.        5.0
SE CNR                   1020.     1134.        5.0
SE 82 E                  1022.     1053.        5.0
NE 82 E                  1075.     1056.        5.0
NE CNR                   1076.     1137.        5.0
NE 82 N                  1156.     1142.        5.0
NE 164 N                 1238.     1146.        5.0
NE MID N                 1341.     1153.        5.0
NW MID N                 1453.     1280.        5.0
NW 164 N                 1316.     1272.        5.0
NW 82 N                  1234.     1269.        5.0
NW CNR                   1138.     1288.        5.0
NW 82 W                  1137.     1385.        5.0
NW 164 W                 1145.     1466.        5.0
NW MID W                 1156.     1626.        5.0
SW MID W                 1072.     1597.        5.0
SW 164 W                 1043.     1434.        5.0
SW 82 W                  1026.     1354.        5.0
SW CNR                    995.     1273.        5.0
SW 82 S                   900.     1248.        5.0
SW 164 S                  819.     1243.        5.0
SW MID S                  692.     1235.        5.0
Site 1 Opt 8 2030 PM                        27  1   0
  1
NB        Rt1 aprch AG    58.  1109.   581.  1136.    3665 9.2  0.  56   30.
  1
NB        Rt1 thru  AG   582.  1136.  1083.  1166.    2720 9.2  0.  56   30.
  2
NB        Rt1 thru  AG   984.  1160.   603.  1138.      0.  36   3
       125        44       2.0 2720   84.1 1678 1 3
  1
NB        Rt1 left  AG   572.  1167.  1065.  1195.     940 9.2  0.  44   30.
  2
NB        Rt1 left  AG   983.  1190.   604.  1169.      0.  24   2
       125        98       2.0  940   84.1 1700 1 3
  1
NB        Rt1 departAG  1085.  1167.  1470.  1188.    2995 9.2  0.  56   30.
  1
NB        Rt1 departAG  1470.  1188.  1784.  1227.    2995 9.2  0.  44   30.
  1
NB        Rt1 departAG  1784.  1227.  2072.  1272.    2995 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  2069.  1311.  1694.  1264.    2490 9.2  0.  44   30.
  1
SB        Rt1 aprch AG  1694.  1264.  1395.  1248.    2490 9.2  0.  44   30.
  1
SB        Rt1 th+rt AG  1395.  1248.  1057.  1231.    2485 9.2  0.  56   30.
  2
SB        Rt1th+rt  AG  1144.  1236.  1388.  1248.      0.  36   3
       125        68       2.0 2485   84.1 1654 1 3
  1
SB        Rt1 left  AG  1378.  1236.  1241.  1217.      10 9.2  0.  32   30.
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  1
SB        Rt1 left  AG  1240.  1217.  1058.  1208.      10 9.2  0.  32   30.
  2
SB        Rt1 left  AG  1147.  1212.  1237.  1216.      0.  12   1
       125       122       2.0   10   84.1 1752 1 3
  1
SB        Rt1 departAG  1056.  1231.   921.  1221.    2780 9.2  0.  56   30.
  1
SB        Rt1 departAG   921.  1221.    58.  1172.    2780 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1226.  2185.  1087.  1547.     755 9.2  0.  32   30.
  1
EB        Rt28 aprchAG  1088.  1547.  1072.  1425.     755 9.2  0.  56   30.
  1
EB        Rt28 aprchAG  1072.  1425.  1025.  1202.     755 9.2  0.  56   30.
  2
EB        Rt28 aprchAG  1043.  1287.  1068.  1409.      0.  36   3
       125       109       2.0  755   84.1 1523 1 3
  1
EB        Rt28 deparAG  1039.  1194.  1043.  1015.      30 9.2  0.  32   30.
  1
WB        Rt28 aprchAG  1052.  1015.  1049.  1190.     160 9.2  0.  44   30.
  2
WB        Rt28 aprchAG  1050.  1141.  1051.  1019.      0.  24   2
       125       116       2.0  160   84.1 1706 1 3
  1
WB        Rt28 deparAG  1069.  1197.  1121.  1424.    1265 9.2  0.  44   30.
  1
WB        Rt28 deparAG  1121.  1424.  1126.  1570.    1265 9.2  0.  32   30.
  1
WB        Rt28 deparAG  1126.  1570.  1257.  2180.    1265 9.2  0.  32   30.
1.0   04 1000.   0Y  5  0 72
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JOB: Site 1 Opt 8 2030 PM 1B8PM30.DAT RUN: Site 1 Opt 8 2030 PM
DATE: 05/10/2009 TIME: 21:56:11.10

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 321. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION		X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. NB	Rt1 aprch	58.0	1109.0	581.0	1136.0	524.	87.	AG	3665.	9.2	.0	56.0		
2. NB	Rt1 thru	582.0	1136.0	1083.0	1166.0	502.	87.	AG	2720.	9.2	.0	56.0		
3. NB	Rt1 thru	984.0	1160.0	747.8	1146.4	237.	267.	AG	238.	100.0	.0	36.0	.88	12.0
4. NB	Rt1 left	572.0	1167.0	1065.0	1195.0	494.	87.	AG	940.	9.2	.0	44.0		
5. NB	Rt1 left	983.0	1190.0	-950.4	1082.9	1936.	267.	AG	354.	100.0	.0	24.0	1.51	98.4
6. NB	Rt1 depart	1085.0	1167.0	1470.0	1188.0	386.	87.	AG	2995.	9.2	.0	56.0		
7. NB	Rt1 depart	1470.0	1188.0	1784.0	1227.0	316.	83.	AG	2995.	9.2	.0	44.0		
8. NB	Rt1 depart	1784.0	1227.0	2072.0	1272.0	291.	81.	AG	2995.	9.2	.0	44.0		
9. SB	Rt1 aprch	2069.0	1311.0	1694.0	1264.0	378.	263.	AG	2490.	9.2	.0	44.0		
10. SB	Rt1 aprch	1694.0	1264.0	1395.0	1248.0	299.	267.	AG	2490.	9.2	.0	44.0		
11. SB	Rt1 th+rt	1395.0	1248.0	1057.0	1231.0	338.	267.	AG	2485.	9.2	.0	56.0		
12. SB	Rt1th+rt	1144.0	1236.0	2851.8	1320.0	1710.	87.	AG	368.	100.0	.0	36.0	1.18	86.9
13. SB	Rt1 left	1378.0	1236.0	1241.0	1217.0	138.	262.	AG	10.	9.2	.0	32.0		
14. SB	Rt1 left	1240.0	1217.0	1058.0	1208.0	182.	267.	AG	10.	9.2	.0	32.0		
15. SB	Rt1 left	1147.0	1212.0	1154.9	1212.4	8.	87.	AG	220.	100.0	.0	12.0	-.71	.4
16. SB	Rt1 depart	1056.0	1231.0	921.0	1221.0	135.	266.	AG	2780.	9.2	.0	56.0		
17. SB	Rt1 depart	921.0	1221.0	58.0	1172.0	864.	267.	AG	2780.	9.2	.0	56.0		
18. EB	Rt28 aprch	1226.0	2185.0	1087.0	1547.0	653.	192.	AG	755.	9.2	.0	32.0		
19. EB	Rt28 aprch	1088.0	1547.0	1072.0	1425.0	123.	187.	AG	755.	9.2	.0	56.0		
20. EB	Rt28 aprch	1072.0	1425.0	1025.0	1202.0	228.	192.	AG	755.	9.2	.0	56.0		
21. EB	Rt28 aprch	1043.0	1287.0	1300.8	2545.2	1284.	12.	AG	590.	100.0	.0	36.0	1.72	65.2
22. EB	Rt28 depar	1039.0	1194.0	1043.0	1015.0	179.	179.	AG	30.	9.2	.0	32.0		
23. WB	Rt28 aprch	1052.0	1015.0	1049.0	1190.0	175.	359.	AG	160.	9.2	.0	44.0		
24. WB	Rt28 aprch	1050.0	1141.0	1051.8	924.7	216.	180.	AG	419.	100.0	.0	24.0	1.18	11.0
25. WB	Rt28 depar	1069.0	1197.0	1121.0	1424.0	233.	13.	AG	1265.	9.2	.0	44.0		
26. WB	Rt28 depar	1121.0	1424.0	1126.0	1570.0	146.	2.	AG	1265.	9.2	.0	32.0		
27. WB	Rt28 depar	1126.0	1570.0	1257.0	2180.0	624.	12.	AG	1265.	9.2	.0	32.0		

JOB: Site 1 Opt 8 2030 PM 1B8PM30.DAT RUN: Site 1 Opt 8 2030 PM
DATE: 05/10/2009 TIME: 21:56:11.10

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION		CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
3. NB	Rt1 thru	125	44	2.0	2720	1678	84.10	1	3
5. NB	Rt1 left	125	98	2.0	940	1700	84.10	1	3
12. SB	Rt1th+rt	125	68	2.0	2485	1654	84.10	1	3
15. SB	Rt1 left	125	122	2.0	10	1752	84.10	1	3
21. EB	Rt28 aprch	125	109	2.0	755	1523	84.10	1	3
24. WB	Rt28 aprch	125	116	2.0	160	1706	84.10	1	3

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SE MID S	743.0	1116.0	5.0
2. SE 164 S	857.0	1123.0	5.0
3. SE 82 S	939.0	1128.0	5.0
4. SE CNR	1020.0	1134.0	5.0
5. SE 82 E	1022.0	1053.0	5.0
6. NE 82 E	1075.0	1056.0	5.0
7. NE CNR	1076.0	1137.0	5.0
8. NE 82 N	1156.0	1142.0	5.0
9. NE 164 N	1238.0	1146.0	5.0
10. NE MID N	1341.0	1153.0	5.0
11. NW MID N	1453.0	1280.0	5.0
12. NW 164 N	1316.0	1272.0	5.0
13. NW 82 N	1234.0	1269.0	5.0
14. NW CNR	1138.0	1288.0	5.0
15. NW 82 W	1137.0	1385.0	5.0
16. NW 164 W	1145.0	1466.0	5.0
17. NW MID W	1156.0	1626.0	5.0
18. SW MID W	1072.0	1597.0	5.0
19. SW 164 W	1043.0	1434.0	5.0
20. SW 82 W	1026.0	1354.0	5.0
21. SW CNR	995.0	1273.0	5.0
22. SW 82 S	900.0	1248.0	5.0
23. SW 164 S	819.0	1243.0	5.0
24. SW MID S	692.0	1235.0	5.0

JOB: Site 1 Opt 8 2030 PM 1B8PM30.DAT RUN: Site 1 Opt 8 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to
the maximum concentration, only the first
angle, of the angles with same maximum
concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR)	*	REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	*	2.2	2.8	3.0	2.4	1.8	2.0	2.7	2.5	2.3	2.0	.1	.3	.6	1.4	1.9	1.8	2.6	.8	1.0	.9
5.	*	2.3	2.9	3.0	2.8	2.1	2.0	2.7	2.4	2.1	1.8	.1	.2	.4	1.2	1.6	1.6	2.4	1.2	1.6	1.6
10.	*	2.4	3.0	3.2	2.9	2.2	1.6	2.5	2.1	1.9	1.7	.0	.1	.2	.9	1.4	1.3	2.0	1.7	2.1	2.1
15.	*	2.4	3.0	3.5	2.7	2.4	1.4	2.2	1.9	1.8	1.7	.0	.0	.1	.5	.9	1.0	1.6	2.2	2.5	2.6
20.	*	2.7	3.3	3.6	2.5	2.4	1.2	1.9	1.8	1.7	1.7	.0	.0	.1	.2	.6	.5	1.1	2.5	3.0	2.9
25.	*	2.9	3.4	3.7	2.2	2.3	.9	1.6	1.9	1.8	1.7	.0	.0	.0	.1	.3	.3	.7	2.7	3.1	3.1
30.	*	3.0	3.6	3.4	1.9	2.1	.9	1.7	1.8	1.8	1.8	.0	.1	.1	.0	.1	.1	.4	2.8	3.0	3.0
35.	*	3.1	3.3	3.2	2.0	2.2	.9	1.7	1.8	1.7	1.8	.0	.1	.1	.0	.0	.0	.2	2.7	3.0	2.8
40.	*	3.2	3.7	2.9	1.8	2.0	.9	1.6	1.9	1.8	2.0	.0	.1	.1	.0	.0	.0	.1	2.6	2.8	2.7
45.	*	3.3	3.6	2.9	1.9	2.0	.9	1.8	2.0	2.0	2.0	.0	.1	.1	.0	.0	.0	.1	2.5	2.6	2.6
50.	*	3.4	3.6	2.7	2.1	2.0	1.1	2.0	2.1	2.1	2.2	.0	.1	.1	.0	.0	.0	.0	2.4	2.5	2.4
55.	*	3.3	3.4	2.7	2.1	2.2	1.1	2.0	2.2	2.1	2.1	.0	.1	.1	.0	.0	.0	.0	2.2	2.4	2.3
60.	*	3.6	3.4	2.5	2.1	2.2	1.1	2.3	2.2	2.3	2.3	.2	.2	.2	.0	.0	.0	.0	2.1	2.3	2.3
65.	*	3.7	3.2	2.7	2.4	2.2	1.2	2.2	2.3	2.3	2.4	.3	.4	.4	.1	.0	.0	.0	2.1	2.2	2.2
70.	*	3.4	3.2	2.7	2.7	2.2	1.1	2.5	2.6	2.6	2.5	.6	.6	.6	.1	.0	.0	.0	2.0	2.2	2.1
75.	*	3.2	3.1	2.6	2.9	2.3	1.0	2.4	2.5	2.5	2.4	.9	1.2	1.0	.4	.0	.0	.0	2.0	2.1	2.2
80.	*	3.2	3.0	2.6	3.0	2.0	.9	2.3	2.4	2.3	2.3	1.6	1.8	1.7	.7	.1	.0	.0	2.0	2.1	2.2
85.	*	2.6	2.4	2.1	2.7	1.5	.4	2.1	2.2	1.8	1.9	2.0	2.3	2.2	1.2	.2	.1	.0	2.0	2.1	2.3
90.	*	2.1	1.8	1.9	2.3	1.4	.3	1.3	1.6	1.6	1.6	2.6	2.7	2.9	1.7	.5	.2	.0	2.1	2.3	2.9
95.	*	1.4	1.3	1.2	1.8	1.2	.1	.9	1.0	.9	1.0	2.8	3.1	3.2	1.9	.8	.3	.1	2.1	2.7	3.1
100.	*	1.0	1.0	1.0	1.5	1.1	.0	.6	.7	.6	.6	3.1	3.4	3.3	2.2	.8	.5	.1	2.2	2.8	3.2
105.	*	.6	.6	.7	1.4	1.1	.0	.3	.3	.3	.4	3.1	3.4	3.1	1.9	1.0	.7	.2	2.4	2.9	3.1
110.	*	.4	.5	.6	1.2	1.1	.0	.2	.2	.2	.2	3.0	3.1	3.0	2.1	.9	.7	.3	2.3	2.8	3.1
115.	*	.3	.4	.5	1.1	1.1	.0	.1	.2	.1	.2	2.7	3.0	3.0	2.0	.9	.6	.4	2.5	2.9	3.2
120.	*	.2	.4	.5	1.2	1.1	.0	.1	.1	.1	.1	2.7	2.9	2.9	2.0	.9	.5	.6	2.4	2.9	3.0
125.	*	.2	.4	.5	1.2	1.1	.0	.0	.1	.1	.1	2.6	2.6	2.7	1.9	1.0	.7	.5	2.4	3.1	3.0
130.	*	.2	.3	.5	1.2	1.1	.0	.0	.1	.1	.1	2.5	2.7	2.6	1.8	1.0	.7	.4	2.5	2.8	3.0
135.	*	.1	.3	.5	1.3	1.2	.0	.0	.1	.1	.1	2.4	2.5	2.5	1.8	.9	.7	.4	2.6	2.9	2.9
140.	*	.1	.2	.5	1.4	1.2	.0	.0	.1	.1	.1	2.2	2.3	2.4	1.7	.9	.7	.5	2.5	2.9	2.9
145.	*	.1	.2	.4	1.4	1.2	.0	.0	.1	.1	.1	2.2	2.2	2.2	1.6	.9	.7	.6	2.7	2.9	2.7
150.	*	.0	.1	.3	1.3	1.2	.0	.0	.0	.0	.1	2.3	2.2	2.2	1.6	.9	.7	.5	2.7	2.9	2.8
155.	*	.0	.0	.2	1.2	1.1	.0	.1	.0	.0	.0	2.2	2.2	2.2	1.5	.8	.7	.4	2.9	2.9	2.8
160.	*	.0	.0	.2	1.2	1.0	.1	.1	.0	.0	.0	2.2	2.2	2.2	1.5	.8	.7	.4	2.8	3.1	2.5
165.	*	.0	.0	.1	1.1	.9	.2	.2	.0	.0	.0	2.2	2.2	2.2	1.4	.9	.7	.5	2.8	3.2	2.5
170.	*	.0	.0	.1	.9	.7	.3	.4	.0	.0	.0	2.2	2.2	2.2	1.3	.8	.7	.7	2.8	3.0	2.4
175.	*	.0	.0	.0	.7	.6	.4	.5	.0	.0	.0	2.2	2.3	2.3	1.3	.9	.9	.7	2.9	2.8	2.3
180.	*	.0	.0	.0	.6	.4	.6	.7	.0	.0	.0	2.2	2.3	2.3	1.2	1.0	.9	1.0	2.7	2.5	1.8
185.	*	.0	.0	.0	.4	.3	.8	.9	.0	.0	.0	2.3	2.2	2.2	1.2	1.0	1.0	1.4	2.3	2.4	1.7
190.	*	.0	.0	.0	.2	.2	1.0	1.1	.1	.0	.0	2.2	2.2	2.1	1.3	1.0	1.3	1.7	2.0	1.9	1.5
195.	*	.0	.0	.0	.1	.1	1.2	1.4	.1	.0	.0	2.2	2.2	2.2	1.3	1.1	1.5	2.2	1.5	1.6	1.3
200.	*	.0	.0	.0	.1	.0	1.3	1.4	.2	.0	.0	2.2	2.2	2.3	1.2	1.3	1.5	2.5	1.2	1.5	1.2
205.	*	.0	.0	.0	.1	.0	1.3	1.6	.4	.1	.1	2.2	2.3	2.4	1.3	1.6	1.9	2.9	.8	1.2	1.3

1

PAGE 4

JOB: Site 1 Opt 8 2030 PM 1B8PM30.DAT RUN: Site 1 Opt 8 2030 PM

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
210.	*	.1	.1	.1	.1	.0	1.4	1.6	.4	.2	.1	2.3	2.3	2.4	1.2	1.7	2.2	2.8	.7	1.0	1.2
215.	*	.1	.1	.1	.1	.0	1.4	1.6	.5	.2	.1	2.5	2.5	2.5	1.5	1.9	2.2	2.7	.6	.9	1.1
220.	*	.1	.1	.1	.1	.0	1.3	1.5	.5	.3	.1	2.6	2.7	2.7	1.7	2.1	2.4	2.9	.6	.9	1.3
225.	*	.1	.1	.1	.1	.0	1.3	1.5	.6	.3	.2	2.8	2.9	2.7	1.6	2.1	2.5	2.9	.6	.9	1.1
230.	*	.1	.1	.1	.1	.0	1.2	1.4	.6	.4	.2	2.8	2.9	2.8	1.9	2.2	2.8	2.7	.6	1.0	1.1
235.	*	.1	.1	.1	.1	.0	1.2	1.3	.6	.4	.2	2.9	3.0	2.9	2.1	2.5	2.6	2.5	.5	.9	1.3
240.	*	.1	.2	.2	.2	.0	1.2	1.3	.7	.4	.4	3.1	3.2	3.0	2.1	2.5	2.4	2.4	.4	.8	1.3
245.	*	.3	.2	.3	.4	.0	1.2	1.5	.6	.6	.5	3.1	3.3	3.3	2.4	2.6	2.4	2.3	.4	.7	1.1
250.	*	.4	.5	.6	.7	.0	1.2	1.8	1.0	.8	.8	3.6	3.5	3.2	2.5	2.2	2.2	2.3	.4	.6	1.2
255.	*	.7	1.0	1.1	1.1	.1	1.3	2.1	1.5	1.4	1.2	3.5	3.7	3.3	2.3	2.2	2.0	2.1	.2	.5	1.0
260.	*	1.3	1.3	1.6	1.7	.2	1.4	2.4	1.9	1.7	1.6	3.4	3.5	3.1	2.2	2.1	1.9	2.0	.1	.4	.7
265.	*	1.8	2.1	2.2	2.3	.5	1.8	3.1	2.3	2.1	1.9	2.8	3.1	2.8	2.0	1.9	1.7	1.9	.0	.2	.5
270.	*	2.1	2.5	2.7	2.9	.7	2.1	3.4	2.7	2.3	2.4	2.2	2.6	2.3	1.7	1.7	1.7	1.9	.0	.1	.2
275.	*	2.5	2.9	3.1	3.4	1.1	2.3	3.7	3.0	2.4	2.6	1.6	1.9	1.7	1.5	1.6	1.5	1.9	.0	.0	.2
280.	*	2.6	3.1	3.5	3.4	1.2	2.5	3.6	2.8	2.5	2.7	1.1	1.3	1.2	1.2	1.5	1.5	1.9	.0	.0	.0
285.	*	2.7	3.4	3.6	3.5	1.5	2.6	3.4	2.8	2.4	2.6	.7	.8	1.1	1.2	1.5	1.5	1.9	.0	.0	.0
290.	*	2.5	3.3	3.4	3.1	1.4	2.7	3.0	2.1	2.4	2.4	.5	.7	.8	1.1	1.5	1.5	1.9	.0	.0	.0
295.	*	2.6	3.3	3.3	3.0	1.5	2.8	2.6	2.1	2.1	2.5	.3	.6	.7	1.2	1.5	1.6	1.9	.0	.0	.0
300.	*	2.5	3.2	3.2	2.8	1.5	2.7	2.3	2.0	2.2	2.2	.3	.6	.8	1.2	1.5	1.5	1.9	.0	.0	.0
305.	*	2.3	3.2	3.2	2.7	1.5	2.6	2.2	2.0	2.0	2.4	.3	.6	.7	1.2	1.6	1.5	1.9	.0	.0	.0
310.	*	2.1	2.9	2.9	2.3	1.5	2.7	1.9	1.8	2.1	2.3	.3	.5	.7	1.2	1.5	1.6	1.9	.0	.0	.0
315.	*	2.1	2.8	2.9	2.3	1.3	2.7	1.8	1.8	2.2	2.3	.3	.6	.7	1.2	1.5	1.6	1.9	.0	.0	.0
320.	*	2.0	2.7	2.7	2.0	1.4	2.5	1.6	1.8	2.1	2.2	.3	.6	.7	1.3	1.5	1.6	1.9	.0	.0	.0
325.	*	2.0	2.7	2.7	1.8	1.3	2.5	1.5	2.0	2.3	2.2	.4	.5	.8	1.3	1.6	1.7	2.2	.0	.0	.0
330.	*	2.0	2.7	2.7	1.9	1.2	2.4	1.6	2.0	2.2	2.2	.4	.4	.7	1.3	1.7	1.8	2.3	.0	.0	.0
335.	*	1.9	2.6	2.6	1.7	1.2	2.0	1.7	2.1	2.3	2.1	.4	.5	.7	1.3	1.7	1.9	2.3	.0	.0	.0
340.	*	1.8	2.5	2.6	1.6	1.2	2.1	1.8	2.2	2.3	2.2	.4	.6	.8	1.5	1.8	1.9	2.5	.0	.0	.0
345.	*	2.0	2.7	2.7	1.8	1.2	2.3	2.1	2.2	2.2	2.2	.3	.5	.8	1.4	2.1	1.9	2.5	.1	.1	.1
350.	*	2.1	2.7	2.7	2.0	1.3	2.3	2.4	2.3	2.4	2.3	.2	.5	.8	1.6	2.0	2.0	2.6	.2	.4	.2
355.	*	2.2	2.7	2.8	2.1	1.7	2.1	2.5	2.5	2.4	2.1	.2	.5	.6	1.5	1.9	2.0	2.7	.5	.6	.5
360.	*	2.2	2.8	3.0	2.4	1.8	2.0	2.7	2.5	2.3	2.0	.1	.3	.6	1.4	1.9	1.8	2.6	.8	1.0	.9
MAX	*	3.7	3.7	3.7	3.5	2.4	2.8	3.7	3.0	2.6	2.7	3.6	3.7	3.3	2.5	2.6	2.8	2.9	2.9	3.2	3.2
DEGR.	*	65	40	25	285	20	295	275	275	70	280	250	255	100	250	245	230	205	155	165	100

1

PAGE 5

JOB: Site 1 Opt 8 2030 PM 1B8PM30.DAT RUN: Site 1 Opt 8 2030 PM

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
0.	*	.5	.1	.0	.0

5.	*	.8	.2	.1	.0
10.	*	1.5	.3	.1	.0
15.	*	1.8	.5	.2	.1
20.	*	2.1	.7	.4	.2
25.	*	2.1	.8	.7	.3
30.	*	2.3	.9	.7	.4
35.	*	2.1	.9	.8	.5
40.	*	2.0	.8	.8	.5
45.	*	1.7	.8	.6	.5
50.	*	1.7	.9	.6	.5
55.	*	1.6	.8	.6	.5
60.	*	1.4	.9	.6	.5
65.	*	1.4	1.0	1.0	.6
70.	*	1.4	1.0	1.0	.8
75.	*	1.4	1.4	1.2	1.1
80.	*	1.6	1.7	1.6	1.5
85.	*	2.1	2.2	2.3	2.0
90.	*	2.4	2.4	2.5	2.3
95.	*	2.4	2.7	2.7	2.6
100.	*	2.3	2.6	2.5	2.8
105.	*	2.1	2.5	2.6	3.0
110.	*	2.1	2.0	2.6	3.0
115.	*	1.7	2.1	2.7	2.8
120.	*	1.7	2.3	2.7	2.7
125.	*	1.5	2.3	2.8	2.6
130.	*	1.5	2.4	2.6	2.6
135.	*	1.5	2.4	2.6	2.5
140.	*	1.6	2.6	2.6	2.4
145.	*	1.6	2.5	2.4	2.2
150.	*	1.5	2.6	2.4	2.2
155.	*	1.5	2.4	2.4	2.1
160.	*	1.5	2.5	2.2	2.0
165.	*	1.5	2.3	2.2	1.9
170.	*	1.6	2.4	2.2	2.0
175.	*	1.6	2.2	2.3	2.1
180.	*	1.5	2.2	2.3	2.1
185.	*	1.6	2.2	2.2	2.0
190.	*	1.6	2.2	2.2	1.9
195.	*	1.5	2.2	2.2	1.9
200.	*	1.6	2.3	2.3	2.0
205.	*	1.7	2.3	2.3	2.0

1

JOB: Site 1 Opt 8 2030 PM 1B8PM30.DAT RUN: Site 1 Opt 8 2030 PM

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24
210.	*	1.9	2.4	2.2	2.2
215.	*	2.0	2.4	2.3	2.1
220.	*	2.1	2.4	2.3	2.2
225.	*	2.2	2.5	2.3	2.3
230.	*	2.2	2.5	2.4	2.4
235.	*	2.3	2.7	2.5	2.5
240.	*	2.3	2.8	2.6	2.6
245.	*	2.1	2.7	2.7	2.7
250.	*	2.2	2.9	2.7	2.7
255.	*	2.0	2.7	2.7	2.6
260.	*	1.7	2.5	2.5	2.4
265.	*	1.5	2.2	2.2	2.1
270.	*	.8	1.7	1.6	1.6
275.	*	.6	1.2	1.2	1.2
280.	*	.3	.6	.7	.7
285.	*	.1	.5	.5	.5
290.	*	.0	.2	.3	.3
295.	*	.0	.2	.2	.2
300.	*	.0	.1	.1	.1
305.	*	.0	.1	.1	.1
310.	*	.0	.1	.1	.1
315.	*	.0	.1	.1	.1
320.	*	.0	.1	.1	.1
325.	*	.0	.1	.1	.1
330.	*	.0	.1	.1	.1
335.	*	.0	.0	.0	.0
340.	*	.0	.0	.0	.0
345.	*	.0	.0	.0	.0
350.	*	.1	.0	.0	.0
355.	*	.3	.0	.0	.0
360.	*	.5	.1	.0	.0
MAX	*	2.4	2.9	2.8	3.0
DEGR.	*	90	250	125	105

THE HIGHEST CONCENTRATION IS 3.70 PPM AT 275 DEGREES FROM REC7 .
THE 2ND HIGHEST CONCENTRATION IS 3.70 PPM AT 65 DEGREES FROM REC1 .
THE 3RD HIGHEST CONCENTRATION IS 3.70 PPM AT 40 DEGREES FROM REC2 .

```
  45.  *    .4
  50.  *    .4
  55.  *    .4
  60.  *    .3
  65.  *    .2
  70.  *    .2
  75.  *    .2
  80.  *    .2
  85.  *    .2
  90.  *    .3
  95.  *    .3
 100.  *    .6
 105.  *    .7
 110.  *    .8
 115.  *    .8
 120.  *    .8
 125.  *    .8
 130.  *    .8
 135.  *    .8
 140.  *    .8
 145.  *    .7
 150.  *    .7
 155.  *    .7
 160.  *    .5
 165.  *    .5
 170.  *    .5
 175.  *    .5
 180.  *    .5
 185.  *    .5
 190.  *    .5
 195.  *    .5
 200.  *    .5
 205.  *    .5
1
                                                                                                                              PAGE  6
      JOB: Site 7 Opt 8    2030 PM - 7B8PM30.DAT               RUN: Site 7 Opt 8    2030 PM

 WIND ANGLE RANGE:   0.-360.

 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC21
 ------*------
 210.  *    .5
 215.  *    .5
 220.  *    .5
 225.  *    .6
 230.  *    .5
 235.  *    .5
 240.  *    .5
 245.  *    .6
 250.  *    .5
 255.  *    .5
 260.  *    .5
 265.  *    .5
 270.  *    .2
 275.  *    .1
 280.  *    .1
 285.  *    .0
 290.  *    .0
 295.  *    .0
 300.  *    .0
 305.  *    .0
 310.  *    .0
 315.  *    .0
 320.  *    .0
 325.  *    .0
 330.  *    .0
 335.  *    .0
 340.  *    .0
 345.  *    .0
 350.  *    .0
 355.  *    .0
 360.  *    .0
 ------*------
 MAX   *    .8
 DEGR. *  110

 THE HIGHEST CONCENTRATION IS    1.90 PPM AT  270 DEGREES FROM REC10.
 THE 2ND HIGHEST CONCENTRATION IS    1.80 PPM AT  190 DEGREES FROM REC14.
 THE 3RD HIGHEST CONCENTRATION IS    1.80 PPM AT   40 DEGREES FROM REC17.
```

Attachment B

Mobile Source Air Toxic Analysis

GUAM MILITARY RELOCATION

GUAM ROAD NETWORK

FINAL

MOBILE SOURCE AIR TOXIC ANALYSIS

PARSONS BRINCKERHOFF

April 29, 2010

1.0 Introduction

The relocation of 8,000 Marines and their families from Okinawa to Guam by 2014 is expected to have a significant impact on the local roads on Guam. Project-related changes in roadway volumes as a result of the Guam Military Relocation Project could affect local air quality conditions near the affected roadways. The result of the air quality analyses conducted for the Environmental Impact Statement (EIS) for this project is that the proposed project alternatives would not cause or exacerbate a violation of an air quality standard. In addition, while the EIS qualitatively addressed the potential affects of project-related changes on local mobile source air toxic (MSAT) concentrations (as per current FHWA guidance), the United States Environmental Protection Agency (EPA) and the Department of Defense (DOD) requested that a quantitative (screening-level) MSAT dispersion modeling analysis be conducted to determine whether these changes would be acceptable.

2.0 Air Toxics

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

As part of the National Environmental Policy Act (NEPA), EISs require review and evaluation of air toxics, as they could affect the quality of the human environment. For these analyses, the FHWA developed a tiered approach in their September 30, 2009 Interim Guidance Update on Mobile Source Air Toxic Analyses (MSAT) in NEPA documents, which includes the following three levels of analysis:

1. No analysis for projects with no potential for meaningful MSAT effects;

2. Qualitative analysis for projects with low potential MSAT effects; or

3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Using this methodology, an initial MSAT analysis for this project indicated that it would have a low potential for MSAT effects. However, a quantitative MSAT analysis was requested for this project based on the methodology described in the research report entitled, "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" (American Association of State Highway and Transportation Officials (AASHTO) 2007).

3.0 Approach

The analysis approach was developed based on available project information, potential community impact, and the public's level of concern. Not only were the impacts of the project on localized MSAT levels raised as a concern with this project, but several intersections in the project area under the Build alternatives are projected to have Annual Average Daily Traffic (AADTs) over the 40,000 threshold specified in the AASHTO report.

As a result, a screening-level MSAT dispersion modeling analysis was conducted based on the procedures provided in Appendix C of the AASHTO report to estimate whether the incremental health-related risk associated with the proposed project would exceed the following thresholds:

- A maximum total incremental carcinogenic risk from the exposure to all identified pollutants of 10 in a million (i.e., 10×10^{-6}); and

- A maximum total incremental non-carcinogenic Hazard Index risk from the exposure to all identified pollutants of 1.

The analysis has focused on the potential impacts of operational emissions rather than construction phase emissions, because the health-related risks, if any, associated with this project would primarily be the result of long-term exposure. This is because the roadway construction phase of this project is temporary (i.e., less than 5 years) and will be occurring at any given location for a relatively short period of time. Therefore, this analysis has focused on the long-term operational impacts of the project.

The following tasks were conducted for the dispersion modeling analysis:

- Local microscale sites (congested intersections) were selected for analysis.

- MSAT emission factors were estimated using EPA's MOBILE6.2 model (Note: input parameters to accurately model MSAT were determined through consultation with FHWA and EPA).

- CAL3QHCR dispersion modeling was conducted using worst case meteorology to estimate 1-hour concentrations of each MSAT, which were used to estimate acute (short-term) impacts. These 1-hour values were then converted, using conservative traffic and meteorological persistence factors, to annual values in order to estimate annual impacts.

Diesel PM was not quantitatively considered in the screening-level dispersion modeling analysis because of the significant limitations of the MOBILE6.2 model noted by the USEPA in the 2006 Conformity Rule (71 FR 12498):

> "We continue to believe that appropriate tools and guidance are necessary to ensure credible and meaningful PM2.5 and PM10 hot-spot analyses. Before such analyses can be performed, technical limitations in applying existing motor vehicle emission factor models must be addressed, and proper federal guidance for using dispersion models for PM hotspot analysis must be issued. With the release of MOBILE6.2, state and local transportation agencies now have an approved model for estimating regional PM2.5 and PM10 emission factors in SIP [State Implementation Plan] inventories and regional emissions analyses for transportation conformity. However, MOBILE6.2 has significant limitations that make it unsatisfactory for use in microscale analysis of PM2.5 and PM10 emissions as necessary for quantitative hot-spot analysis."

Federal guidance for using dispersion models for PM hotspot analyses has not been issued. As a result, a qualitative analysis of diesel PM was completed based on FHWA/USEPA's March 29, 2006 joint direction *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in* $PM_{2.5}$ *and* PM_{10} *Nonattainment and Maintenance Areas* (EPA420-B-06-902).

4.0 MSAT Considered

The seven priority MSAT compounds considered were:

- Acrolein, benzene, 1,3-butadiene, formaldehyde, and naphthalene were analyzed quantitatively;

- Polycyclic organic matter (POM) was considered as being comprised of the following compounds, which were quantitatively analyzed on a pollutant-by pollutant basis:

acenaphthene	chrysene
acenaphylene	debenz[a,h]anthracene
anthracene	fluoranthene
benzo(g,h,i) perylene	fluorene
benzo[b]fluoranthene	ideno[1,2,3-cd]pyrene
benzo[k]fluoranthene	phenanthrene, and
benz[a]anthracene	pyrene
benzo[a]pyrene	

- Diesel PM was analyzed qualitatively.

Table 1 presents each of the MSAT compounds considered, together with their applicable health guideline values. As shown, two of these compounds – acenaphthylene and benzo(g,h,i) perylene – have no health guideline values and, therefore, were not included in the screening-level dispersion modeling analysis.

Table 1 – Mobile Source Air Toxics

MSAT	CAS No.[1]	Toxicity	AIEC[2] (1-hour Values) (ug/m^3)	RfC[3] (Lifetime Exposure Values) (ug/m^3)	URF (Unit Risk Factors) $(ug/m^3)^{-1}$
Acrolein	107-02-8	non-carcinogen	0.19	0.02	
Benzene	71-43-2	carcinogen	1,300	30	7.8E-06 [4]
1,3-Butadiene	106-99-0	carcinogen		2.3	3.0E-05
Diesel PM	-	carcinogen		5.0[5]	[6]
Formaldehyde	50-00-0	carcinogen	94	9.8	1.3E-05
Naphthalene	91-20-3	non-carcinogen	75,000	3.0	
POM (Polycyclic Organic Matter) constituents:					
Acenaphthylene	208-24-2	non-carcinogen			
Acenaphthene	83-32-9	non-carcinogen	1300	210	
Anthracene	120-12-7	non-carcinogen	600	1,000	
Benzo(g,h,i) perylene	191-24-2	non-carcinogen			
Benzo[b]fluoranthene	205-99-2	carcinogen	600		1.1E-04
Benzo[k]fluoranthene	207-08-9	carcinogen	600		1.1E-04
Benz[a]anthracene	56-55-3	carcinogen	300		1.1E-04
Benzo[a]pyrene	50-32-8	carcinogen	600		1.1E-03
Chrysene	218-01-9	carcinogen	600		1.1E-05
Dibenzo[a,h]anthracene	53-70-3	carcinogen	30,000		1.2E-03
Fluoranthene	206-44-0	non-carcinogen	15	140	
Fluorene	86-73-7	non-carcinogen	11,560	140	
Ideno[1,2,3-cd]pyrene	193-39-5	carcinogen	500		1.1E-04
Phenanthrene	85-01-8	non-carcinogen	1.000		
Pyrene	129-00-0	non-carcinogen	15,000	110	

Notes:

1. *CAS Number = unique numerical identifiers for each chemical, elements, compounds, etc.*
2. *AIEC = Acute Inhalation Exposure Concentration (as provided by EPA)*
3. *RfC= Reference Concentration (which is a daily exposure during a lifetime).*
4. *The most conservative unit risk factor for benzene (from the range of 2.2E-06 to 7.8E-06) was used.*
5. *In addition, as stated in the USEPA's "Regulatory Impacts Analysis, Control of Hazardous Air Pollutants from Mobile Sources" (EPA420-R-07-002, February 2007): "The Diesel HAD [Health Assessment Document] also briefly summarizes health effects associated with ambient PM and discusses the EPA's annual National Ambient Air Quality Standard (NAAQS) of 15 ug/m^3. There is a much more extensive body of human data showing a wide spectrum of adverse health effects associated with exposure to ambient PM, of which diesel exhaust is an important component. The PM2.5 NAAQS is designed to provide protection from the noncancer and premature mortality effects of $PM_{2.5}$ as a whole, of which diesel PM is a constituent".*
6. *According to the USEPA's "Health Assessment Document for Diesel Engine Exhaust" (EPA/600/8-90/057F, May 202, pp 8-16, http://www.epa.gov/risk/basicinformation.htm#g): "an exploratory risk analysis shows that environmental cancer risks possibly range from 10^{-5} to nearly 10^{-3}, while a consideration of numerous uncertainties and assumptions also indicates that lower risk is possible and zero risk cannot be ruled out. These risk findings are only general indicators of the potential significance of the lung cancer hazard and should not be viewed as a definitive quantitative characterization of risk or be used to estimate an exposure-specific population impact, i.e., estimating numbers of cancer deaths".*

5.0 Qualitative Diesel PM Analysis

Absent the appropriate tools and guidance necessary to ensure credible and meaningful quantitative PM hot-spot analyses, a qualitative analysis of diesel PM was conducted. The objective of the analysis is to determine if the proposed project could produce levels in excess of the annual $PM_{2.5}$ NAAQS, which is designed to provide protection from the noncancer and premature mortality effects of $PM_{2.5}$ as a whole, of which diesel PM is a constituent. The 2-step approach was adopted based on the March 10, 2006 Final Rule issued by the USEPA regarding the localized or "hot-spot" analysis of $PM_{2.5}$ (40 CFR Part 93): 1) apply criteria to determine if the project would involve a significant number or significant increase in the number of diesel vehicles and 2) comparing air monitoring values from an area representative of project conditions. As previously discussed, the study area is classified as attainment for $PM_{2.5}$ NAAQS.

The criteria to determine if the project would involve a significant number or significant increase in the number of diesel vehicles were applied and evaluated as follows:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.

> The average daily traffic (ADT) on the highest volume roadways under all Build options is provided in Tables 2 and 3. Additional ADT information can be found in Appendix A. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 2 percent for both the No Build and Build options.
>
> As shown in Table 2, the largest increase in 2014 ADT for the roadways presented is predicted to occur under Option 3 on Route 3, South of Route 28. By applying a 2 percent truck percentage, the largest daily increase of 8,100 vehicles would result in a daily increase of 162 trucks. As shown in Table 3, the largest increase in 2030 ADT for the roadways presented is predicted to occur under Option 1 and 2 on Route 3, South of Route 28. By applying a 2 percent truck percentage, the largest daily increase of 13,200 vehicles would result in a daily increase of 264 trucks. Both of these levels are substantially below the USEPA example for a new or expanded highway project of 125,000 AADT with 8 percent trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be an expanded highway with a significant number of or significant increase in diesel vehicles.

Table 2 – 2014 Average Daily Traffic for Major Roadways

Analysis Region	Roadway	Option 1 and 2			Option 3			Option 8		
		No Build	Build	% Change	No Build	Build	% Change	No Build	Build	% Change
North	Route 3 and North Commercial Gate	66,900	66,900	0.0%	25,200	24,300	-3.6%	65,500	65,500	0.0%
	Route 3 South of Route 28	46,300	53,100	14.7%	48,500	56,600	16.7%	49,200	57,000	15.9%
Central	Route 1	100,800	100,300	0.0%	98,800	97,400	-1.4%	100,700	100,500	-0.2%
	Route 8	64,600	65,600	2.0 %	67,400	68,000	0.9%	65,600	66,800	1.8%
	Route 18	73,200	74,000	1.0%	86,400	92,800	7.4%	78,500	80,100	2.0%
Apra Harbor	Route 1 near Route 18	49,800	49,800	0.0%	49,800	49,800	0.0%	49,800	49,800	0.0%
South	Route 4	17,600	17,600	0.0%	17,600	17,600	0.0%	17,600	17,600	0.0%

Table 3 – 2030 Average Daily Traffic for Major Roadways

Analysis Region	Roadway	Option 1 and 2			Option 3			Option 8		
		No Build	Build	% Change	No Build	Build	% Change	No Build	Build	% Change
North	Route 3 near North Commercial Gate	50,500	45,900	-9.0%	18,300	18,800	2.7%	44,400	45,200	1.8%
	Route 3 South of Route 28	20,800	34,000	63%	38,200	43,000	12.6%	35,500	25,000	-29.6%
Central	Route 1	95,600	95,600	0.0%	95,100	93,100	-2.1%	96,100	95,300	-0.8%
	Route 8	58,500	58,600	0.2%	59,000	60,400	2.4%	58,800	59,700	1.5%
	Route 18	70,500	70,500	0.0%	83,600	89,200	6.7%	75,100	75,100	0.0%
Apra Harbor	Route 1 near Route 18	48,300	48,300	0.0%	48,400	48,400	0.0%	48,300	48,600	0.6%
South	Route 4	20,100	20,100	0.0%	20,000	20,000	0.0%	20,100	19,900	-1.0%

(ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

The proposed project is expected to affect intersections with a LOS of D, E or F. However, the effect on LOS due to the project options is due to an overall increase in volumes rather than a significant increase in diesel vehicles. The LOS for intersections throughout the study area is detailed in Appendix A of this report.

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

The project does not involve bus and rail terminals.

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.

The project does not involve bus and rail terminals.

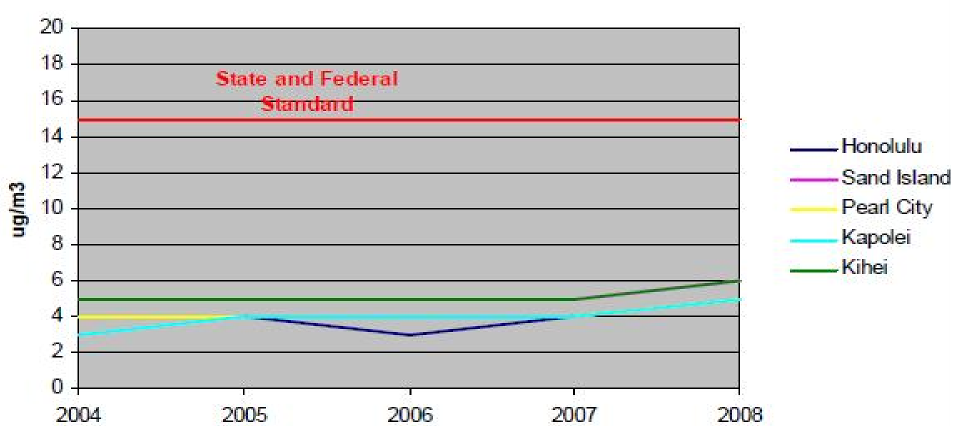
(v) Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The area is classified as attainment of the PM2.5 NAAQS. There is no applicable implementation plan or implementation plan submission.

Based on the above analysis, it is determined that the project will not involve a significant number or significant increase in the number of diesel vehicles and is not a project of air quality concern with respect to $PM_{2.5}$.

Guam does not currently have any ambient air quality monitoring locations for $PM_{2.5}$. The closest representative monitor to the study area, based on meteorological conditions, is located in Hawaii. As shown in Figure 1, Hawaii has not had a violation of the applicable $PM_{2.5}$ standard in the last three years of certified data (2006-2008). The values in Hawaii can be used as a general indicator of the range of values expected in Guam, although there are some notable differences between the locations – the population is greater in Hawaii than in Guam, roadway VMTs are approximately 3 times higher in Hawaii than in Guam, and high sulfur fuel is not used in the power plants of Hawaii while it is in Guam. The monitored $PM_{2.5}$ values in Hawaii are approximately 50% lower than the applicable standard. Using these values as a conservative estimate of $PM_{2.5}$ levels within the study area under Build conditions, it indicates that the mobile source impacts of the project are not expected to cause a violation of the applicable $PM_{2.5}$ standard, designed in part to provide protection from the noncancer and premature mortality effects of diesel PM.

Figure 2 – $PM_{2.5}$ Annual Average Monitored Levels in Hawaii (2004-2008)



6.0 Mobile Source Dispersion Modeling Analysis

Microscale air quality modeling was performed using EPA's mobile source emission factor model (MOBILE6.2) and EPA's CAL3QHC air quality dispersion model to estimate future No Build (without the proposed project) and future Build (with the proposed project) MSAT levels at selected locations in the project area.

Analysis Sites and Receptor Locations

Using a worst case screening approach, analysis locations were chosen based on overall volumes, level of service, and location of project impacts. Site selection is discussed in the EIS for this project and the data used for the site selection is shown in Appendix A. The sites analyzed are:

1. Routes 1 & 28
2. Routes 9 & AAFB
3. Route 1 & Route 8
4. Route 4 & 7A
5. Route 16 & 27
6. Route 5 and 2A
7. Routes 1 and 2A

In addition to these locations, an eighth analysis site was added at the location of Route 1 west of Route 30. This location was added because it demonstrated the highest peak hour traffic at a free-flow location. These eight areas have the highest traffic levels within the study area and are anticipated to be the areas with the highest potential of MSAT impact due to the project.

Receptors were conservatively placed on sidewalks as a worst case approach. This is conservative because, as previously mentioned, the risks from MSAT are based on lifetime exposure levels and it is highly unlikely that a sidewalk receptor is representative of a lifetime exposure level. Realistic (actual) receptor locations were placed at analysis sites 1 and 4 to illustrate the drop off of MSAT concentrations with distance from the affected roadways.

Emission Factors

Emission factors were obtained through the use of EPA's MOBILE6.2 Emission Factor program. To determine the emission factors for all of the air toxics examined, the additional hazardous air pollutant data supplied with MOBILE6.2 was utilized. As the exact fuel parameters that characterize the fuel used in Guam were not available, national average information was applied, as recommended by EPA. These data can be found at EPA's website (http://www.epa.gov/otaq/regs/fuels/rfg/properf/cg-params.htm).

Dispersion Model

EPA's CAL3QHCR model was used to predict MSAT concentrations at the 8 analysis sites. Conservative worst case meteorology and traffic data were used in the analysis.

CAL3QHCR was run for each of the 20 individual MSAT compounds for the AM and PM peak periods for existing conditions and for future No Build and Build conditions (under each of the Build alternatives). The highest concentration for each air toxic compound at each location is reported.

7.0 Risk Characterization

The derived health risk values from the EPA Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/) database were used in this analysis to determine the total risk posed by the release of multiple MSAT. MSAT were considered as both carcinogens and noncarcinogens. Carcinogenic MSAT were evaluated using unit risk factors (URF); non-carcinogenic MSAT were evaluated using the reference concentrations for inhalation exposure (RfC) and/or acute inhalation exposure (AIEC). RfC and AIEC were used to estimate non-carcinogenic health effects of substances that are also carcinogens. The health risk values used in this analysis are provided in Table 1. The incremental threshold values recommended by EPA for this project are 10 per million for cancer risk evaluation and one (1) for the total non-cancer (chronic and acute) hazard indexes.

Carcinogens

Individual lifetime cancer risk through direct inhalation of carcinogen (dCR) was estimated using the following equation (EPA's Human Health Risk Assessment Protocol [HHRAP]), Appendix C, Table C-2-1 2005):

Cancer Risk (dCR) = EC x URF and EC = Ca x EF x ED/AT x 365 days/year

Where:

EC = annual exposure concentrations of compound, µg/m^3

Ca = annual ambient air concentration of specific pollutant (estimated by the dispersion model), µg/m^3

URF = compound-specific inhalation unit risk factor in (µg/m^3)-1

EF = exposure frequency, days/year (EPA recommends to use 350)

ED = exposure duration, yr (EPA recommends value of 30 for adult resident)

AT = averaging time, yr (assumed by EPA to be 70 years)

Ca values were determined using the equation from Table B-5-1 of HHRAP, compound-specific emission rate, and Fv (fraction of compound air concentration in vapor phase) of 1. Annual concentrations were derived from CAL3QHCR-estimated 1-hour concentrations using a 0.1 conversion factor.

Once the individual risk of each compound was estimated, these values were summed together to estimate the total cancer risk of all carcinogens together. Incremental changes in cancer risk were estimated for each Build alternative compared to No Build conditions. If the projected change is less than or equal to the ten in one million, the total carcinogenic risk posed by the proposed action is considered to be acceptable.

<u>Non-Carcinogens</u>

Non-cancer chronic inhalation hazard quotients were estimated using the following equation (HHRAP, Appendix C, Table C-2-2):

$$\text{Non-Cancer Hazard Index} = EC \times 0.001/RfC \text{ and } EC = Ca \times EF \times ED/AT \times 365 \text{ days/year}$$

Where:

EC = exposure concentrations of compound, µg/m^3

Ca = total ambient air concentration of specific pollutant (estimated by the dispersion model), µg/m^3

RfC = reference dose concentration, established by the EPA, mg/m^3

EF = exposure frequency, days/year (EPA recommends to use 350)

ED = exposure duration, yr (EPA recommends value of 30 for adult resident)

AT = averaging time, yr (EPA recommends value of 30 for non-carcinogens)

0.001 = units conversion factor, mg/µg

For the acute short-term inhalation exposure the following equation was used (HHRAP, Appendix C, Table C-2-3):

$$\text{Acute Hazard Index} = C_{acute} \times 0.001/AIEC$$

Where:

C_{acute} = *1-hour air concentration (estimated by the dispersion model), µg/m3*

AIEC = 1-hour acute inhalation exposure guideline value, mg/m3

0.001 = units conversion factor, mg/µg

The maximum estimated 1-hour concentration for each MSAT was estimated directly from the CAL3QHCR model. Once the chronic or acute hazard quotient of each compound was estimated, these values were summed together to arrive with total chronic or acute Hazard Index. Potential non-cancer impacts of the proposed action were estimated by comparing the total hazard index of each Build alternative to No Build conditions. If the incremental change in the total hazard index is less than or equal to one, the potential non-carcinogenic chronic or acute risk impact associated with the proposed action is considered acceptable.

8.0 Receptor Sites

Two types of receptors were considered – sidewalk receptors and property line receptors (actual).

Sidewalk Receptors -- these are located at mid-sidewalk near each intersection, and were selected following EPA's *Guideline for Modeling Carbon Monoxide from Roadway Intersections*. The results obtained at these locations are considered to be very conservative for a chronic or lifetime exposure assessment because people are not exposed to the concentrations estimated at these locations for extended periods of time.

Actual Receptors – the following sensitive land uses were identified near two of the eight analysis sites:

- The Family Baptist Church, located approximately 150 feet from the edge of the roadways considered for Site 1; and
- The Academy of Our Lady of Guam, located approximately 25 feet from the edge of the roadways considered for Site 4.

The results obtained at these locations are considered to be more representative of the health risk associated with this project because people at these locations may be exposed to the estimated concentrations for extended periods of time.

9.0 Results

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Tables 4 and 5, which present the estimated cancer risk increases/decreases at sidewalk and actual receptors between No Build and Build conditions. The estimated non-cancer total chronic hazard index increases/decreases are presented in Tables 6 and 7, and the estimated non-cancer acute hazard index increases/decreases are presented in Tables 8 and 9. For more detailed results, estimated cancer risks under No Build and Build conditions at sidewalk and actual receptors are presented in Tables B-1 and B-2 in Appendix B. The estimated non-cancer total chronic hazard indexes are presented in Tables B-3 and B-4 in the Appendix, and the estimated non-cancer acute hazard indexes are presented in Tables B-5 and B-6.

The following are the results of the MSAT analysis:

1. Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSAT are considered acceptable; and

2. Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSAT are considered acceptable;

Based on these results, the proposed action is not anticipated to have adverse MSAT impacts. Additionally, as shown in the appendix:

- Future cancer and non-cancer risks, under both No Build and Build conditions, are less than existing risks in most cases; and

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.

Table 4
Estimated Cancer Risk Increase/Decrease at Sidewalk Receptors (x10^{-6})

Site No.	Option 1/2		Option 3		Option 8		Cancer Risk Threshold
	2014	2030	2014	2030	2014	2030	
Site 1	1.60	1.00	2.36	0.89	2.50	0.32	10
Site 2	1.53	0.32	1.64	0.32	1.53	0.32	
Site 3	1.55	0.56	3.34	0.51	3.57	0.81	
Site 4	0.22	0.22	0.25	0.16	-0.37	0.22	
Site 5	3.20	1.99	4.54	2.12	3.92	3.37	
Site 6	0.35	0.27	0.28	0.19	0.39	0.28	
Site 7	-0.82	-0.16	-0.88	-0.16	-0.82	-0.16	
Site 8	0.26	0.06	0.24	0.04	0.29	0.05	

Table 5
Estimated Cancer Risk Increase/Decrease at Actual Receptors (x10^{-6})

Site No.	Option 1/2		Option 3		Option 8		Cancer Risk Threshold
	2014	2030	2014	2030	2014	2030	
Site 1	0.41	0.03	0.46	0.09	0.39	0.12	10
Site 4	-0.17	0.17	0.67	0.82	0.91	0.97	

Table 6
Estimated Non-Cancer Chronic Hazard Index Increase/Decrease at Sidewalk Receptors

Site No.	Option 1/2		Option 3		Option 8		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	
Site 1	0.19	0.12	0.27	0.11	0.28	0.05	1
Site 2	0.20	0.04	0.21	0.04	0.20	0.04	
Site 3	0.19	0.07	0.38	0.06	0.37	0.10	
Site 4	0.03	0.03	0.03	0.02	-0.04	0.03	
Site 5	0.33	0.20	0.46	0.22	0.43	0.29	
Site 6	0.03	0.03	0.02	0.01	0.04	0.03	
Site 7	-0.09	-0.02	-0.09	-0.02	-0.09	-0.02	
Site 8	0.03	0.01	0.03	0.01	0.04	0.01	

Table 7
Estimated Non-Cancer Chronic Hazard Index Increase/Decrease at Actual Receptors

Site No.	Option 1/2		Option 3		Option 8		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	
Site 1	0.05	0.00	0.06	0.01	0.05	0.01	1
Site 4	-0.01	0.02	0.08	0.09	0.11	0.11	

Table 8
Estimated Non-Cancer Acute Hazard Index Increase/Decrease at Sidewalk Receptors

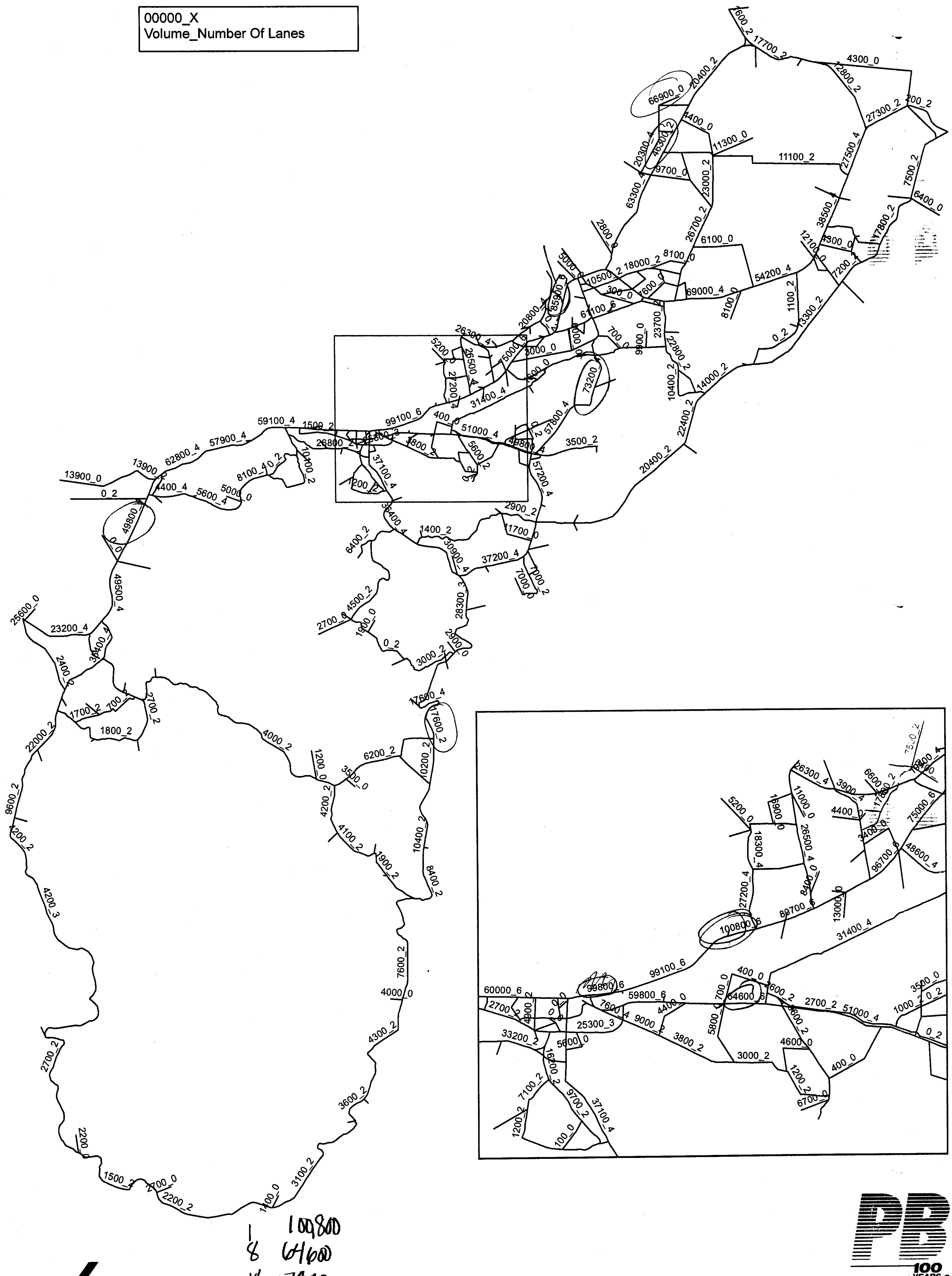
Site No.	Option 1/2		Option 3		Option 8		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	
Site 1	0.19	0.12	0.27	0.11	0.28	0.05	
Site 2	0.19	0.04	0.21	0.04	0.19	0.04	
Site 3	0.19	0.07	0.37	0.06	0.36	0.10	
Site 4	0.03	0.03	0.03	0.02	-0.04	0.03	1
Site 5	0.32	0.19	0.45	0.21	0.41	0.29	
Site 6	0.03	0.02	0.02	0.01	0.04	0.03	
Site 7	-0.08	-0.01	-0.08	-0.01	-0.08	-0.01	
Site 8	0.03	0.01	0.03	0.00	0.04	0.01	

Table 9
Estimated Non-Cancer Acute Hazard Index Increase/Decrease at Actual Receptors

Site No.	Option 1/2		Option 3		Option 8		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	
Site 1	0.05	0.01	0.06	0.01	0.05	0.01	1
Site 4	0.00	0.02	0.08	0.09	0.11	0.11	

Appendix A
Average Daily Traffic and Intersection Data

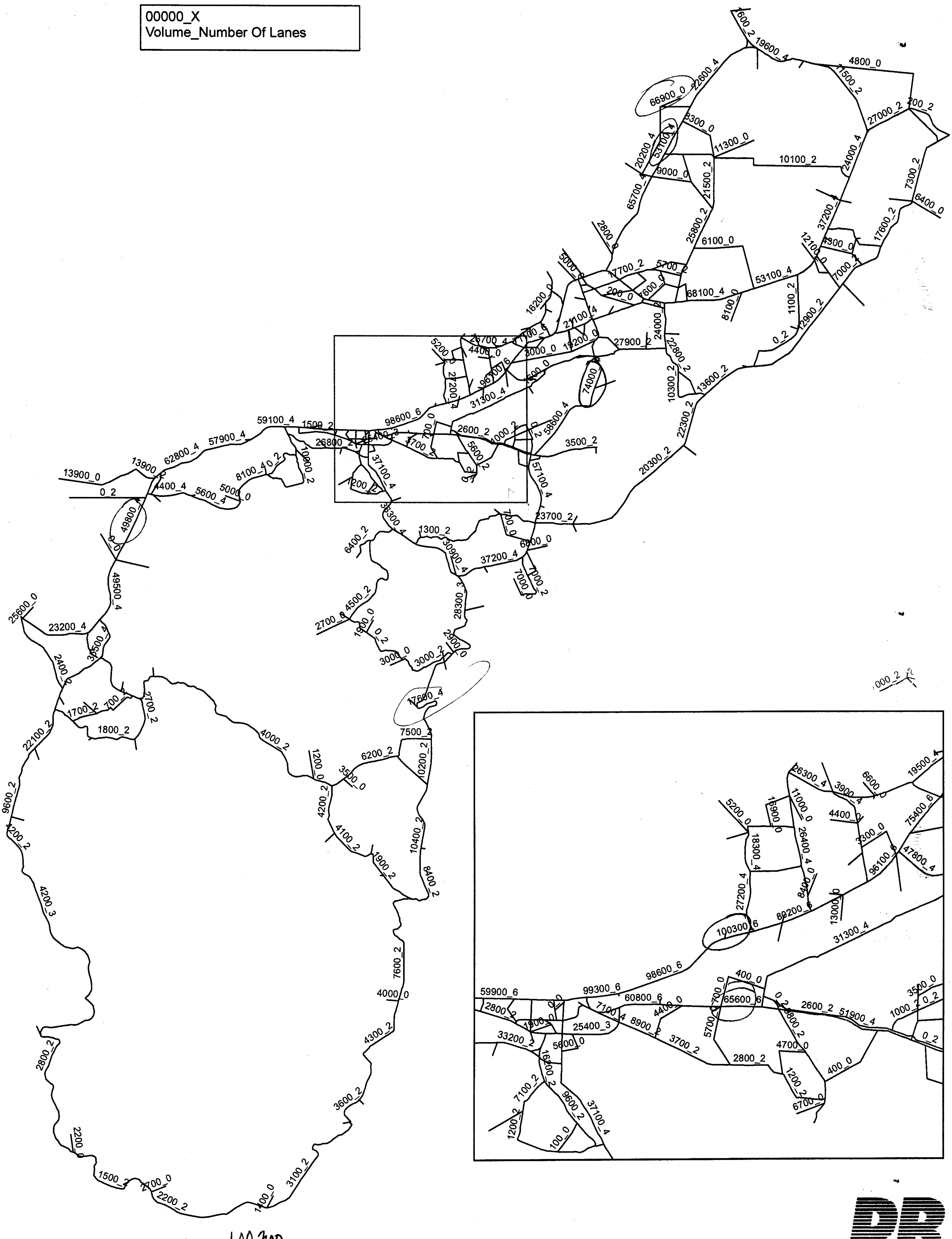
Guam
2014 Daily Traffic Volumes - Option 1 No Build



1 100,800
8 64600
18 73200
1034 ? 85,900

Daily Volumes are based on the 2014C1FisConMit-run 02/24/09

Guam
2014 Daily Traffic Volumes - Option 1 Build

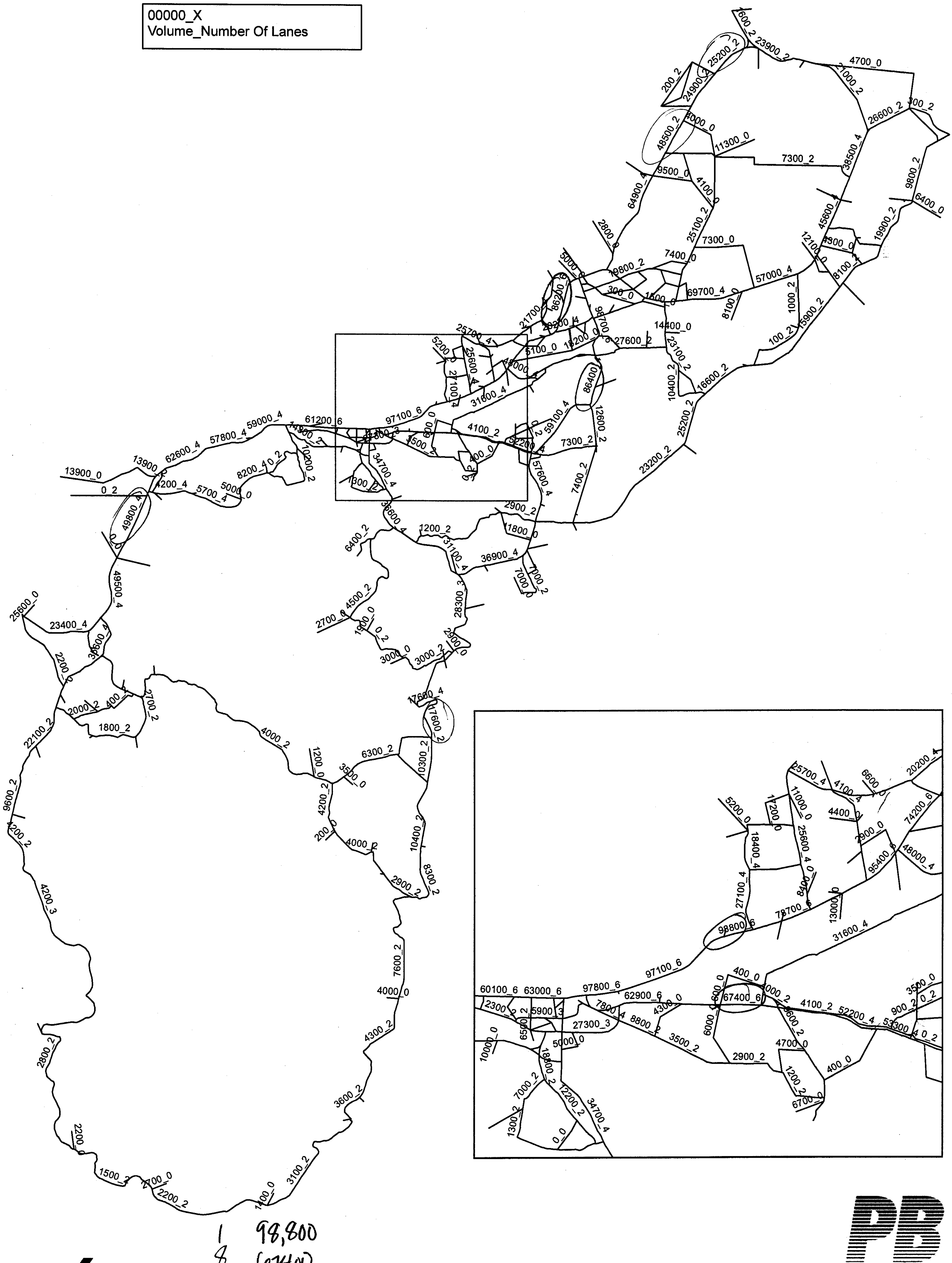


1 100,300
8 65,600
18 74,000

034

Daily Volumes are based on the 2014C1FisMilMit-run 02/24/09

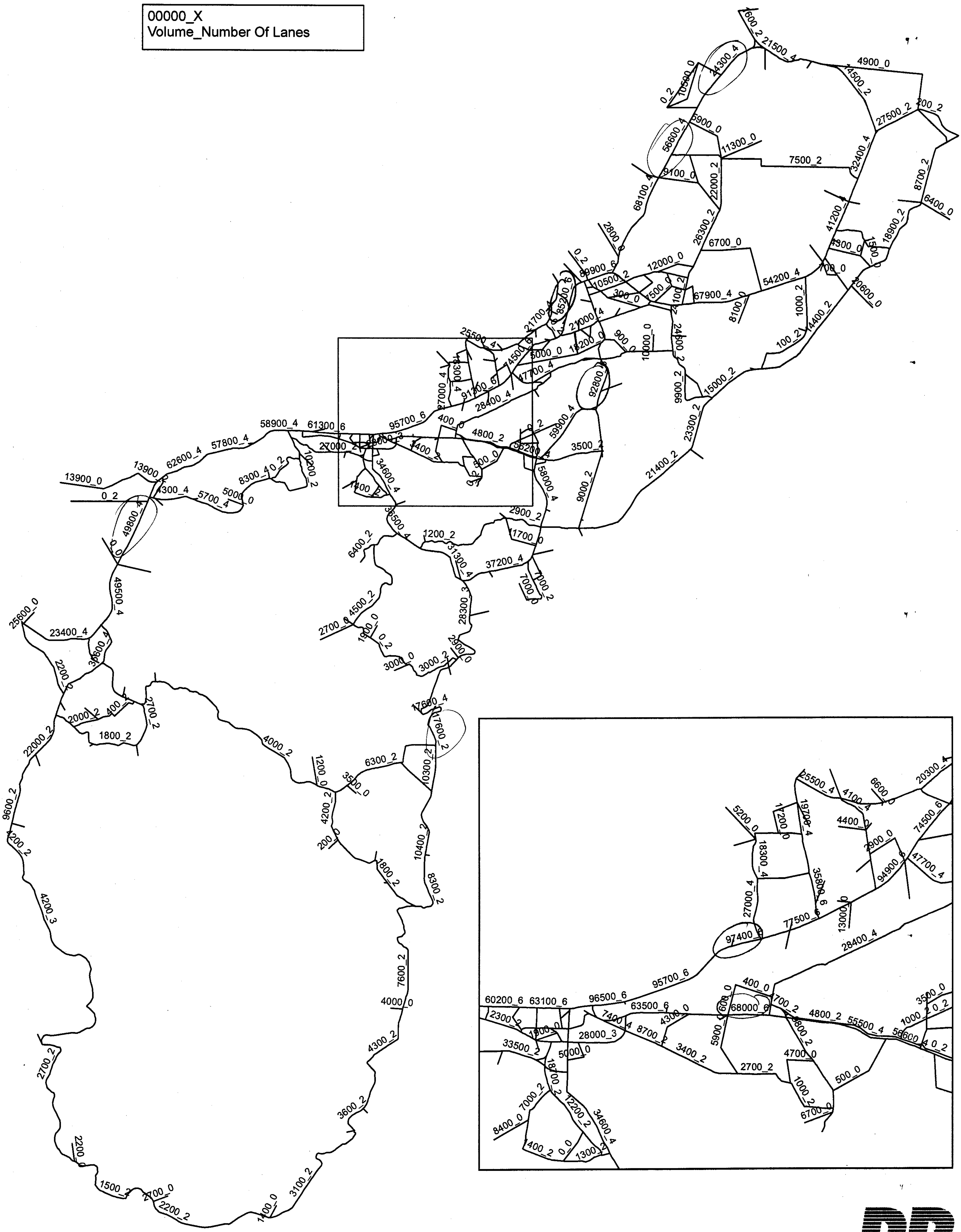
Guam
2014 Daily Traffic Volumes - Option 3 No Build



1 98,800
8 67400
18 86400
1034 86200

Daily Volumes are based on the 2014C3FisConMit-run 03/04/09

Guam
2014 Daily Traffic Volumes - Option 3 Build

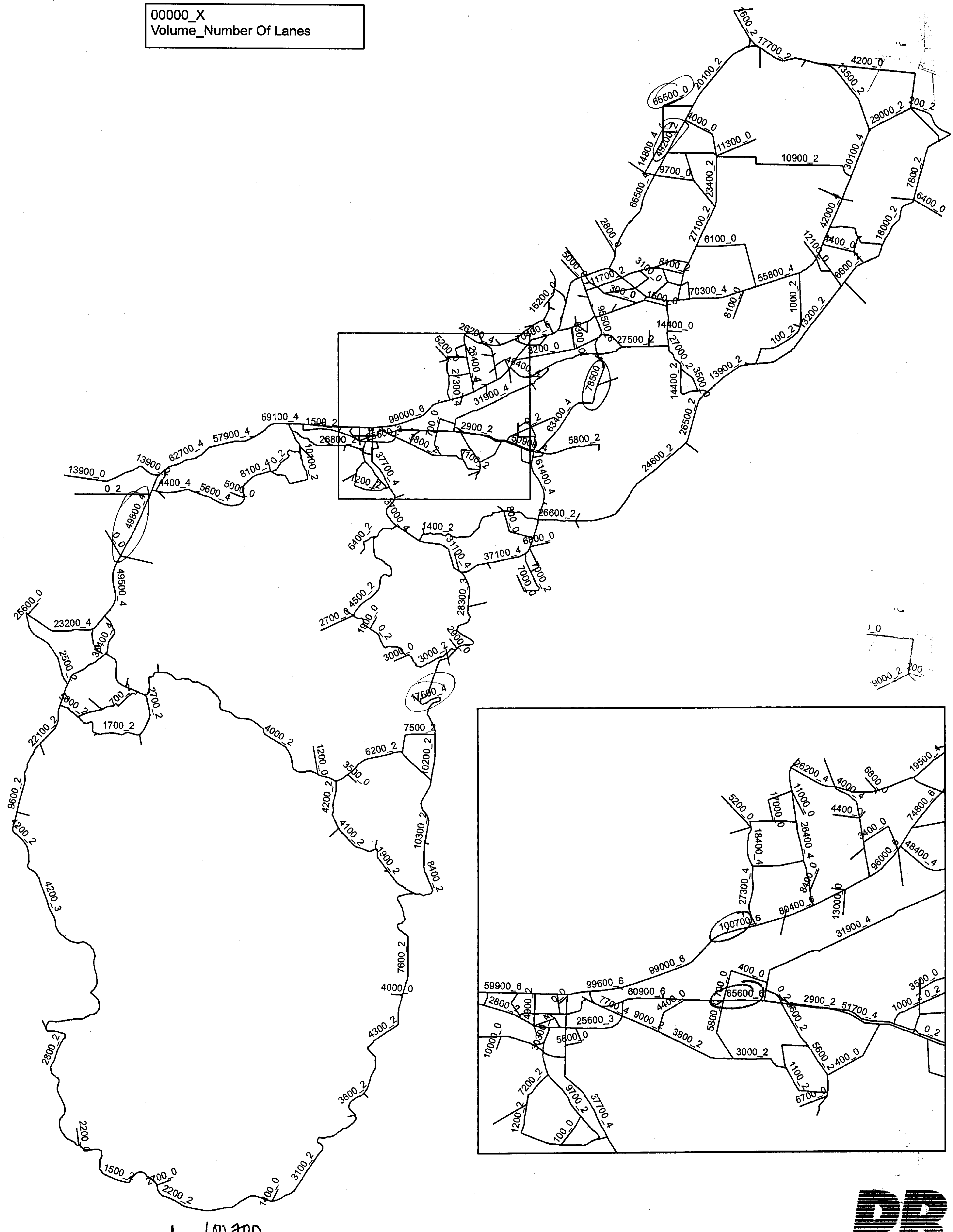


1 97,400
8 68000
18 92800
10 34 85,200

PB 100 YEARS

Daily Volumes are based on the 2014C3FisMilMit-run 03/04/09

Guam
2014 Daily Traffic Volumes - Option 8 No Build

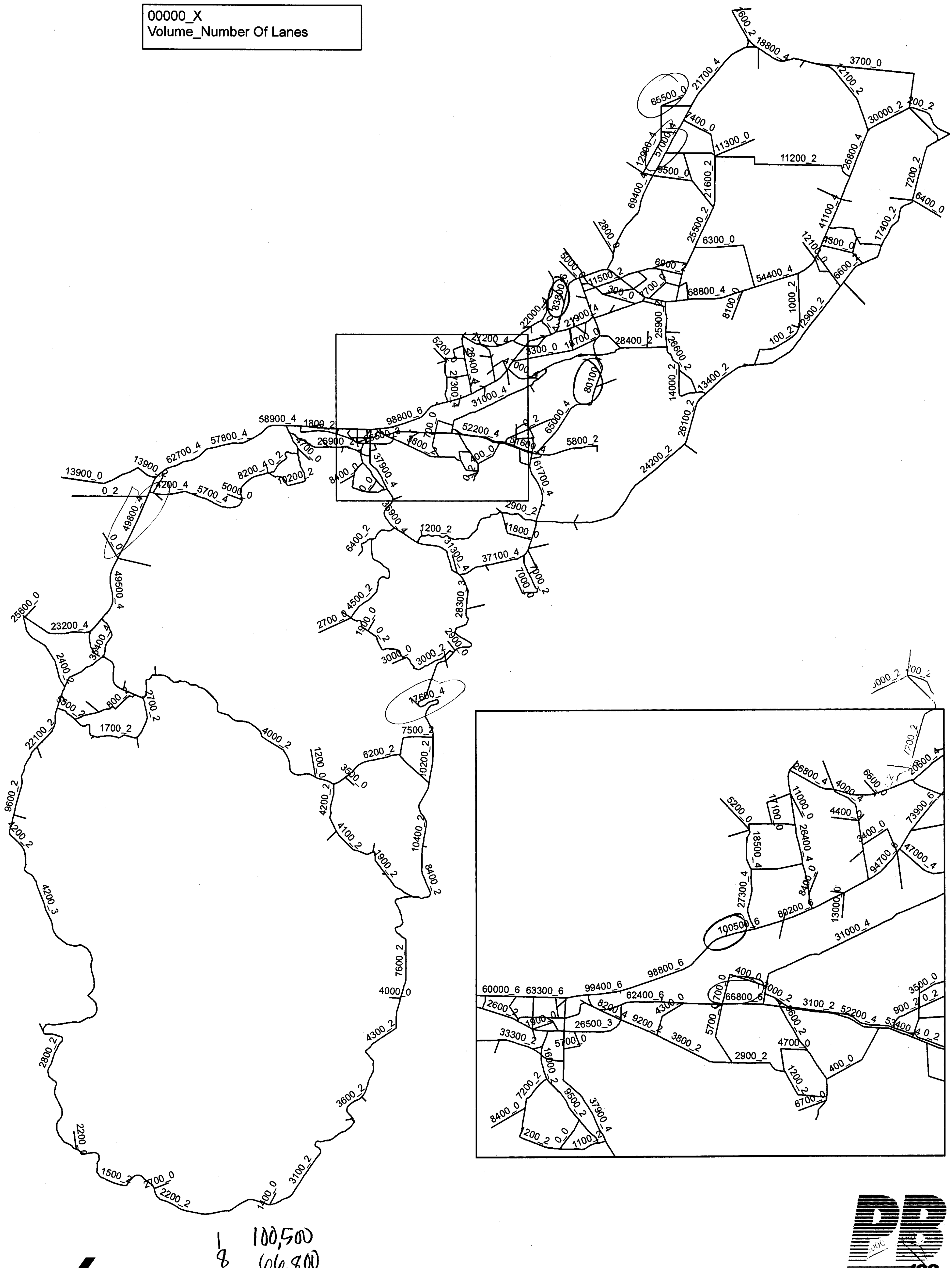


| 100,700
8 65,600
18 78,500
@34 ?

Daily Volumes are based on the 2014C8FisConMit-run 03/05/09

Guam
2014 Daily Traffic Volumes - Option 8 Build

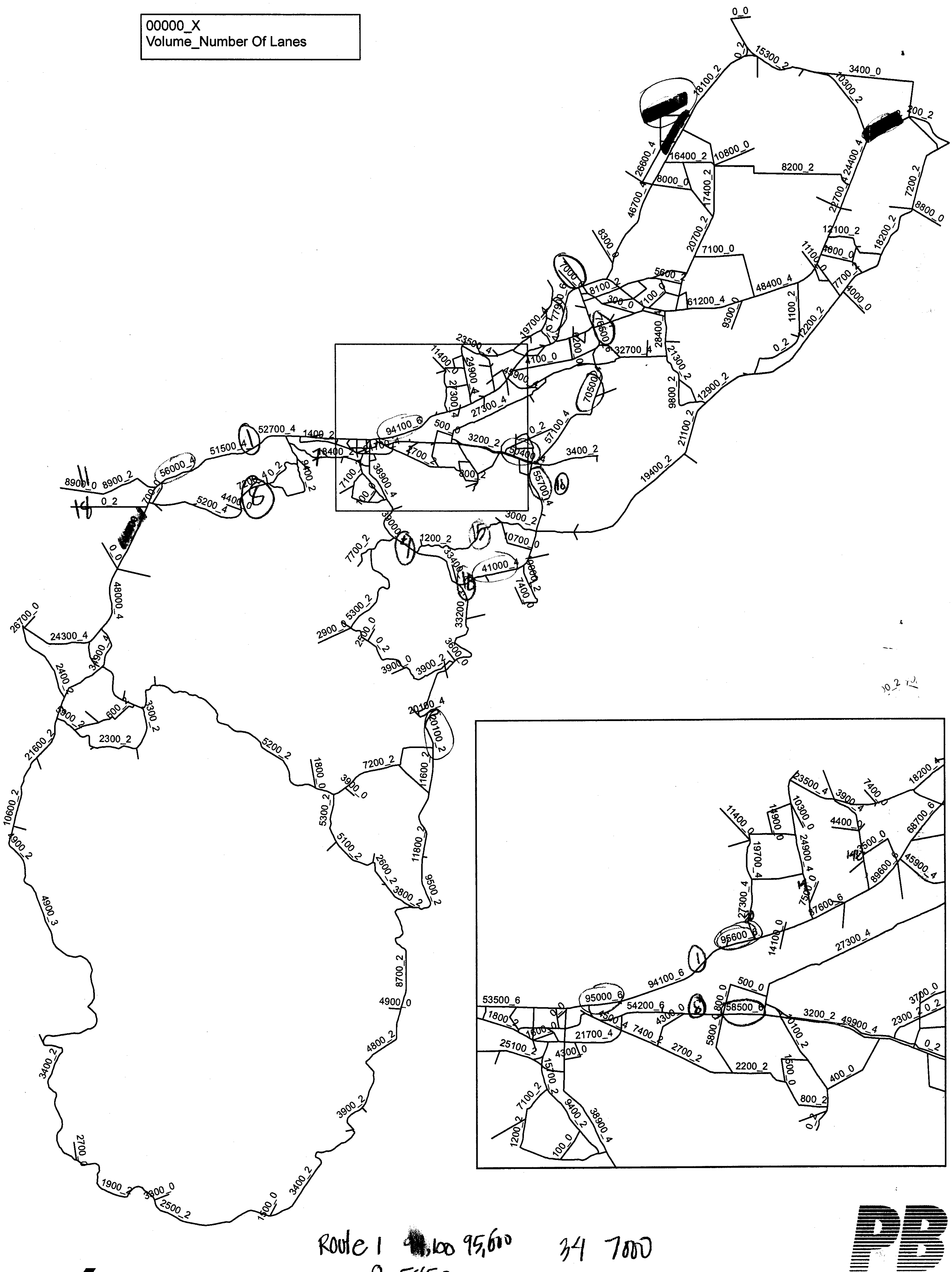
00000_X
Volume_Number Of Lanes



1 100,500
8 66,800
18 80,100
DC 34 83,800

Daily Volumes are based on the 2014C8FisMilMit-run 03/05/09

Guam
2030 Daily Traffic Volumes - Option 1 No Build

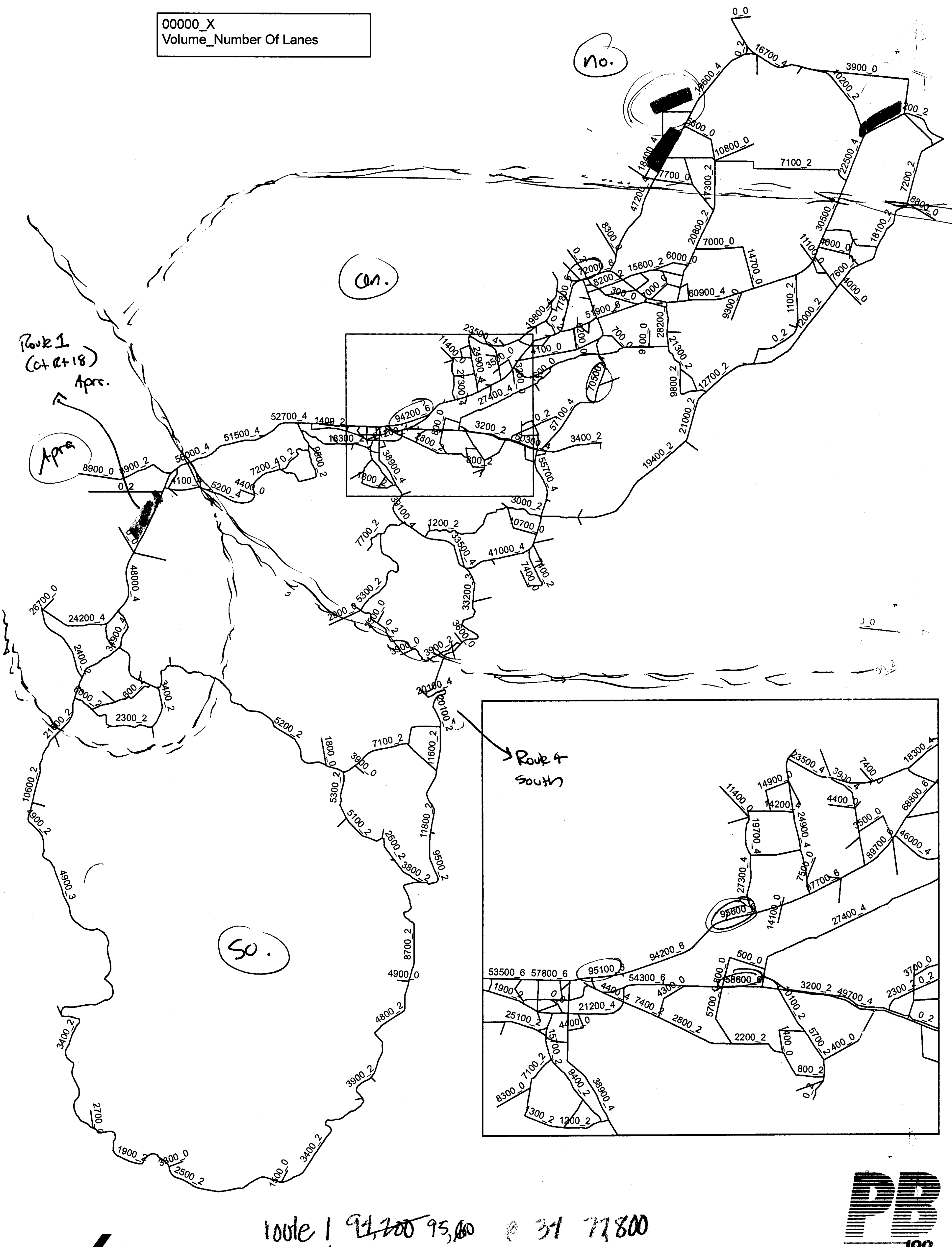


Route 1 ~~[illegible]~~ 95,600
8 58500
18 ~~55700~~ 70,500
18 N 76500

34 7000
route 1N @ 34 77,900

Daily Volumes are based on the 2030C1FisConMit-run 02/24/09

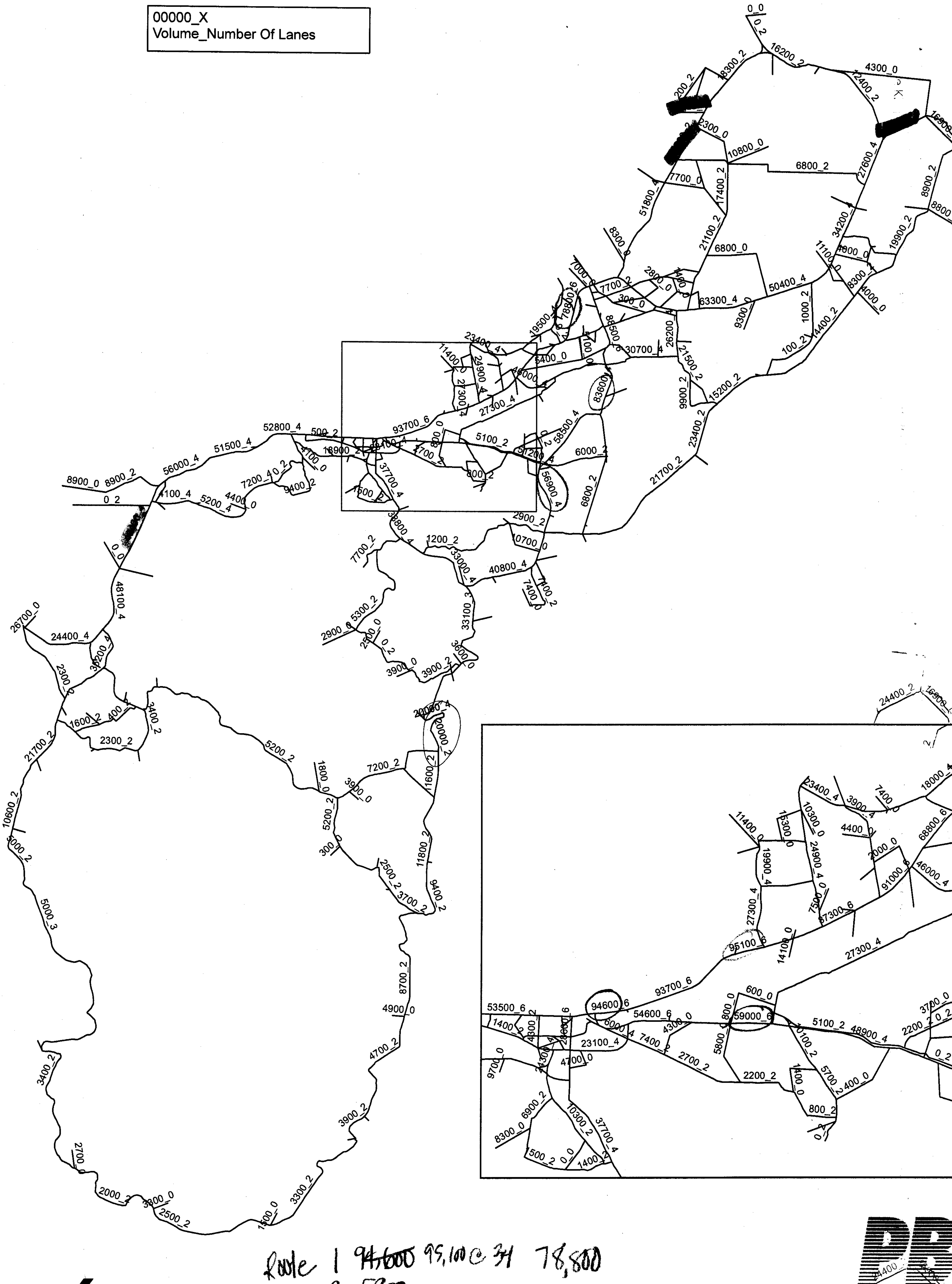
Guam
2030 Daily Traffic Volumes - Option 1 Build



route 1 ~~91,200~~ 95,100   @ 31 77,800
8 58600
18 ~~55700~~ 70,500
34 72010

Daily Volumes are based on the 2030C1FisMilMit-run 04/14/09

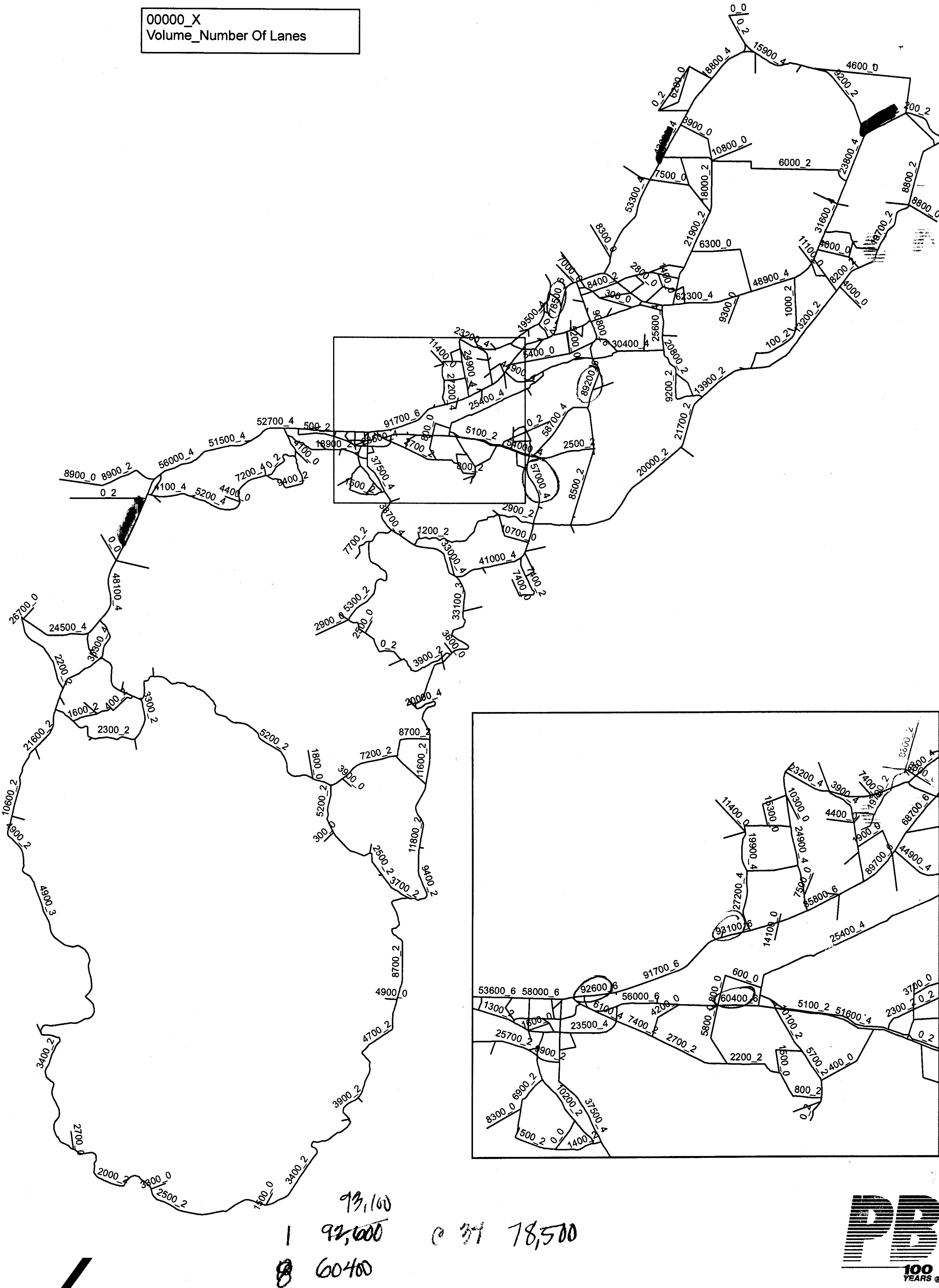
Guam
2030 Daily Traffic Volumes - Option 3 No Build



Route 1 ~~94,600~~ 95,100 @ 34 78,800
8 59,000
18 ~~56,900~~ 8360
34 1000

Daily Volumes are based on the 2030C3FisConMit-run 03/04/09

Guam
2030 Daily Traffic Volumes - Option 3 Build



93,100

1 92,600 @ 34 78,500

8 60400

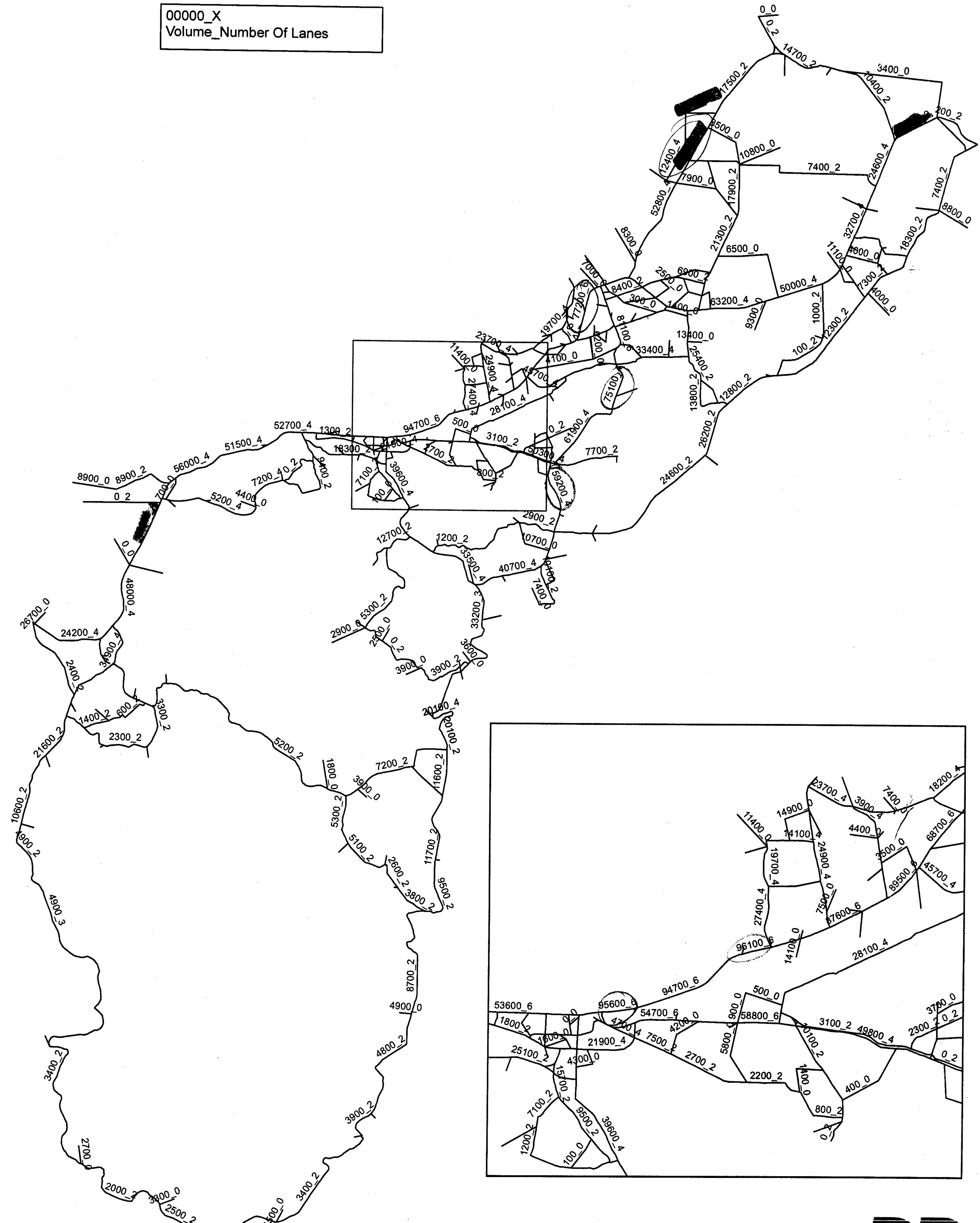
18 57000 89,200

34 7100

Daily Volumes are based on the 2030C3FisMilMit run 03/04/09

Guam
2030 Daily Traffic Volumes - Option 8 No Build

00000_X
Volume_Number Of Lanes

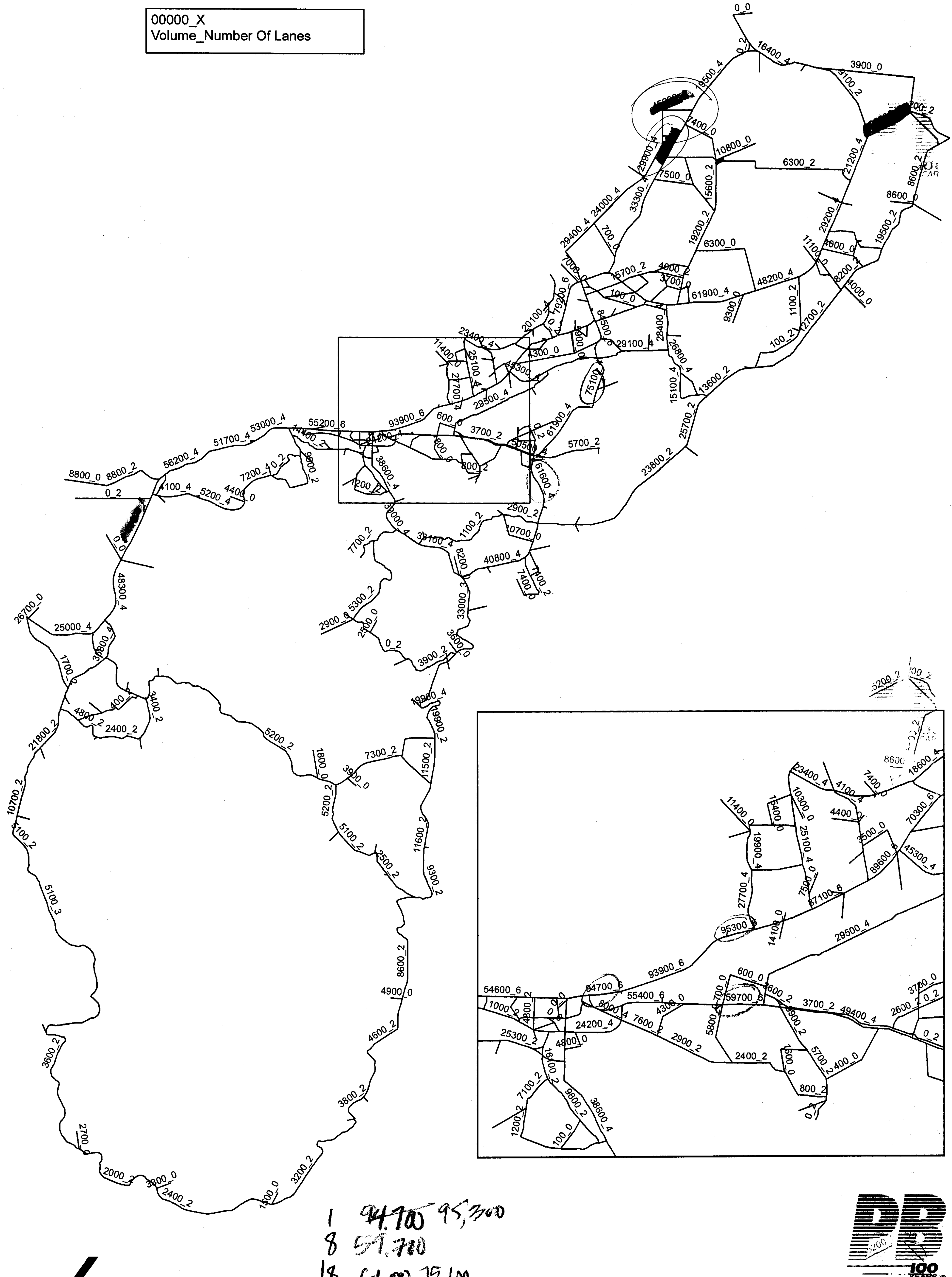


PB 100 YEARS

1 ~~95,600~~ 96,100
8 58,800
18 ~~59,200~~ 75100
10 34 77,200

Daily Volumes are based on the 2030C8FisConMit-run 03/04/09

Guam
2030 Daily Traffic Volumes - Option 8 Build



1 94,700 95,300
8 59,700
18 64,000 75,100
16 34 79200

Daily Volumes are based on the 2030C8FisMil26-run 03/24/09

INTERSECTION SCREENING TABLES
OPTIONS 1/2

Screening Analysis Locations – North Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,485	C	22.5	3,525	D	52.2
Route 1/29	3,675	F	87.6	2,970	E	60.5	3,550	E	65.5	3,400	E	67.7
Route 1/28	**5,700**	**F**	**226.2**	**6,050**	**F**	**157.7**	**6,600**	**F**	**216.8**	**7,050**	**F**	**104.5**
Route 3/3A	875	A	9.5*	880	B	10.1*	910	B	11.6*	2,660	F	79.0*
Route 3/28	1,904	B	17.8	2,070	C	21.4	3,990	C	26.0	4,210	D	36.9
Route 15/29	1,760	F	****	1,575	F	683.5*	1,860	C	27.7	1,830	C	25.4
Route 3/ North (Commercial) Gate**	1,010	N/A	N/A	970	N/A	N/A	2,455	C	29.7	2,855	E	60.4
Route 3/ South (Main) Gate**	1,260	N/A	N/A	1,200	N/A	N/A	3,555	C	27.9	4,295	D	43.8
Route 3/ Control Tree Drive (Residential) Gate	1,300	F	122.3*	2,745	F	74.2*	4,085	C	32.6	4,510	C	20.9
Route 9/ Andersen AFB North Gate**	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	2,035	F	****	2,160	F	****

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Central Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/26	5,910	E	75.8	6,060	F	229.8	6,865	E	75.8	7,295	F	156.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,860	F	137.4	7,605	F	374.3
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	3,925	D	44.4	4,340	E	75.7
Route 1/3	5,055	F	158.4	5,400	F	306.9	4,970	D	48.5	5,845	D	50.6
Route 1/16	5,905	D	52.2	6,410	F	305.5	6,950	E	65.3	7,490	F	87.5
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,900	E	68.0	6,535	F	82.0
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,985	F	112.2	6,790	F	131.5
Route 1/ 10A	6,935	F	82.9	7,055	F	117.2	7,485	F	118.1	7,695	F	102.0
Route 1/ 14B	6,120	E	60.5	6,485	F	91.8	6,485	F	83.9	6,775	E	78.2
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	182.5	8,455	F	275.1
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,825	F	134.7	7,385	F	267.2
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**8,360**	**F**	**97.6**	**8,970**	**F**	**127.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	32.4	8,775	F	140.2

Screening Analysis Locations – Central Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,255	D	40.6	6,240	E	61.8
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,765**	**F**	**607.3**	**5,515**	**F**	**534.1**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,665	F	199.5	4,705	E	65.1
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,810	D	39.6	1,790	E	57.7
Route 4/4A	740	D	27.9*	925	C	21.2*	1,030	E	49.7*	1,790	F	484.3*
Route 7/7A	1,985	F	77.7*	1,745	E	114.5*	1,935	D	29.2*	2,100	F	105.1*
Route 8/33 (East)	3,655	C	31.2	4,680	F	147.3	4,315	D	54.6	4,910	F	81.7
Route 8/10	6,410	F	122.0	6,295	F	116.5	6,435	F	96.9	7,010	F	172.7
Route 10/ 15	5,550	D	49.7	5,585	F	101.1	6,245	F	196.9	6,270	F	152.3
Route 16/ 27A	2,770	C	24.3	3,130	C	26.4	3,050	C	27.4	3,680	C	34.2
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**486.4**	**7,665**	**F**	**345.0**	**7,790**	**F**	**288.7**
Route 16/ 10A	6,178	F	874.2	4,880	F	208.7	5,035	F	123.1	5,725	F	123.5
Route 17/ 4A	720	C	17.0*	760	C	17.9*	700	B	13.6*	790	C	18.7*
Route 26/ 25	3,180	F	270.1	3,495	E	71.7	3,415	C	31.2	3,930	D	41.0

Screening Analysis Locations – Central Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 26/ 15	1,680	F	134.8*	1,790	F	2494.6*	2,015	C	27.9	2,115	C	32.1
Route 28/ 27A	2,920	F	353.1*	2,565	F	437.8*	2,735	D	35.6	2,640	D	36.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	F	458.6*	4,780	C	32.4	5,105	E	79.1
Route 15/ Road 1.16 M east of Route 26 (Second Gate)**	1,040	N/A	N/A	1,010	N/A	N/A	1,320	C	22.1*	1,410	C	22.6*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	F	****	4,765	N/A	N/A	5,150	N/A	N/A
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	N/A	N/A	345	N/A	N/A

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis , as detailed in the EIS.

Screening Analysis Locations – Apra Harbor, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,885	C	20.7	4,080	D	43.5
Route 1/ Polaris Point	3,655	A	4.3	4,680	A	6.2	3,420	A	8.2	3,900	A	7.4
Route 1/2a	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	4,275	E	66.8	4,780	E	57.2

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – South Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 5/ 2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**3,280**	**F**	**96.3**	**3,335**	**C**	**26.2**
Route 5/17	3,655	D	28.9*	4,680	E	47.8*	1,035	F	56.8*	1,105	F	149.6*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	27.8	2,350	C	27.1
Route 5/ Harmon Road	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

INTERSECTION SCREENING TABLES
OPTION 3

Screening Analysis Locations – North Region Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,540	C	24.4	3,525	D	53.0
Route 1/29	3,675	F	87.6	2,970	E	60.5	4,025	F	85.3	3,895	F	90.5
Route 1/28	5,700	F	226.2	6,050	F	157.7	6,885	F	198.5	7,390	F	139.5
Route 3/3A	875	A	9.5*	880	B	10.1*	2,225	E	47.2*	2,340	F	100.7*
Route 3/28	1,904	B	17.8	2,070	C	21.4	5,680	F	90.2	6,025	D	53.9
Route 15/ 29*	1,760	F	****	1,575	F	683.5*	1,945	F	161.4	1,985	C	26.2
Route 3/ North (Commercial) Gate	1,010	N/A	N/A	970	N/A	N/A	3,935	D	39.8	3,375	D	46.0
Route 3/ South (Main) Gate	1,260	N/A	N/A	1,200	N/A	N/A	5,945	D	44.5	6,275	F	370.1
Route 3/ Control Tree Drive (Residential) Gate	1,300	F	122.3*	2,745	F	74.2*	5,525	F	113.3	5,680	D	46.3
Route 9/ Andersen AFB North Gate	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	**2,035**	**F**	**1031.0***	**2,160**	**F**	**9051.1***

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Central Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/26	5,910	E	75.8	6,060	F	229.8	7,120	F	89.4	7,615	F	209.1
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,705	F	151.1	7,625	F	399.6
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	4,160	F	120.2	4,435	F	157.1
Route 1/3	5,055	F	158.4	5,400	F	306.9	7,815	F	341.3	8,030	F	474.4
Route 1/16	5,905	D	52.2	6,410	F	305.5	8,270	F	232.2	8,540	F	340.3
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,775	E	66.6	6,355	E	71.5
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,860	E	71.0	6,435	F	112.3
Route 1/ 10A	6,935	F	82.9	7,055	F	117.2	7,515	F	129.6	8,170	F	193.6
Route 1/ 14B	6,120	E	60.5	6,485	F	91.8	6,480	E	79.8	6,965	E	78.5
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	176.8	8,635	F	315.8
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,795	F	148.5	7,475	F	253.3
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**7,835**	**F**	**102.7**	**8,965**	**F**	**155.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,565	C	30.5	7,440	F	107.2
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,265	C	29.7	7,850	F	958.7

Screening Analysis Locations – Central Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,945	C	27.4	3,910	C	23.0
Route 4/ 7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,830**	**F**	**586.7**	**5,240**	**F**	**339.2**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,705	F	199.7	4,700	E	65.9
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,785	D	39.6	1,785	E	55.9
Route 4/ 4A*	740	D	27.9*	925	C	21.2*	1,005	E	44.3*	960	C	21.9*
Route 7/ 7A*	1,985	F	77.7*	1,745	D	28.3*	1,920	D	28.3*	2,085	F	87.7*
Route 8/33 (East)	3,655	C	31.2	4,680	E	64.3	4,335	D	52.9	2,250	C	29.1
Route 8/10	6,410	F	122.0	6,295	F	265.3	6,495	F	137.9	7,090	F	171.9
Route 10/ 15	5,550	D	49.7	5,585	F	197.9	6,230	F	197.9	6,245	F	147.2
Route 16/ 27A	2,770	C	24.3	3,130	F	99.9	4,905	D	44.9	5,405	F	80.6
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**587.3**	**9,380**	**F**	**455.3**	**9,825**	**F**	**470.0**
Route 16/ 10A	6,178	F	874.2	4,880	F	459.9	5,570	F	210.3	7,710	F	524.0
Route 17/ 4A*	720	C	17.0*	760	C	16.5*	710	C	16.5*	785	C	18.5*
Route 26/ 25*	3,180	F	270.1	3,495	F	369.5	4,125	F	85.4	4,365	E	62.3
Route 26/ 15	1,680	F	134.8*	1,790	F	3450.7*	2,235	C	30.2	2,375	C	25.4

Screening Analysis Locations – Central Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 28/ 27A	2,920	F	353.1*	2,565	F	528.0*	3,075	D	41.4	3,390	E	65.2
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	C	32.4	4,780	C	32.4	5,105	E	79.5
Route 15/ Road 1.16 M east of Route 26 (Second Gate)	1,040	N/A	N/A	1,010	C	22.1*	1,320	C	22.1*	1,410	C	21.1*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	D	48.1	7,230	D	48.1	7,740	F	94.2
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,795	E	73.5	2,125	F	209.1

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Apra Harbor Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,710	B	18.4	4,080	D	40.1
Route 1/ Polaris Pt	3,655	A	4.3	4,680	A	6.2	3,530	A	5.8	3,900	A	7.4
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	**4,270**	**E**	**67.5**	**4,755**	**D**	**54.1**

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – South Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 5/2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**2,960**	**E**	**55.1**	**3,235**	**C**	**22.8**
Route 5/17*	3,655	D	28.9*	4,680	E	47.8*	1,045	E	42.5*	1,080	F	128.5*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,385	C	30.6	2,355	C	24.9
Route 5/ Harmon Road*	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

INTERSECTION SCREENING TABLES
OPTION 8

Screening Analysis Locations – North Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,540	C	24.4	3,525	D	53.0
Route 1/29	3,675	F	87.6	2,970	E	60.5	4,025	F	85.3	3,895	F	90.5
Route 1/28	**5,700**	**F**	**226.2**	**6,050**	**F**	**157.7**	**6,885**	**F**	**198.5**	**7,390**	**F**	**139.5**
Route 3/3A	875	A	9.5*	880	B	10.1*	2,020	D	27.0*	2,550	F	140.7*
Route 3/28	1,904	B	17.8	2,070	C	21.4	4,635	C	33.2	4,595	D	47.5
Route 15/29*	1,760	F	****	1,575	F	683.5*	1,915	C	32.9	1,880	C	30.0
Route 3/ North (Commercial) Gate	1,010	N/A	N/A	970	N/A	N/A	3,310	D	38.2	3,090	E	56.6
Route 3/ South (Main) Gate	1,260	N/A	N/A	1,200	N/A	N/A	5,085	D	46.3	4,950	F	81.7
Route 3/ Control Tree Drive (Residential) Gate	1,300	F	122.3*	2,745	F	74.2*	4,525	D	39.7	4,750	C	22.6
Route 9/ Andersen AFB North Gate	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	**2,035**	**C**	**24.4**	**2,160**	**F**	******

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Central Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/26	5,910	E	75.8	6,060	F	229.8	7,845	F	145.9	8,010	F	250.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	7,640	F	178.8	7,540	F	329.4
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	4,775	D	53.9	4,900	D	51.2
Route 1/3	5,055	F	158.4	5,400	F	306.9	5,455	E	70.5	6,335	E	64.7
Route 1/16	5,905	D	52.2	6,410	F	305.5	7,070	E	57.0	7,785	F	103.9
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,855	E	69.6	6,465	E	77.6
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,860	E	74.2	6,460	F	126.0
Route 1/10A	6,935	F	82.9	7,055	F	117.2	7,565	F	126.1	8,340	F	186.0
Route 1/14B	6,120	E	60.5	6,485	F	91.8	6,545	F	90.4	7,160	E	79.5
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,430	F	113.6	8,830	F	267.2
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,915	F	146.3	7,715	F	285.3
Route 1/8	7,255	F	107.6	7,915	F	94.1	8,060	E	77.8	9,545	F	150.4
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	33.6	7,605	D	35.5

Screening Analysis Locations – Central Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,245	D	38.1	4,835	D	44.9
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,915**	**F**	**372.9**	**5,680**	**F**	**654.2**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,655	F	198.7	4,695	E	71.0
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,790	D	40.1	1,775	E	56.2
Route 4/ 4A*	740	D	27.9*	925	C	21.2*	1,020	E	47.4*	950	C	24.0*
Route 7/ 7A*	1,985	F	77.7*	1,745	D	28.3*	2,325	F	174.7*	2,520	F	300.8*
Route 8/33 (East)	3,655	C	31.2	4,680	E	64.3	4,220	D	45.5	4,820	E	77.8
Route 8/10	6,410	F	122.0	6,295	F	265.3	6,890	F	177.3	7,530	F	218.4
Route 10/ 15	5,550	D	49.7	5,585	F	197.9	6,170	F	197.9	6,500	F	178.1
Route 16/ 27A	2,770	C	24.3	3,130	F	99.9	3,490	C	31.4	4,120	D	35.5
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**587.3**	**8,105**	**F**	**361.1**	**8,470**	**F**	**336.6**
Route 16/ 10A	6,178	F	874.2	4,880	F	459.9	7,085	F	582.9	7,655	F	488.7
Route 17/ 4A*	720	C	17.0*	760	C	16.5*	695	C	16.1*	785	C	18.6*

Screening Analysis Locations – Central Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 26/ 25*	3,180	F	270.1	3,495	F	369.5	5,045	F	113.1	5,045	F	119.3
Route 26/ 15	1,680	F	134.8*	1,790	F	3450.7*	3,215	F	154.9	3,155	F	168.2
Route 28/ 27A	2,920	F	353.1*	2,565	F	528.0*	2,765	C	31.3	3,010	E	59.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	C	32.4	4,780	C	32.4	5,105	E	78.8
Route 15/ Road 1.16 M east of Route 26 (Second Gate)	1,040	N/A	N/A	1,010	C	22.1*	1,320	C	22.1*	1,410	C	22.6*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	D	48.1	4,765	N/A	N/A	5,830	N/A	N/A
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	N/A	N/A	2,350	N/A	N/A

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Apra Harbor Region, Option 8

Intersection	No-Action						Build					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,695	B	14.3	4,165	D	43.3
Route 1/ Polaris Pt	3,655	A	4.3	4,680	A	6.2	3,605	A	6.8	3,910	A	7.5
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	**4,285**	**E**	**67.5**	**4,785**	**E**	**57.5**

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – South Region, Option 8

Intersection	No-Action						Build					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)
Route 5/ 2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**3,115**	**E**	**79.9**	**3,335**	**C**	**25.9**
Route 5/ 17*	3,655	D	28.9*	4,680	E	47.8*	1,040	B	14.8*	1,100	E	42.4*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	30.7	2,355	C	27.0
Route 5/ Harmon Road*	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Appendix B
Detailed Results

Table B-1
Estimated Cancer Risk at Sidewalk Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8	
	dCR	dCR		dCR		dCR		dCR	
		2014	2030	2014	2030	2014	2030	2014	2030
Site 1	1.07E-05	7.43E-06	5.42E-06	9.02E-06	6.42E-06	9.78E-06	6.31E-06	9.93E-06	5.74E-06
Site 2	6.05E-07	2.17E-07	6.75E-07	1.74E-06	9.96E-07	1.86E-06	9.96E-07	1.74E-06	9.96E-07
Site 3	8.68E-06	6.96E-06	5.54E-06	8.51E-06	6.11E-06	1.03E-05	6.05E-06	1.05E-05	6.35E-06
Site 4	1.04E-05	5.95E-06	4.11E-06	6.17E-06	4.32E-06	6.20E-06	4.26E-06	5.58E-06	4.33E-06
Site 5	1.41E-05	8.45E-06	6.71E-06	1.16E-05	8.69E-06	1.30E-05	8.83E-06	1.24E-05	1.01E-05
Site 6	3.86E-06	3.19E-06	2.20E-06	3.54E-06	2.47E-06	3.47E-06	2.39E-06	3.58E-06	2.48E-06
Site 7	5.73E-06	6.43E-06	3.49E-06	5.61E-06	3.32E-06	5.55E-06	3.32E-06	5.61E-06	3.33E-06
Site 8	1.29E-06	1.22E-06	1.01E-06	1.48E-06	1.07E-06	1.46E-06	1.05E-06	1.50E-06	1.06E-06

Table B-2
Estimated Cancer Risk at Actual Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8	
	dCR	dCR		dCR		dCR		dCR	
		2014	2030	2014	2030	2014	2030	2014	2030
Site 1	2.49E-06	1.97E-06	1.43E-06	2.37E-06	1.46E-06	2.43E-06	1.52E-06	2.35E-06	1.54E-06
Site 4	5.34E-06	2.81E-06	1.48E-06	2.65E-06	1.65E-06	3.48E-06	2.30E-06	3.73E-06	2.45E-06

Table B-3
Estimated Non-Cancer Chronic Hazard Index at Sidewalk Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8	
	HQ	HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030
Site 1	1.22	0.87	0.65	1.06	0.77	1.14	0.75	1.15	0.70
Site 2	0.08	0.03	0.09	0.22	0.13	0.24	0.13	0.22	0.13
Site 3	1.06	0.83	0.66	0.21	0.72	1.21	0.72	1.21	0.75
Site 4	1.19	0.69	0.48	0.72	0.51	0.72	0.51	0.65	0.51
Site 5	1.59	1.01	0.80	1.33	0.99	1.46	1.01	1.43	1.09
Site 6	0.47	0.38	0.27	0.42	0.30	0.41	0.29	0.42	0.30
Site 7	0.68	0.74	0.42	0.65	0.40	0.65	0.40	0.65	0.40
Site 8	0.17	0.16	0.13	0.19	0.14	0.19	0.14	0.19	0.14

Table B-4
Estimated Non-Cancer Chronic Hazard Index at Actual Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8	
	HQ	HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030
Site 1	0.30	0.23	0.18	0.28	0.18	0.29	0.19	0.28	0.19
Site 4	0.63	0.34	0.19	0.33	0.21	0.42	0.28	0.45	0.30

Table B-5
Estimated Non-Cancer Acute Hazard Index at Sidewalk Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8	
	HQ	HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030
Site 1	1.20	0.85	0.64	1.04	0.76	1.12	0.74	1.13	0.69
Site 2	0.08	0.03	0.09	0.22	0.13	0.24	0.13	0.22	0.13
Site 3	1.04	0.82	0.65	1.01	0.72	1.19	0.71	1.19	0.74
Site 4	1.16	0.68	0.48	0.71	0.51	0.71	0.50	0.64	0.51
Site 5	1.56	0.99	0.79	1.31	0.98	1.44	1.00	1.41	1.08
Site 6	0.46	0.38	0.27	0.41	0.29	0.40	0.28	0.41	0.29
Site 7	0.67	0.72	0.41	0.64	0.40	0.64	0.40	0.64	0.40
Site 8	0.17	0.16	0.13	0.19	0.14	0.19	0.14	0.19	0.14

Table B-6
Estimated Non-Cancer Acute Hazard Index at Actual Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8	
	HQ	HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030
Site 1	0.29	0.23	0.17	0.28	0.18	0.29	0.19	0.28	0.19
Site 4	0.62	0.33	0.19	0.33	0.21	0.42	0.28	0.45	0.30

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GUAM HAUL ROAD

FINAL
MOBILE SOURCE AIR TOXIC ANALYSIS

PARSONS BRINCKERHOFF

June 15, 2010

1.0 Introduction

The relocation of 8,000 Marines and their families from Okinawa to Guam by 2014 is expected to have a significant impact on the local roads on Guam. Project-related changes in roadway volumes as a result of the Guam Haul Road Project could affect local air quality conditions near the affected roadways. The result of the air quality analyses conducted for the Environmental Impact Statement (EIS) for this project is that the proposed project alternatives would not cause or exacerbate a violation of an air quality standard. In addition, while the EIS qualitatively addressed the potential affects of project-related changes on local mobile source air toxic (MSAT) concentrations (as per current FHWA guidance), the United States Environmental Protection Agency (EPA) and the Department of Defense (DOD) requested that a quantitative (screening-level) MSAT dispersion modeling analysis be conducted to determine whether these changes would be acceptable.

2.0 Air Toxics

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

As part of the National Environmental Policy Act (NEPA), EISs require review and evaluation of air toxics, as they could affect the quality of the human environment. For these analyses, the FHWA developed a tiered approach in their September 30, 2009 Interim Guidance Update on Mobile Source Air Toxic Analyses (MSAT) in NEPA documents, which includes the following three levels of analysis:

1. No analysis for projects with no potential for meaningful MSAT effects;

2. Qualitative analysis for projects with low potential MSAT effects; or

3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Using this methodology, an initial MSAT analysis for this project indicated that it would have a low potential for MSAT effects. However, a quantitative MSAT analysis was requested for this project based on the methodology described in the research report entitled, "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" (American Association of State Highway and Transportation Officials (AASHTO) 2007).

3.0 Approach

The analysis approach was developed based on available project information, potential community impact, and the public's level of concern. Not only were the impacts of the project on localized MSAT levels raised as a concern with this project, but several intersections in the project area under the Build alternatives are projected to have Annual Average Daily Traffic (AADTs) over the 40,000 threshold specified in the AASHTO report.

As a result, a screening-level MSAT dispersion modeling analysis was conducted based on the procedures provided in Appendix C of the AASHTO report to estimate whether the incremental health-related risk associated with the proposed project would exceed the following thresholds:

- A maximum total incremental carcinogenic risk from the exposure to all identified pollutants of 10 in a million (i.e., 10×10^{-6}); and

- A maximum total incremental non-carcinogenic Hazard Index risk from the exposure to all identified pollutants of 1.

The analysis has focused on the potential impacts of operational emissions rather than construction phase emissions, because the health-related risks, if any, associated with this project would primarily be the result of long-term exposure. This is because the roadway construction phase of this project is temporary (i.e., less than 5 years) and will be occurring at any given location for a relatively short period of time. Therefore, this analysis has focused on the long-term operational impacts of the project.

The following tasks were conducted for the dispersion modeling analysis:

- Local microscale sites (congested intersections) were selected for analysis.

- MSAT emission factors were estimated using EPA's MOBILE6.2 model (Note: input parameters to accurately model MSAT were determined through consultation with FHWA and EPA).

- CAL3QHCR dispersion modeling was conducted using worst case meteorology to estimate 1-hour concentrations of each MSAT, which were used to estimate acute (short-term) impacts. These 1-hour values were then converted, using conservative traffic and meteorological persistence factors, to annual values in order to estimate annual impacts.

Diesel PM was not quantitatively considered in the screening-level dispersion modeling analysis because of the significant limitations of the MOBILE6.2 model noted by the USEPA in the 2006 Conformity Rule (71 FR 12498):

> "We continue to believe that appropriate tools and guidance are necessary to ensure credible and meaningful PM2.5 and PM10 hot-spot analyses. Before such analyses can be performed, technical limitations in applying existing motor vehicle emission factor models must be addressed, and proper federal guidance for using dispersion models for PM hotspot analysis must be issued. With the release of MOBILE6.2, state and local transportation agencies now have an approved model for estimating regional PM2.5 and PM10 emission factors in SIP [State Implementation Plan] inventories and regional emissions analyses for transportation conformity. However, MOBILE6.2 has significant limitations that make it unsatisfactory for use in microscale analysis of PM2.5 and PM10 emissions as necessary for quantitative hot-spot analysis."

Federal guidance for using dispersion models for PM hotspot analyses has not been issued. As a result, a qualitative analysis of diesel PM was completed based on FHWA/USEPA's March 29, 2006 joint direction *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in* $PM_{2.5}$ *and* PM_{10} *Nonattainment and Maintenance Areas* (EPA420-B-06-902).

4.0 MSAT Considered

The seven priority MSAT compounds considered were:

- Acrolein, benzene, 1,3-butadiene, formaldehyde, and naphthalene were analyzed quantitatively;

- Polycyclic organic matter (POM) was considered as being comprised of the following compounds, which were quantitatively analyzed on a pollutant-by pollutant basis:

acenaphthene	chrysene
acenaphylene	debenz[a,h]anthracene
anthracene	fluoranthene
benzo(g,h,i) perylene	fluorene
benzo[b]fluoranthene	ideno[1,2,3-cd]pyrene
benzo[k]fluoranthene	phenanthrene, and
benz[a]anthracene	pyrene
benzo[a]pyrene	

- Diesel PM was analyzed qualitatively.

Table 1 presents each of the MSAT compounds considered, together with their applicable health guideline values. As shown, two of these compounds – acenaphthylene and benzo(g,h,i) perylene – have no health guideline values and, therefore, were not included in the screening-level dispersion modeling analysis.

Table 1 – Mobile Source Air Toxics

MSAT	CAS No.[(1)]	Toxicity	AIEC[(2)] (1-hour Values) (ug/m^3)	RfC[(3)] (Lifetime Exposure Values) (ug/m^3)	URF (Unit Risk Factors) $(ug/m^3)^{-1}$
Acrolein	107-02-8	non-carcinogen	0.19	0.02	
Benzene	71-43-2	carcinogen & non-carcinogen	1,300	30	7.8E-06 [(4)]
1,3-Butadiene	106-99-0	carcinogen & non-carcinogen		2.3	3.0E-05
Diesel PM	-	carcinogen & non-carcinogen		5.0[(5)]	[(6)]
Formaldehyde	50-00-0	carcinogen & non-carcinogen	94	9.8	1.3E-05
Naphthalene	91-20-3	non-carcinogen	75,000	3.0	
POM (Polycyclic Organic Matter) constituents:					
Acenaphthylene	208-24-2	non-carcinogen			
Acenaphthene	83-32-9	non-carcinogen	1300	210	
Anthracene	120-12-7	non-carcinogen	600	1,000	
Benzo(g,h,i) perylene	191-24-2	non-carcinogen			
Benzo[b]fluoranthene	205-99-2	carcinogen	600		1.1E-04
Benzo[k]fluoranthene	207-08-9	carcinogen	600		1.1E-04
Benz[a]anthracene	56-55-3	carcinogen	300		1.1E-04
Benzo[a]pyrene	50-32-8	carcinogen	600		1.1E-03
Chrysene	218-01-9	carcinogen	600		1.1E-05
Dibenzo[a,h]anthracene	53-70-3	carcinogen	30,000		1.2E-03
Fluoranthene	206-44-0	non-carcinogen	15	140	
Fluorene	86-73-7	non-carcinogen	11,560	140	
Ideno[1,2,3-cd]pyrene	193-39-5	carcinogen	500		1.1E-04
Phenanthrene	85-01-8	non-carcinogen	1.000		
Pyrene	129-00-0	non-carcinogen	15,000	110	

Notes:

1. *CAS Number = unique numerical identifiers for each chemical, elements, compounds, etc.*
2. *AIEC = Acute Inhalation Exposure Concentration (as provided by EPA)*
3. *RfC= Reference Concentration (which is a daily exposure during a lifetime).*
4. *The most conservative unit risk factor for benzene (from the range of 2.2E-06 to 7.8E-06) was used.*
5. *In addition, as stated in the USEPA's "Regulatory Impacts Analysis, Control of Hazardous Air Pollutants from Mobile Sources" (EPA420-R-07-002, February 2007): "The Diesel HAD [Health Assessment Document] also briefly summarizes health effects associated with ambient PM and discusses the EPA's annual National Ambient Air Quality Standard (NAAQS) of 15 ug/m^3. There is a much more extensive body of human data showing a wide spectrum of adverse health effects associated with exposure to ambient PM, of which diesel exhaust is an important component. The PM2.5 NAAQS is designed to provide protection from the noncancer and premature mortality effects of $PM_{2.5}$ as a whole, of which diesel PM is a constituent".*
6. *According to the USEPA's "Health Assessment Document for Diesel Engine Exhaust" (EPA/600/8-90/057F, May 202, pp 8-16, http://www.epa.gov/risk/basicinformation.htm#g): "an exploratory risk analysis shows that environmental cancer risks possibly range from 10^{-5} to nearly 10^{-3}, while a consideration of numerous uncertainties and assumptions also indicates that lower risk is possible and zero risk cannot be ruled out. These risk findings are only general indicators of the potential significance of the lung cancer hazard and should not be viewed as a definitive quantitative characterization of risk or be used to estimate an exposure-specific population impact, i.e., estimating numbers of cancer deaths".*

5.0 Qualitative Diesel PM Analysis

Absent the appropriate tools and guidance necessary to ensure credible and meaningful quantitative PM hot-spot analyses, a qualitative analysis of diesel PM was conducted. The objective of the analysis is to determine if the proposed project could produce levels in excess of the annual $PM_{2.5}$ NAAQS, which is designed to provide protection from the noncancer and premature mortality effects of $PM_{2.5}$ as a whole, of which diesel PM is a constituent. The 2-step approach was adopted based on the March 10, 2006 Final Rule issued by the USEPA regarding the localized or "hot-spot" analysis of $PM_{2.5}$ (40 CFR Part 93): 1) apply criteria to determine if the project would involve a significant number or significant increase in the number of diesel vehicles and 2) comparing air monitoring values from an area representative of project conditions. As previously discussed, the study area is classified as attainment for $PM_{2.5}$ NAAQS.

The criteria to determine if the project would involve a significant number or significant increase in the number of diesel vehicles were applied and evaluated as follows:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.

The average daily traffic (ADT) on the highest volume roadways under all Build options is provided in Tables 2 and 3. Additional ADT information can be found in Appendix A. As detailed in the traffic analysis for the project, truck percentages on all roadways have been estimated to be approximately 10 percent for both the No Build and Build options.

As shown in Table 2, the largest increase in 2014 ADT for the roadways presented is predicted to occur under Options 1, 2 and 2 Constrained on Route 3 at the North Commercial Gate. By applying a 10 percent truck percentage, the largest daily increase of 66,900 vehicles would result in a daily increase of 6,690 trucks. As shown in Table 3, the largest increase in 2030 ADT for the roadways presented is predicted to occur under Option 1, 2 and 2 Constrained on Route 3 at the North Commercial Gate. By applying a 10 percent truck percentage, the largest daily increase of 45,900 vehicles would result in a daily increase of 4,590 trucks. Both of these levels are substantially below the USEPA example for a new or expanded highway project of 125,000 AADT with 8 percent trucks, which would translate to an increase of 10,000 trucks. Thus, the project is not considered to be an expanded highway with a significant number of or significant increase in diesel vehicles.

Table 2 – 2014 Average Daily Traffic for Major Roadways

Analysis Region	Roadway	No Build	Option 1, 2 and 2 Constrained		Option 3		Option 8	
			Build	% Change	Build	% Change	Build	% Change
North	Route 3 and North Commercial Gate	0	66,900	NA	24,300	NA	65,500	NA
	Route 3 South of Route 28	11,499	53,100	362%	56,600	392%	57,000	396%
Central	Route 1	79,337	100,300	26%	97,400	23%	100,500	27%
	Route 8	48,221	65,600	36 %	68,000	41%	66,800	39%
	Route 18	49,196	74,000	50%	92,800	89%	80,100	63%
Apra Harbor	Route 1 near Route 18	46,407	49,800	7%	49,800	7%	49,800	7%
South	Route 4	15,833	17,600	11%	17,600	11%	17,600	11%

Table 3 – 2030 Average Daily Traffic for Major Roadways

Analysis Region	Roadway	No Build	Option 1, 2 and 2 Constrained		Option 3		Option 8	
			Build	% Change	Build	% Change	Build	% Change
North	Route 3 and North Commercial Gate	0	45,900	NA	18,800	NA	45,200	NA
	Route 3 South of Route 28	12,070	34,000	182%	43,000	256%	25,000	396%
Central	Route 1	84,935	95,600	12%	93,100	10%	95,300	27%
	Route 8	53,248	58,600	10 %	60,400	13%	59,700	39%
	Route 18	59,980	70,500	18%	89,200	49%	75,100	63%
Apra Harbor	Route 1 near Route 18	41,142	48,300	17%	48,400	18%	48,600	18%
South	Route 4	21,504	20,100	-7%	20,000	-7%	19,900	-7%

(ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

The proposed project is expected to affect intersections with a LOS of D, E or F. However, the effect on LOS due to the project options is due to an overall increase in volumes rather than a significant increase in diesel vehicles. The LOS for intersections throughout the study area is detailed in Appendix A of this report.

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

The project does not involve bus and rail terminals.

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.

The project does not involve bus and rail terminals.

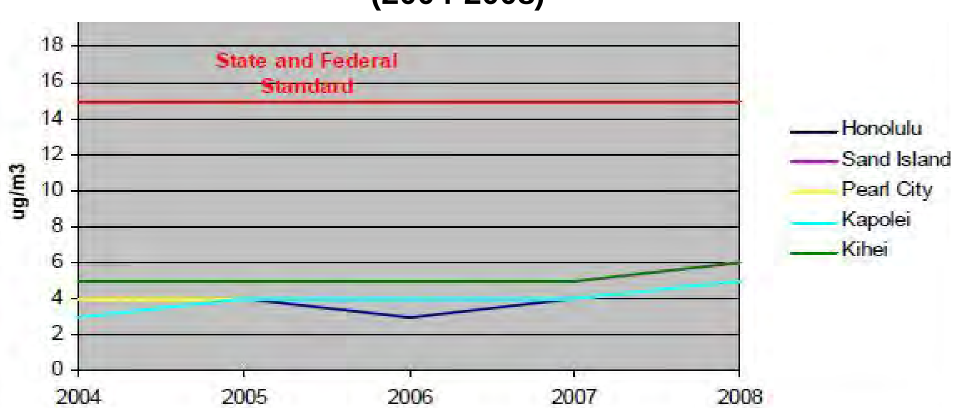
(v) Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The area is classified as attainment of the PM2.5 NAAQS. There is no applicable implementation plan or implementation plan submission.

Based on the above analysis, it is determined that the project will not involve a significant number or significant increase in the number of diesel vehicles and is not a project of air quality concern with respect to $PM_{2.5}$.

Guam does not currently have any ambient air quality monitoring locations for $PM_{2.5}$. The closest representative monitor to the study area, based on meteorological conditions, is located in Hawaii. As shown in Figure 1, Hawaii has not had a violation of the applicable $PM_{2.5}$ standard in the last three years of certified data (2006-2008). The values in Hawaii can be used as a general indicator of the range of values expected in Guam, although there are some notable differences between the locations – the population is greater in Hawaii than in Guam, roadway VMTs are approximately 3 times higher in Hawaii than in Guam, and high sulfur fuel is not used in the power plants of Hawaii while it is in Guam. The monitored $PM_{2.5}$ values in Hawaii are approximately 50% lower than the applicable standard. Using these values as a conservative estimate of $PM_{2.5}$ levels within the study area under Build conditions, it indicates that the mobile source impacts of the project are not expected to cause a violation of the applicable $PM_{2.5}$ standard, designed in part to provide protection from the noncancer and premature mortality effects of diesel PM.

Figure 2 – $PM_{2.5}$ Annual Average Monitored Levels in Hawaii (2004-2008)



6.0 Mobile Source Dispersion Modeling Analysis

Microscale air quality modeling was performed using EPA's mobile source emission factor model (MOBILE6.2) and EPA's CAL3QHC air quality dispersion model to estimate future No Build (without the proposed project) and future Build (with the proposed project) MSAT levels at selected locations in the project area.

<u>Analysis Sites and Receptor Locations</u>

Using a worst case screening approach, analysis locations were chosen based on overall volumes, level of service, and location of project impacts. Site selection is discussed in the EIS for this project and the data used for the site selection is shown in Appendix A. The sites analyzed are:

1. Routes 1 & 28
2. Routes 9 & AAFB
3. Route 1 & Route 8
4. Route 4 & 7A
5. Route 16 & 27
6. Route 5 and 2A
7. Routes 1 and 2A

In addition to these locations, an eighth analysis site was added at the location of Route 1 west of Route 30. This location was added because it demonstrated the highest peak hour traffic at a free-flow location. These eight areas have the highest traffic levels within the study area and are anticipated to be the areas with the highest potential of MSAT impact due to the project.

Receptors were conservatively placed on sidewalks as a worst case approach. This is conservative because, as previously mentioned, the risks from MSAT are based on lifetime exposure levels and it is highly unlikely that a sidewalk receptor is representative of a lifetime exposure level. Realistic (actual) receptor locations were placed at analysis sites 1 and 4 to illustrate the drop off of MSAT concentrations with distance from the affected roadways.

<u>Emission Factors</u>

Emission factors were obtained through the use of EPA's MOBILE6.2 Emission Factor program. To determine the emission factors for all of the air toxics examined, the additional hazardous air pollutant data supplied with MOBILE6.2 was utilized. As the exact fuel parameters that characterize the fuel used in Guam were not available, national average information was applied, as recommended by EPA. These data can be found at EPA's website (http://www.epa.gov/otaq/regs/fuels/rfg/properf/cg-params.htm).

Dispersion Model

EPA's CAL3QHCR model was used to predict MSAT concentrations at the 8 analysis sites. Conservative worst case meteorology and traffic data were used in the analysis.

CAL3QHCR was run for each of the 20 individual MSAT compounds for the AM and PM peak periods for existing conditions and for future No Build and Build conditions (under each of the Build alternatives). The highest concentration for each air toxic compound at each location is reported.

7.0 Risk Characterization

The derived health risk values from the EPA Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/) database were used in this analysis to determine the total risk posed by the release of multiple MSAT. MSAT were considered as both carcinogens and noncarcinogens. Carcinogenic MSAT were evaluated using unit risk factors (URF); non-carcinogenic MSAT were evaluated using the reference concentrations for inhalation exposure (RfC) and/or acute inhalation exposure (AIEC). RfC and AIEC were used to estimate non-carcinogenic health effects of substances that are also carcinogens. The health risk values used in this analysis are provided in Table 1. The incremental threshold values recommended by EPA for this project are 10 per million for cancer risk evaluation and one (1) for the total non-cancer (chronic and acute) hazard indexes.

Carcinogens

Individual lifetime cancer risk through direct inhalation of carcinogen (dCR) was estimated using the following equation (EPA's Human Health Risk Assessment Protocol [HHRAP]), Appendix C, Table C-2-1 2005):

Cancer Risk (dCR) = EC x URF and EC = Ca x EF x ED/AT x 365 days/year

Where:

EC = annual exposure concentrations of compound, µg/m^3

Ca = annual ambient air concentration of specific pollutant (estimated by the dispersion model), µg/m^3

URF = compound-specific inhalation unit risk factor in (µg/m^3)-1

EF = exposure frequency, days/year (EPA recommends to use 350)

ED = exposure duration, yr (EPA recommends value of 30 for adult resident)

AT = averaging time, yr (assumed by EPA to be 70 years)

Ca values were determined using the equation from Table B-5-1 of HHRAP, compound-specific emission rate, and Fv (fraction of compound air concentration in vapor phase) of 1. Annual concentrations were derived from CAL3QHCR-estimated 1-hour concentrations using a 0.1 conversion factor.

Once the individual risk of each compound was estimated, these values were summed together to estimate the total cancer risk of all carcinogens together. Incremental changes in cancer risk were estimated for each Build alternative compared to No Build conditions. If the projected change is less than or equal to the ten in one million, the total carcinogenic risk posed by the proposed action is considered to be acceptable.

<u>Non-Carcinogens</u>

Non-cancer chronic inhalation hazard quotients were estimated using the following equation (HHRAP, Appendix C, Table C-2-2):

$$\text{Non-Cancer Hazard Index} = EC \times 0.001/RfC \text{ and } EC = Ca \times EF \times ED/AT \times 365 \text{ days/year}$$

Where:

EC = exposure concentrations of compound, µg/m^3

Ca = total ambient air concentration of specific pollutant (estimated by the dispersion model), µg/m^3

RfC = reference dose concentration, established by the EPA, mg/m^3

EF = exposure frequency, days/year (EPA recommends to use 350)

ED = exposure duration, yr (EPA recommends value of 30 for adult resident)

AT = averaging time, yr (EPA recommends value of 30 for non-carcinogens)

0.001 = units conversion factor, mg/µg

For the acute short-term inhalation exposure the following equation was used (HHRAP, Appendix C, Table C-2-3):

$$\text{Acute Hazard Index} = C_{acute} \times 0.001/AIEC$$

Where:

C_{acute} = *1-hour air concentration (estimated by the dispersion model), µg/m3*

AIEC = 1-hour acute inhalation exposure guideline value, mg/m3

0.001 = units conversion factor, mg/µg

The maximum estimated 1-hour concentration for each MSAT was estimated directly from the CAL3QHCR model. Once the chronic or acute hazard quotient of each compound was estimated, these values were summed together to arrive with total chronic or acute Hazard Index. Potential non-cancer impacts of the proposed action were estimated by comparing the total hazard index of each Build alternative to No Build conditions. If the incremental change in the total hazard index is less than or equal to one, the potential non-carcinogenic chronic or acute risk impact associated with the proposed action is considered acceptable.

8.0 Receptor Sites

Two types of receptors were considered – sidewalk receptors and property line receptors (actual).

> Sidewalk Receptors -- these are located at mid-sidewalk near each intersection, and were selected following EPA's *Guideline for Modeling Carbon Monoxide from Roadway Intersections*. The results obtained at these locations are considered to be very conservative for a chronic or lifetime exposure assessment because people are not exposed to the concentrations estimated at these locations for extended periods of time.
>
> Actual Receptors – the following sensitive land uses were identified near two of the eight analysis sites:
>
> - The Family Baptist Church, located approximately 150 feet from the edge of the roadways considered for Site 1; and
> - The Academy of Our Lady of Guam, located approximately 25 feet from the edge of the roadways considered for Site 4.

Analysis sites and receptor locations are shown in Appendix B. The results obtained at these locations are considered to be more representative of the health risk associated with this project because people at these locations may be exposed to the estimated concentrations for extended periods of time.

9.0 Results

The screening-level MSAT dispersion modeling analysis was conducted using both sidewalk and actual receptors. The results of this analysis are shown in Tables 4 and 5, which present the estimated cancer risk increases/decreases at sidewalk and actual receptors between No Build and Build conditions. The estimated non-cancer total chronic hazard index increases/decreases are presented in Tables 6 and 7, and the estimated non-cancer acute hazard index increases/decreases are presented in Tables 8 and 9. For more detailed results, estimated cancer risks under No Build and Build conditions at sidewalk and actual receptors are presented in Tables C-1 and C-2 in Appendix C. The estimated non-cancer total chronic hazard indexes are presented in Tables C-3 and C-4 in the Appendix, and the estimated non-cancer acute hazard indexes are presented in Tables C-5 and C-6. Sample input and output CAL3QHCR files are also included in Appendix C.

The following are the results of the MSAT analysis:

1. Maximum estimated increases in cancer risk at any of the receptors due to the project are all less than threshold criteria of 10 in a million. Therefore, the project impacts of all carcinogenic MSAT are considered acceptable; and

2. Maximum estimated increases in the total chronic hazard index at any of the receptors due to the project are all less than the threshold limit of 1. Therefore, the project impacts of all non-carcinogenic MSAT are considered acceptable;

Based on these results, the proposed action is not anticipated to have adverse MSAT impacts. Additionally, as shown in the appendix:

- Future cancer and non-cancer risks, under both No Build and Build conditions, are less than existing risks in most cases; and

- Cancer and non-cancer risks at the actual receptors are substantially lower than the values estimated at the sidewalk receptors.

Table 4
Estimated Cancer Risk Increase/Decrease at Sidewalk Receptors (x10^{-6})

Site No.	Option 1/2		Option 3		Option 8		Option 2 Constrained		Cancer Risk Threshold
	2014	2030	2014	2030	2014	2030	2014	2030	
Site 1	1.60	1.00	2.36	0.89	2.50	0.32	1.14	0.51	10
Site 2	0.97	0.26	0.97	0.26	0.96	0.26	0.99	0.26	
Site 3	1.64	0.78	3.54	1.01	3.56	1.31	2.60	1.21	
Site 4	1.22	-0.09	1.24	-0.15	0.63	-0.08	1.56	0.45	
Site 5	2.97	1.99	4.31	2.12	3.70	3.37	1.58	0.69	
Site 6	0.46	0.08	0.39	0.00	0.50	0.09	0.46	0.08	
Site 7	-0.82	-0.06	-0.88	-0.06	-0.82	-0.06	-0.82	-0.06	
Site 8	0.26	0.06	0.24	0.04	0.29	0.05	0.26	0.06	

Table 5
Estimated Cancer Risk Increase/Decrease at Actual Receptors (x10^{-6})

Site No.	Option 1/2		Option 3		Option 8		Option 2 Constrained		Cancer Risk Threshold
	2014	2030	2014	2030	2014	2030	2014	2030	
Site 1	0.41	0.03	0.46	0.09	0.39	0.11	0.29	0.14	10
Site 4	0.66	-0.01	1.49	0.64	1.74	0.80	0.81	0.27	

Table 6
Estimated Non-Cancer Chronic Hazard Index Increase/Decrease at Sidewalk Receptors

Site No.	Option 1/2		Option 3		Option 8		Option 2 Constrained		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	2014	2030	
Site 1	0.19	0.12	0.27	0.11	0.28	0.05	0.15	0.07	
Site 2	0.18	0.07	0.18	0.07	0.17	0.07	0.23	0.23	
Site 3	0.19	0.10	0.38	0.09	0.31	0.13	0.27	0.11	
Site 4	0.62	0.00	0.62	-0.01	0.55	0.00	0.66	0.01	1
Site 5	0.32	0.20	0.46	0.22	0.42	0.29	0.20	0.09	
Site 6	0.05	0.01	0.05	0.00	0.06	0.01	0.05	0.01	
Site 7	-0.09	0.00	-0.09	0.00	-0.09	0.00	-0.09	0.00	
Site 8	0.03	0.01	0.03	0.01	0.04	0.01	0.03	0.01	

Table 7
Estimated Non-Cancer Chronic Hazard Index Increase/Decrease at Actual Receptors

Site No.	Option 1/2		Option 3		Option 8		Option 2 Constrained		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	2014	2030	
Site 1	0.05	0.00	0.06	0.01	0.05	0.01	0.04	0.02	1
Site 4	0.08	0.00	0.17	0.07	0.20	0.09	0.10	0.01	

Table 8
Estimated Non-Cancer Acute Hazard Index Increase/Decrease at Sidewalk Receptors

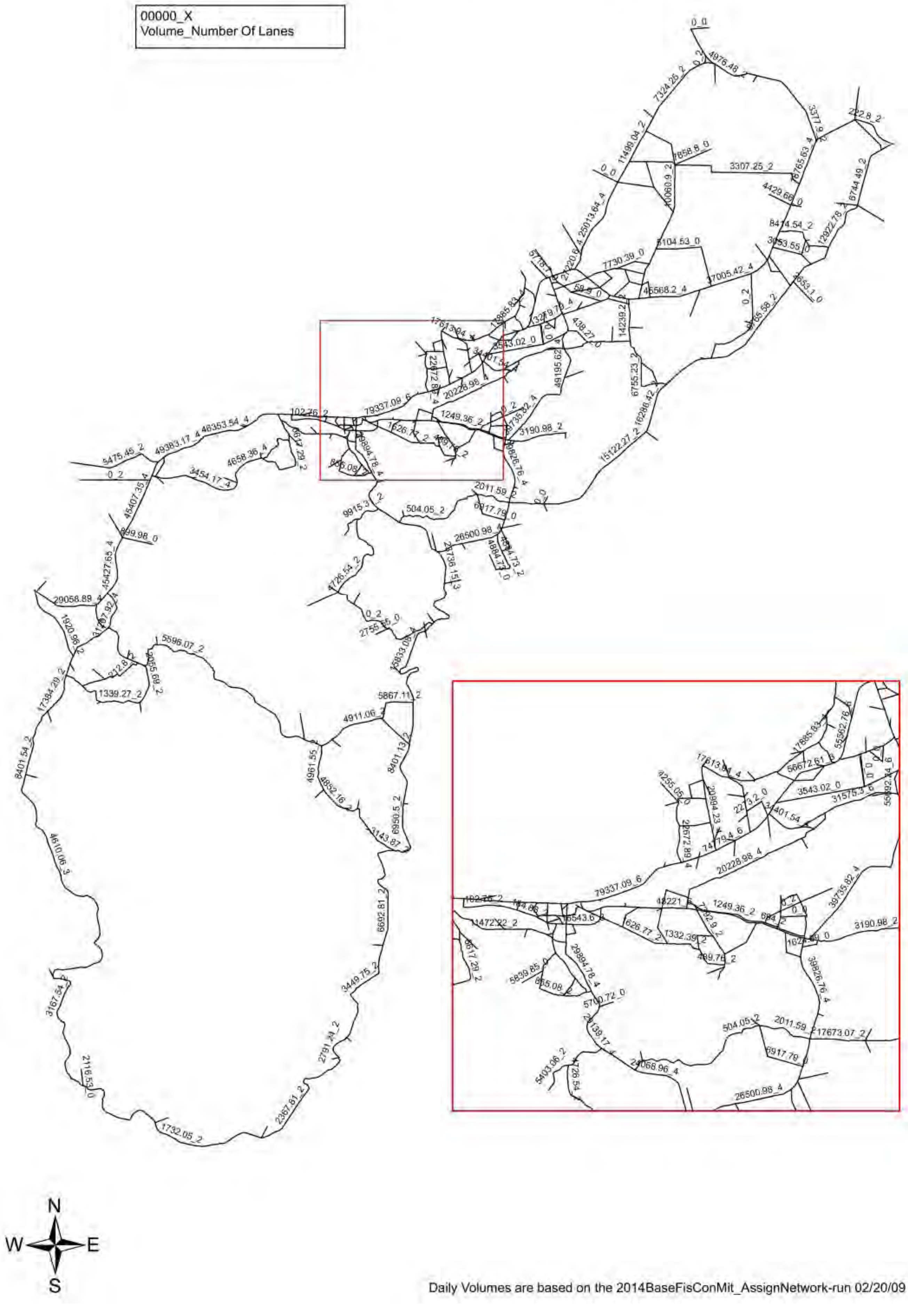
Site No.	Option 1/2		Option 3		Option 8		Option 2 Constrained		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	2014	2030	
Site 1	0.19	0.12	0.27	0.11	0.28	0.05	0.82	0.58	1
Site 2	0.18	0.08	0.18	0.08	0.18	0.08	0.24	0.24	
Site 3	0.19	0.10	0.37	0.09	0.36	0.13	0.26	0.11	
Site 4	0.66	0.00	0.67	-0.01	0.60	0.00	0.70	0.01	
Site 5	0.32	0.19	0.44	0.21	0.41	0.29	0.20	0.09	
Site 6	0.05	0.01	0.05	0.00	0.06	0.01	0.36	0.28	
Site 7	-0.08	0.00	-0.09	0.00	-0.08	0.00	-0.08	0.00	
Site 8	0.03	0.01	0.03	0.00	0.04	0.01	0.03	0.01	

Table 9
Estimated Non-Cancer Acute Hazard Index Increase/Decrease at Actual Receptors

Site No.	Option 1/2		Option 3		Option 8		Option 2 Constrained		EPA Hazard Index
	2014	2030	2014	2030	2014	2030	2014	2030	
Site 1	0.05	0.01	0.06	0.01	0.05	0.01	0.04	0.01	1
Site 4	0.08	0.00	0.17	0.07	0.20	0.09	0.10	0.01	

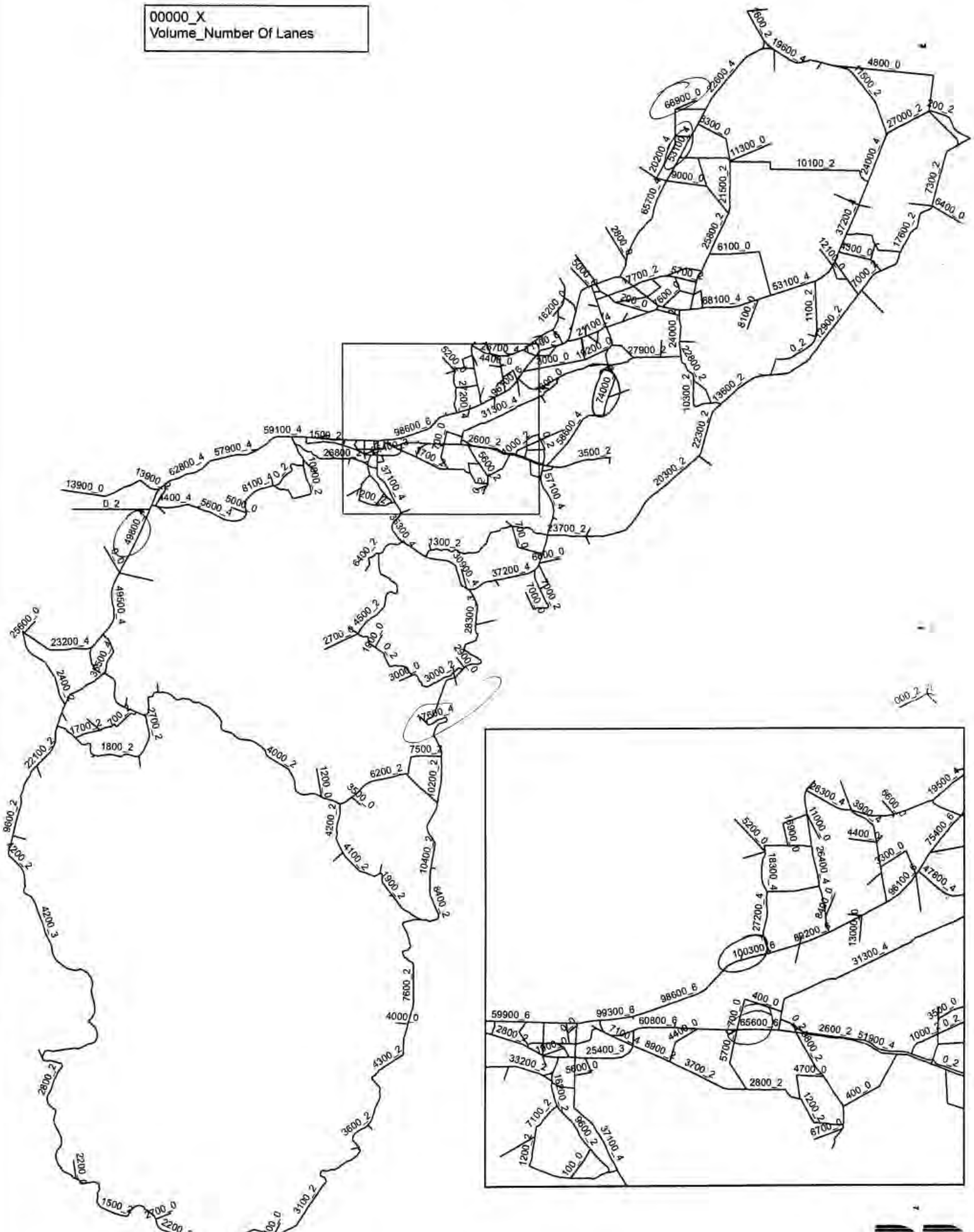
Appendix A
Average Daily Traffic and Intersection Data

Guam
2014 Daily Traffic Volumes - No Build



Daily Volumes are based on the 2014BaseFisConMit_AssignNetwork-run 02/20/09

Guam
2014 Daily Traffic Volumes - Option 1 Build

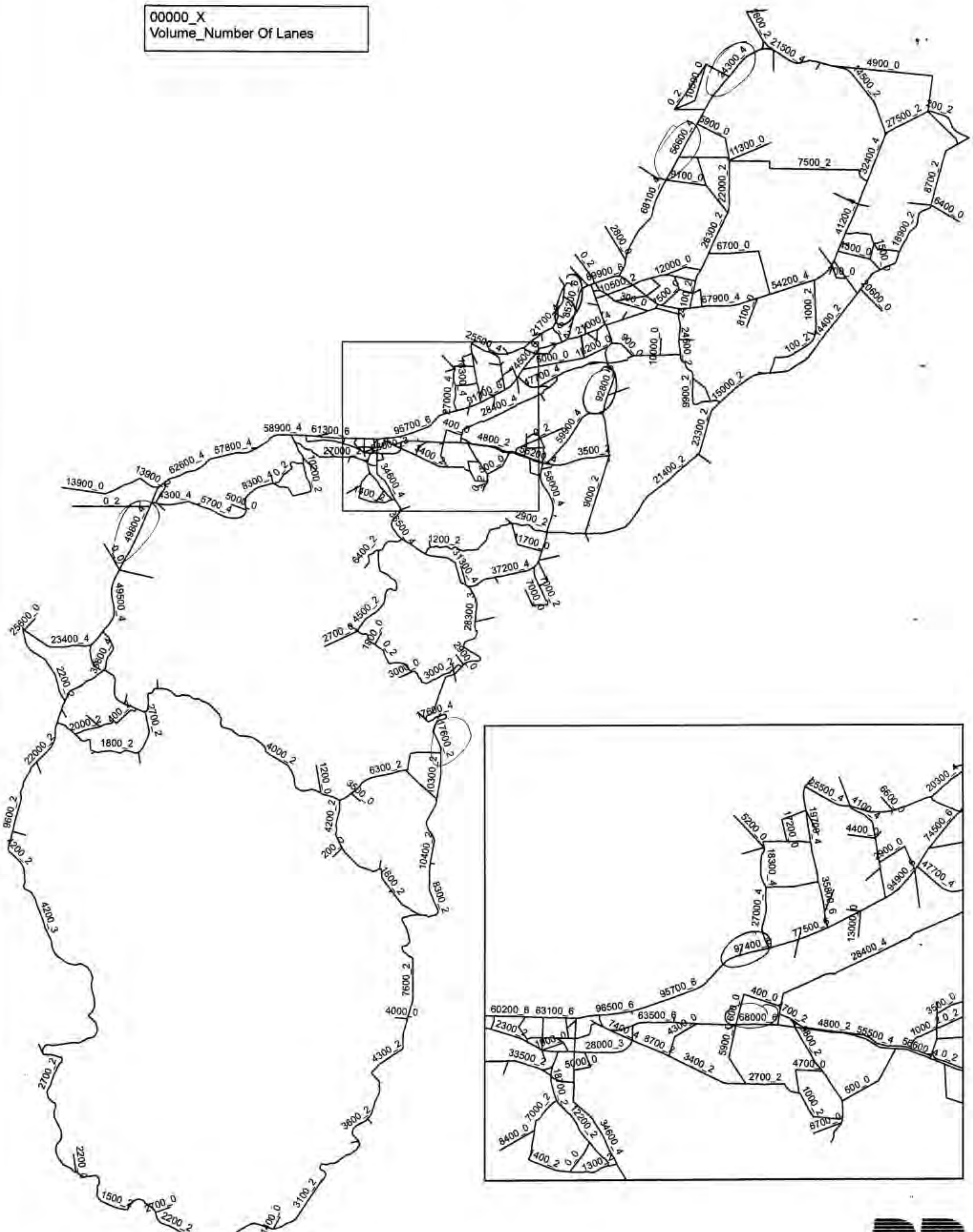


Daily Volumes are based on the 2014C1FisMilMit-run 02/24/09

1 100,300
8 65,600
18 74,000

034

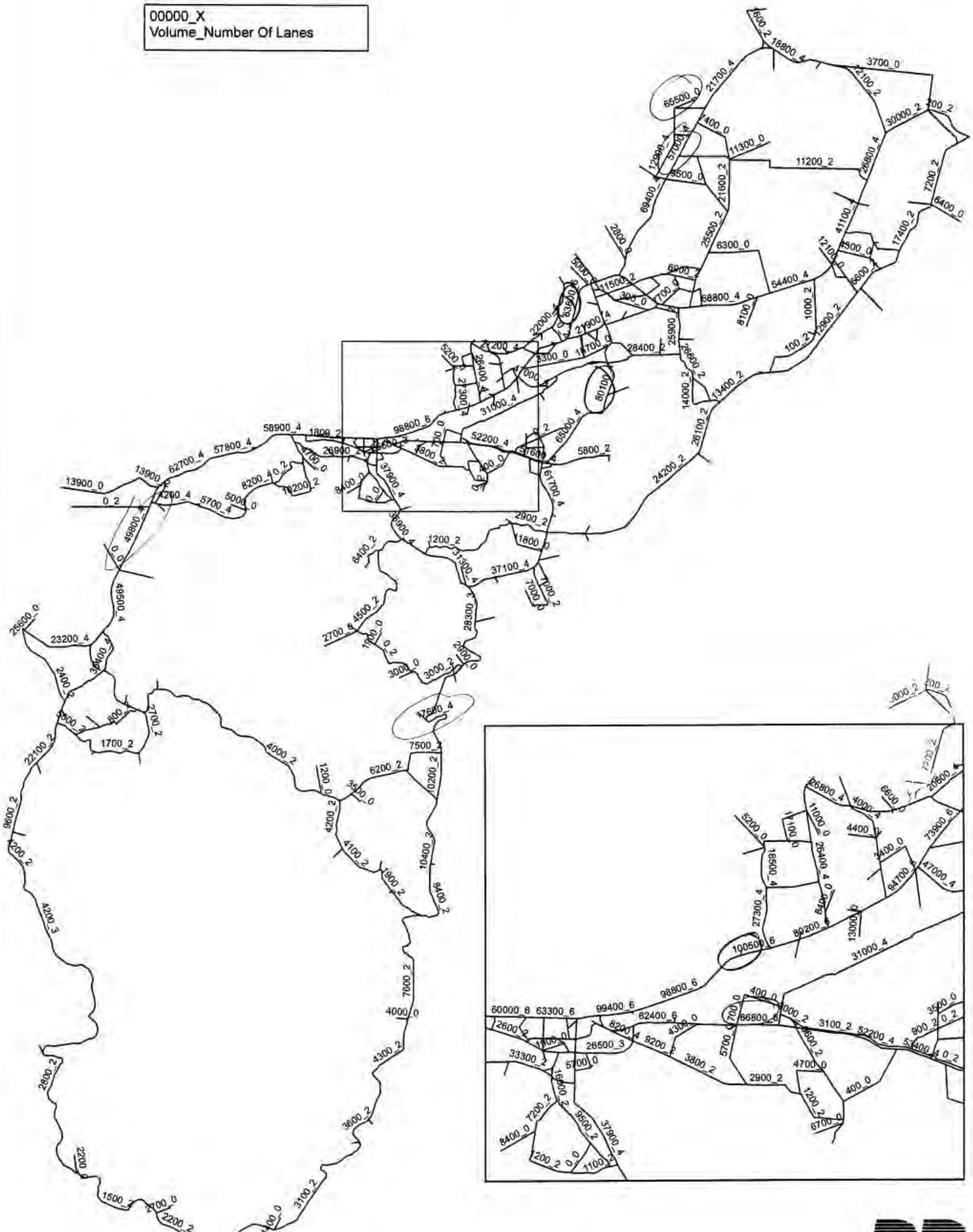
Guam
2014 Daily Traffic Volumes - Option 3 Build



1 97,400
8 68000
18 92800
10 34 85,200

Daily Volumes are based on the 2014C3FisMilMit-run 03/04/09

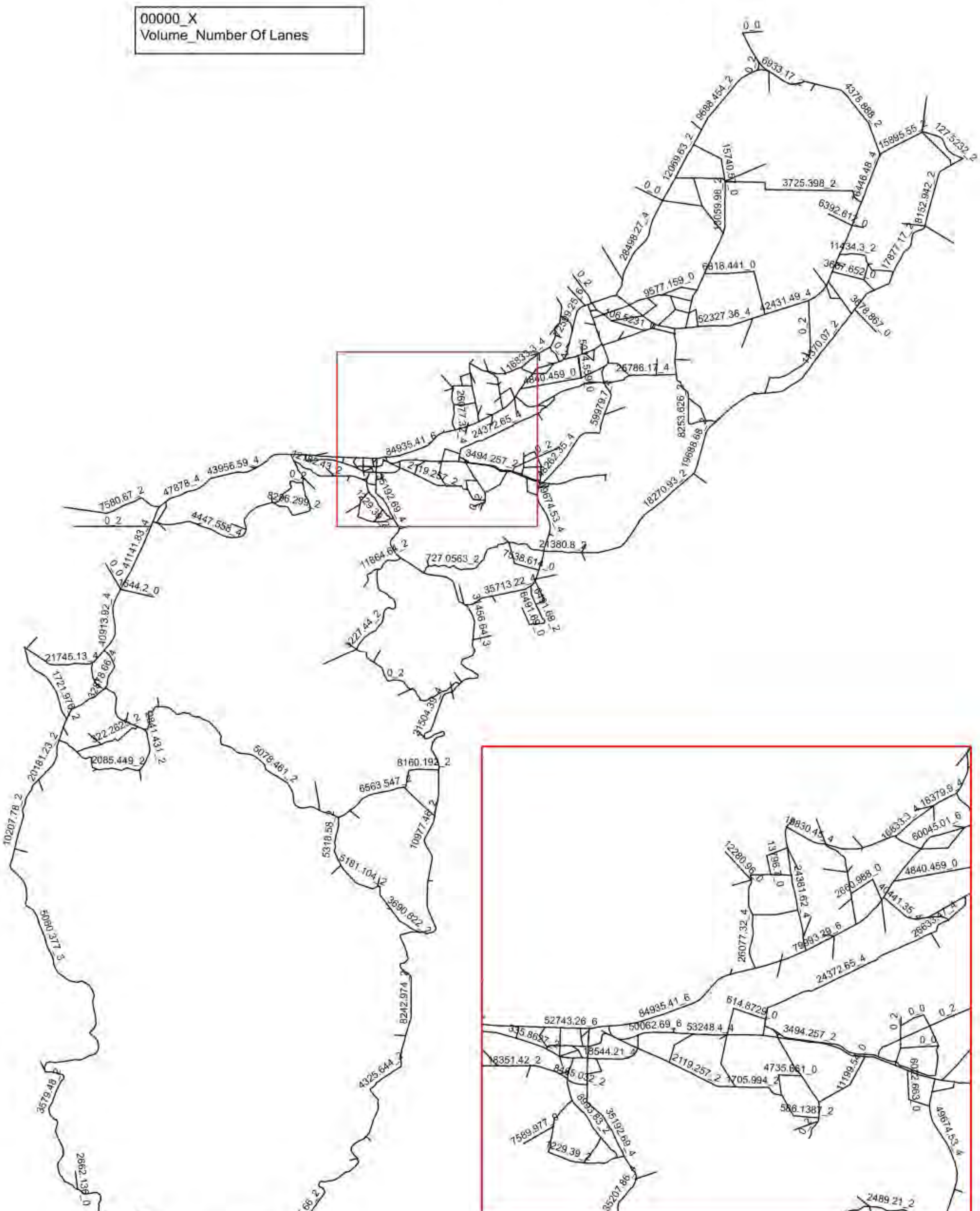
Guam
2014 Daily Traffic Volumes - Option 8 Build



1 100,500
8 66,800
18 80,100
C34 83,800

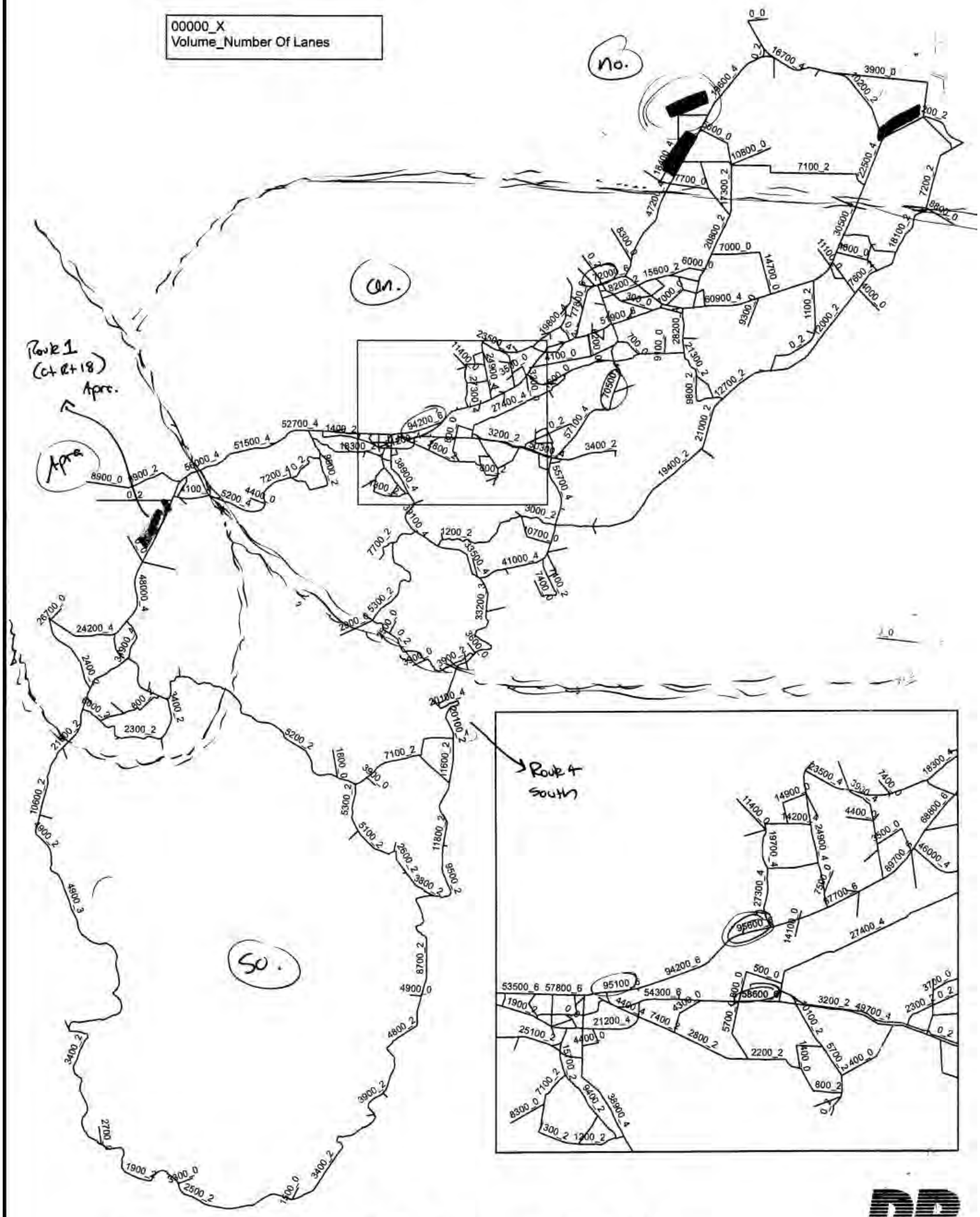
Daily Volumes are based on the 2014C8FisMilMit-run 03/05/09

Guam
2030 Daily Traffic Volumes - No Build



Daily Volumes are based on the 2030BaseFisConMit_assign_network-run10/16/09

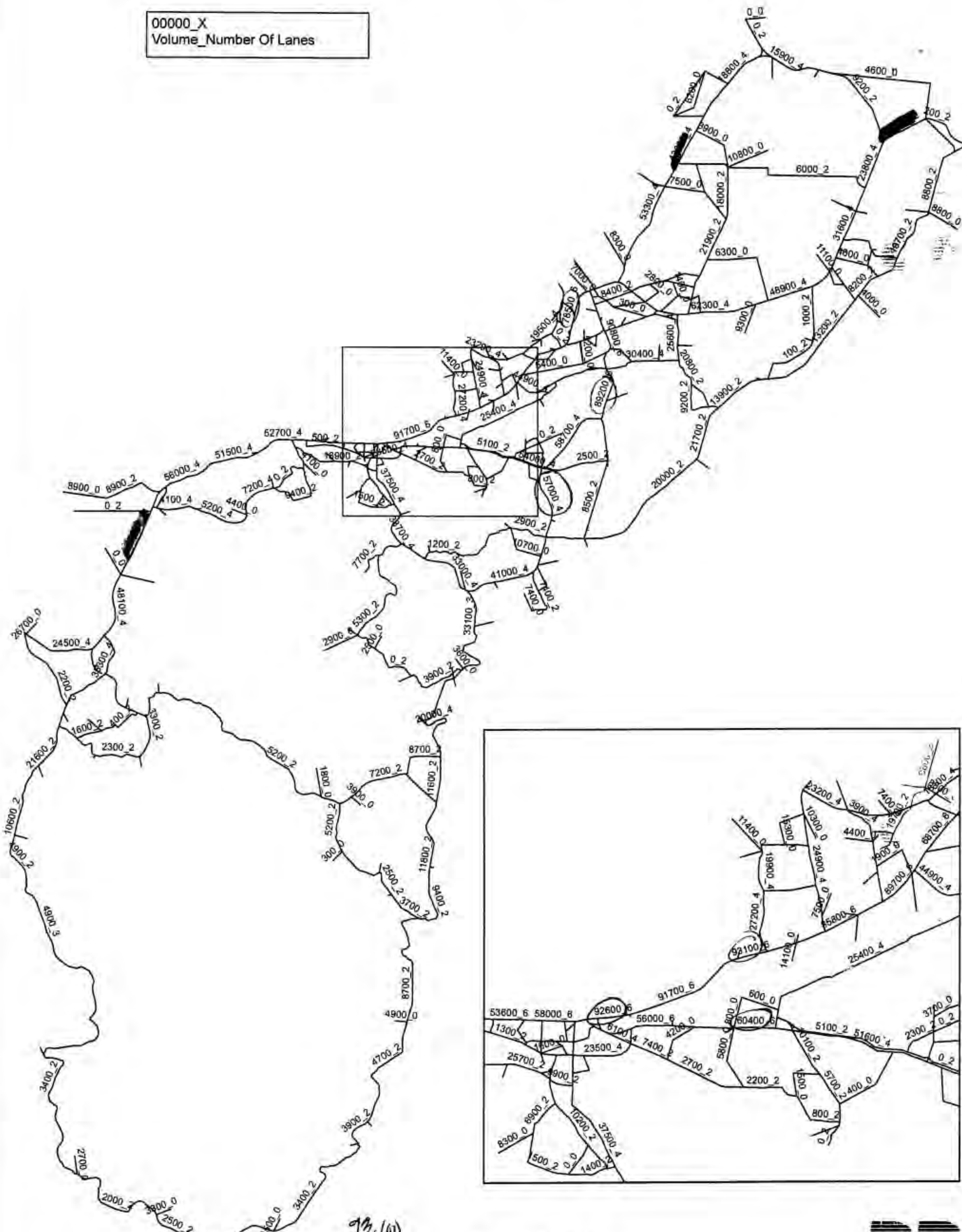
Guam
2030 Daily Traffic Volumes - Option 1 Build



route 1 ~~94,200~~ 95,600 @ 34 77,800
8 58,600
18 ~~55,700~~ 70,50x
34 72,010

Daily Volumes are based on the 2030C1FisMilMit-run 04/14/09

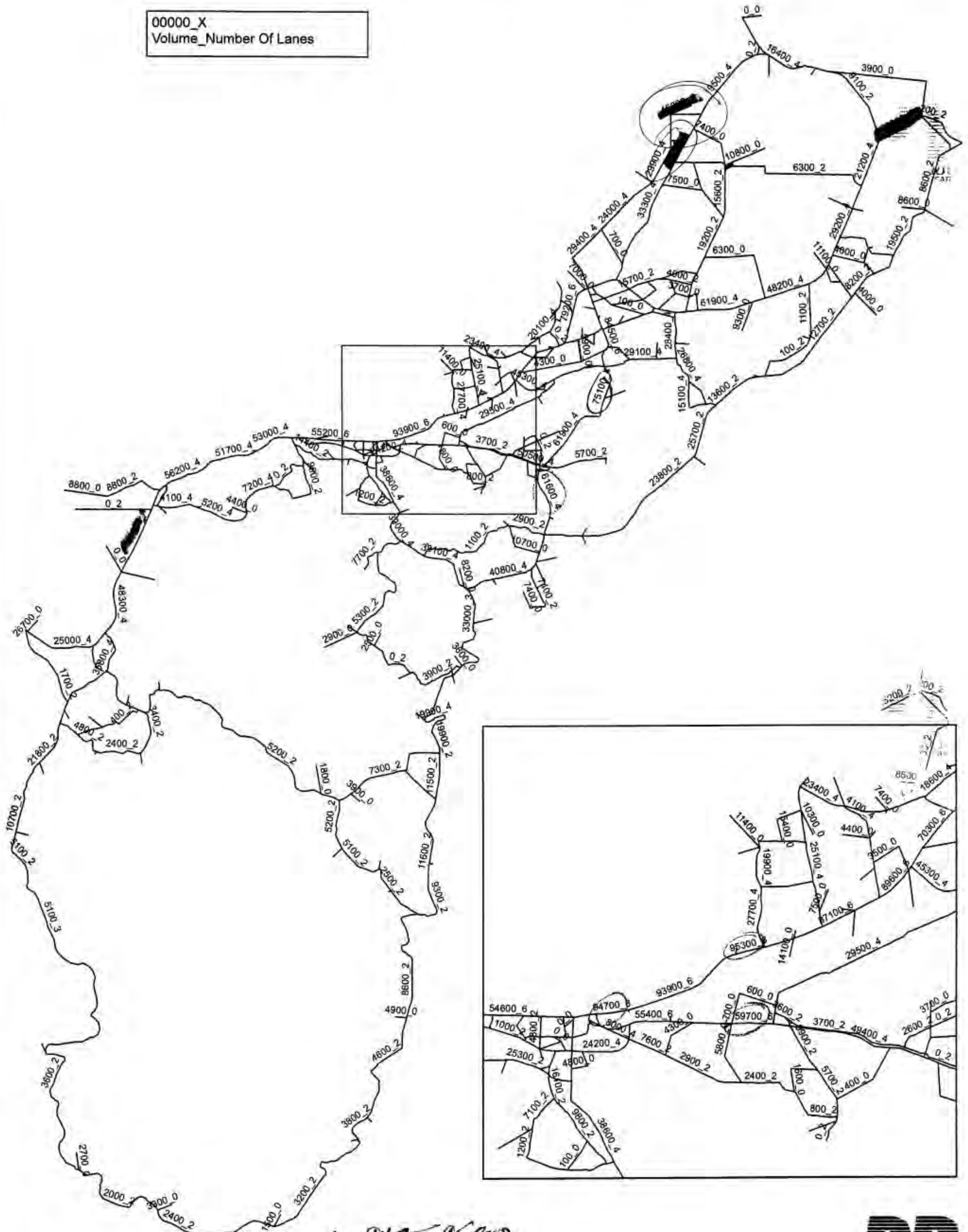
Guam
2030 Daily Traffic Volumes - Option 3 Build



93,100
1 92,600 @ 34 78,500
8 60400
18 57000 29,200
34 7100

Daily Volumes are based on the 2030C3FisMilMit run 03/04/09

Guam
2030 Daily Traffic Volumes - Option 8 Build



1 94.700 95,300
8 57,700
18 64,000 75,100
1© 34 79200

Daily Volumes are based on the 2030C8FisMil26-run 03/24/09

INTERSECTION SCREENING TABLES
OPTIONS 1/2

Screening Analysis Locations – North Region, Options 1/2

Intersection	No-Action						Build					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)	Total Intersection Volume	LOS	Control Delay (seconds per vehicle)
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,485	C	22.5	3,525	D	52.2
Route 1/29	3,675	F	87.6	2,970	E	60.5	3,550	E	65.5	3,400	E	67.7
Route 1/28	**5,700**	**F**	**226.2**	**6,050**	**F**	**157.7**	**6,600**	**F**	**216.8**	**7,050**	**F**	**104.5**
Route 3/3A	875	A	9.5*	880	B	10.1*	910	B	11.6*	2,660	F	79.0*
Route 3/28	1,904	B	17.8	2,070	C	21.4	3,990	C	26.0	4,210	D	36.9
Route 15/29	1,760	F	****	1,575	F	683.5*	1,860	C	27.7	1,830	C	25.4
Route 3/ North (Commercial) Gate**	1,010	N/A	N/A	970	N/A	N/A	2,455	C	29.7	2,855	E	60.4
Route 3/ South (Main) Gate**	1,260	N/A	N/A	1,200	N/A	N/A	3,555	C	27.9	4,295	D	43.8
Route 3/ Control Tree Drive (Residential) Gate	1,300	F	122.3*	2,745	F	74.2*	4,085	C	32.6	4,510	C	20.9
Route 9/ Andersen AFB North Gate**	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	2,035	F	****	2,160	F	****

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Central Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/26	5,910	E	75.8	6,060	F	229.8	6,865	E	75.8	7,295	F	156.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,860	F	137.4	7,605	F	374.3
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	3,925	D	44.4	4,340	E	75.7
Route 1/3	5,055	F	158.4	5,400	F	306.9	4,970	D	48.5	5,845	D	50.6
Route 1/16	5,905	D	52.2	6,410	F	305.5	6,950	E	65.3	7,490	F	87.5
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,900	E	68.0	6,535	F	82.0
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,985	F	112.2	6,790	F	131.5
Route 1/ 10A	6,935	F	82.9	7,055	F	117.2	7,485	F	118.1	7,695	F	102.0
Route 1/ 14B	6,120	E	60.5	6,485	F	91.8	6,485	F	83.9	6,775	E	78.2
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	182.5	8,455	F	275.1
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,825	F	134.7	7,385	F	267.2
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**8,360**	**F**	**97.6**	**8,970**	**F**	**127.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	32.4	8,775	F	140.2

Screening Analysis Locations – Central Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,255	D	40.6	6,240	E	61.8
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,765**	**F**	**607.3**	**5,515**	**F**	**534.1**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,665	F	199.5	4,705	E	65.1
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,810	D	39.6	1,790	E	57.7
Route 4/4A	740	D	27.9*	925	C	21.2*	1,030	E	49.7*	1,790	F	484.3*
Route 7/7A	1,985	F	77.7*	1,745	E	114.5*	1,935	D	29.2*	2,100	F	105.1*
Route 8/33 (East)	3,655	C	31.2	4,680	F	147.3	4,315	D	54.6	4,910	F	81.7
Route 8/10	6,410	F	122.0	6,295	F	116.5	6,435	F	96.9	7,010	F	172.7
Route 10/ 15	5,550	D	49.7	5,585	F	101.1	6,245	F	196.9	6,270	F	152.3
Route 16/ 27A	2,770	C	24.3	3,130	C	26.4	3,050	C	27.4	3,680	C	34.2
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**486.4**	**7,665**	**F**	**345.0**	**7,790**	**F**	**288.7**
Route 16/ 10A	6,178	F	874.2	4,880	F	208.7	5,035	F	123.1	5,725	F	123.5
Route 17/ 4A	720	C	17.0*	760	C	17.9*	700	B	13.6*	790	C	18.7*
Route 26/ 25	3,180	F	270.1	3,495	E	71.7	3,415	C	31.2	3,930	D	41.0

Screening Analysis Locations – Central Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 26/ 15	1,680	F	134.8*	1,790	F	2494.6*	2,015	C	27.9	2,115	C	32.1
Route 28/ 27A	2,920	F	353.1*	2,565	F	437.8*	2,735	D	35.6	2,640	D	36.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	F	458.6*	4,780	C	32.4	5,105	E	79.1
Route 15/ Road 1.16 M east of Route 26 (Second Gate)**	1,040	N/A	N/A	1,010	N/A	N/A	1,320	C	22.1*	1,410	C	22.6*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	F	****	4,765	N/A	N/A	5,150	N/A	N/A
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	N/A	N/A	345	N/A	N/A

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis , as detailed in the EIS.

Screening Analysis Locations – Apra Harbor, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,885	C	20.7	4,080	D	43.5
Route 1/ Polaris Point	3,655	A	4.3	4,680	A	6.2	3,420	A	8.2	3,900	A	7.4
Route 1/2a	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	4,275	E	66.8	4,780	E	57.2

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – South Region, Options 1/2

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 5/ 2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**3,280**	**F**	**96.3**	**3,335**	**C**	**26.2**
Route 5/17	3,655	D	28.9*	4,680	E	47.8*	1,035	F	56.8*	1,105	F	149.6*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	27.8	2,350	C	27.1
Route 5/ Harmon Road	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.
Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

INTERSECTION SCREENING TABLES
OPTION 2 CONSTRAINED

S.NO	INTERSECTION	2030 No Action						2030 Alternative 2 (DAR, Feb 2010)					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		LOS[1]	Delay[2]	Volume	LOS[1]	Delay[2]	Volume	LOS[1]	Delay[2]	Volume	LOS[1]	Delay[2]	Volume
1	ROUTE 1 AND ROUTE 9	B	15.8	1565	B	14.6	1650.0	C	22.5	0	D	52.2	0
2	ROUTE 1 AND ROUTE 29	F	87.6	3675	E	60.5	2970.0	E	65.5	0	E	67.7	0
3	ROUTE 1 AND ROUTE 28	F	226.2	5700	F	157.7	6050.0	F	244.9	6600	F	206.3	7050
4	ROUTE 1 AND ROUTE 26	E	75.8	5910	F	229.8	880.0	E	61.9	6770	F	251.5	7045
5	ROUTE 1 AND ROUTE 27	F	157.2	5950	F	533.7	2070.0	F	304.6	7130	F	1091.6	7135
6	ROUTE 1 AND ROUTE 27A	E	67.2	3195	F	189.5	1575.0	D	42.7	3885	F	211.4	4265
7	ROUTE 1 AND ROUTE 3	F	158.4	5055	F	306.9	970.0	F	145.6	6575	F	157.2	7080
8	ROUTE 1 AND ROUTE 16	D	52.2	5905	F	305.5	1200.0	F	98.6	6870	F	407.5	7225
9	ROUTE 1 AND ROUTE 14 (North San Vitoris)	F	82.8	5455	F	361.2	2745.0	F	113.3	5900	F	476.1	6535
10	ROUTE 1 AND ROUTE 14A	F	124.1	5550	F	259.9	1385.0	F	151.5	6025	F	298.8	6790
11	ROUTE 1 AND ROUTE 10A	F	82.9	6935	F	117.2	6060.0	F	101.7	7475	F	149.4	7695
12	ROUTE 1 AND ROUTE 14B	E	60.5	6120	F	91.8	5875.0	E	79.0	6485	F	119.9	6775
13	ROUTE 1 AND ROUTE 14 (ITC)	F	93.3	6715	F	212.5	3420.0	F	187.0	0	F	275.1	0
14	ROUTE 1 AND ROUTE 30	F	273.9	6355	F	440.9	5400.0	F	270.1	6825	F	489.8	7385
15	ROUTE 1 AND ROUTE 8	F	107.6	7255	F	94.1	6410.0	F	97.6	0	F	123.8	0
16	ROUTE 1 AND ROUTE 4	D	43.4	7535	D	38.6	6165.0	C	32.4	0	F	140.2	0
17	ROUTE 1 AND ROUTE 6 (Adelup)	C	24.1	3770	F	91.7	6170.0	D	41.5	0	F	125.3	0
18	ROUTE 1 AND ROUTE 11	B	18.8	3460	C	26.8	7055.0	C	20.7	0	C	25.3	0
19	ROUTE 1 AND ROUTE 6 (Westerly)	A	7.8	3080	B	15.6	6485.0	B	18.4	0	C	22.0	0
20	ROUTE 1 AND POLARIS POINT	A	4.3	3655	A	6.2	7705.0	A	7.1	0	A	7.4	0
21	ROUTE 1 AND ROUTE 2A	E	58.8	3790	E	55.5	6975.0	E	69.5	4275	F	84.0	4780
22	ROUTE 5 AND ROUTE 2A	D	53.0	2885	C	22.7	7915.0	F	96.3	0	C	26.2	0
23	ROUTE 5 AND ROUTE 17	D	28.9*	3655	E	47.8*	7470.0	E	46.6*	0	F	149.6*	0
24	ROUTE 2 AND ROUTE 12	F	83.1	2245	C	25.4	5125.0	F	114.2	2380	C	33.6	2350

INTERSECTION SCREENING TABLES
OPTION 2 CONSTRAINED

S.NO	INTERSECTION	2030 No Action						2030 Alternative 2 (DAR, Feb 2010)					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		LOS[1]	Delay[2]	Volume	LOS[1]	Delay[2]	Volume	LOS[1]	Delay[2]	Volume	LOS[1]	Delay[2]	Volume
25	ROUTE 3 AND ROUTE 3A	A	9.5*	#N/A	B	10.1*	3430.0	B	11.6*	0	F	79.0*	0
26	ROUTE 3 AND ROUTE 28	B	17.8	#N/A	C	21.4	4855.0	C	33.9	3675	F	226.5	3860
27	ROUTE 4 AND ROUTE 7A	F	298.8	5040	F	196.9	4365.0	F	244.4	0	F	286.4	0
28	ROUTE 4 AND ROUTE 10	F	95.5	4305	F	115.9	1700.0	F	199.6	0	F	103.5	0
29	ROUTE 4 AND ROUTE 17	D	46.6	1775	D	48.2	925.0	D	39.6	0	E	61.9	0
30	ROUTE 4 AND ROUTE 4A	D	27.9*	740	C	21.2*	1745.0	D	34.4*	0	C	19.4*	0
31	ROUTE 7 AND ROUTE 7A	F	77.7*	1985	E	114.5*	4680.0	D	29.2*	0	F	105.1*	0
32	ROUTE 8 AND ROUTE 33	C	31.2	3655	F	147.3	6295.0	D	48.3	4315	F	162.0	4910
33	ROUTE 8 AND ROUTE 10	F	122.0	6410	F	116.5	5585.0	F	96.9	0	F	172.7	0
34	ROUTE 10 AND ROUTE 15	D	49.7	5550	F	101.1	3130.0	F	196.9	0	F	152.3	0
35	ROUTE 15 AND ROUTE 29	F	Error	2770	F	683.5*	6970.0	F	Error*	1860	F	Error*	1830
36	ROUTE 16 AND ROUTE 27A	C	24.3	6590	C	26.4	4880.0	C	27.4	0	C	34.2	0
37	ROUTE 16 AND ROUTE 27	F	275.1	6178	F	486.4	760.0	F	442.7	8495	F	764.2	8530
38	ROUTE 16 AND ROUTE 10A	F	874.2	720	F	208.7	3495.0	F	469.1	0	F	123.5	0
39	ROUTE 17 AND ROUTE 4A	C	17.0*	3180	C	17.9*	1790.0	B	13.6*	0	C	18.7*	0
40	ROUTE 26 AND ROUTE 25	F	270.1	1680	E	71.7	2565.0	E	75.3	2720	D	53.0	3065
41	ROUTE 26 AND ROUTE 15	F	134.8*	2920	F	2494.6*	3650.0	F	2757.5*	2015	F	3327.3*	2115
42	ROUTE 28 AND ROUTE 27A	F	353.1*	1040.0	F	437.8*	1010.0	F	320.4*	2735	F	441.4*	2915
				4535.0			4960.0			0			0
	Access Points - NCTS Finegayan			1385.0			1625.0			0			0
1	ROUTE 3 AND NORTH (COMMERCIAL) GATE**	N/A	N/A	3460.0	N/A	N/A	3615.0	B	29.7	0	E	60.2	0
2	ROUTE 3 AND SOUTH (MAIN) GATE**	N/A	N/A	3655.0	N/A	N/A	4680.0	C	23.1	0	E	67.2	0
				3790.0			4250.0			0			0
	Access Points - South Finegayan			2885.0			3115.0			0			0
3	ROUTE 3/CONTROL TREE DRIVE (RESIDENTIAL) GATE	F	122.3*	3655.0	F	74.2*	4680.0	C	32.7	0	C	26.5	0
				2245.0			2200.0			0			0
	Access Points - AAFB			347.0			347.0			0			0
										0			0
5	ROUTE 9/AAFB NORTH GATE**	E	39.5*		D	35.1*		F	1029.7*	0	F	9999.0*	0
										0			0
	Access Points - South Anderson									0			0
6	ROUTE 1/TURNER STREET (MAIN GATE)	B	13.5*		F	458.6*		C	32.4	0	E	78.8	0
7	ROUTE 15/ ROAD 1.16 m e/o ROUTE 26 (SECOND GATE)**	N/A	N/A		N/A	N/A		C	22.1*	0	C	22.6*	0
										0			0
	Navy Barrigada									0			0
8	ROUTE 16 AND SABANA BARRIGADA	F	Error*		F	Error*		N/A	N/A	0	N/A	N/A	0
9	ROUTE 8A/BARRIGADA CONNECTOR**	N/A	N/A		N/A	N/A		N/A	N/A	0	N/A	N/A	0
										0			0
	Barrigada AF									0			0
10	ROUTE 15 AND CHADA STREET	E	50.0*		E	44.4*		N/A	N/A	0	N/A	N/A	0
										0			0
	Naval Ordinance Annex									0			0
11	ROUTE 5 AND HARMON ROAD	A	9.7*		A	9.8*		A	9.6*	0	A	10.6*	0
										0			0

[1]Level of Service [2]Control Delay in Seconds Per Vehicle

NOTES: Signalized Intersection LOS based on average delay for the overall intersection

*Unsignalized intersection LOS based on approach delay on STOP-controlled approach

**The intersections have not built in existing condition

Error = Delay excedeed maximum calculated value

Source: Parsons Brinckerhoff

INTERSECTION SCREENING TABLES
OPTION 3

Screening Analysis Locations – North Region Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,540	C	24.4	3,525	D	53.0
Route 1/29	3,675	F	87.6	2,970	E	60.5	4,025	F	85.3	3,895	F	90.5
Route 1/28	5,700	F	226.2	6,050	F	157.7	6,885	F	198.5	7,390	F	139.5
Route 3/3A	875	A	9.5*	880	B	10.1*	2,225	E	47.2*	2,340	F	100.7*
Route 3/28	1,904	B	17.8	2,070	C	21.4	5,680	F	90.2	6,025	D	53.9
Route 15/ 29*	1,760	F	****	1,575	F	683.5*	1,945	F	161.4	1,985	C	26.2
Route 3/ North (Commercial) Gate	1,010	N/A	N/A	970	N/A	N/A	3,935	D	39.8	3,375	D	46.0
Route 3/ South (Main) Gate	1,260	N/A	N/A	1,200	N/A	N/A	5,945	D	44.5	6,275	F	370.1
Route 3/ Control Tree Drive (Residential) Gate	1,300	F	122.3*	2,745	F	74.2*	5,525	F	113.3	5,680	D	46.3
Route 9/ Andersen AFB North Gate	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	**2,035**	**F**	**1031.0***	**2,160**	**F**	**9051.1***

Screening Analysis Locations – North Region Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Central Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/26	5,910	E	75.8	6,060	F	229.8	7,120	F	89.4	7,615	F	209.1
Route 1/27	5,950	F	157.2	5,875	F	533.7	6,705	F	151.1	7,625	F	399.6
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	4,160	F	120.2	4,435	F	157.1
Route 1/3	5,055	F	158.4	5,400	F	306.9	7,815	F	341.3	8,030	F	474.4
Route 1/16	5,905	D	52.2	6,410	F	305.5	8,270	F	232.2	8,540	F	340.3
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,775	E	66.6	6,355	E	71.5
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,860	E	71.0	6,435	F	112.3
Route 1/ 10A	6,935	F	82.9	7,055	F	117.2	7,515	F	129.6	8,170	F	193.6

Screening Analysis Locations – Central Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/ 14B	6,120	E	60.5	6,485	F	91.8	6,480	E	79.8	6,965	E	78.5
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,355	F	176.8	8,635	F	315.8
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,795	F	148.5	7,475	F	253.3
Route 1/8	**7,255**	**F**	**107.6**	**7,915**	**F**	**94.1**	**7,835**	**F**	**102.7**	**8,965**	**F**	**155.5**
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,565	C	30.5	7,440	F	107.2
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,265	C	29.7	7,850	F	958.7
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,945	C	27.4	3,910	C	23.0
Route 4/ 7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,830**	**F**	**586.7**	**5,240**	**F**	**339.2**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,705	F	199.7	4,700	E	65.9
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,785	D	39.6	1,785	E	55.9
Route 4/ 4A*	740	D	27.9*	925	C	21.2*	1,005	E	44.3*	960	C	21.9*
Route 7/ 7A*	1,985	F	77.7*	1,745	D	28.3*	1,920	D	28.3*	2,085	F	87.7*
Route 8/33 (East)	3,655	C	31.2	4,680	E	64.3	4,335	D	52.9	2,250	C	29.1
Route 8/10	6,410	F	122.0	6,295	F	265.3	6,495	F	137.9	7,090	F	171.9
Route 10/ 15	5,550	D	49.7	5,585	F	197.9	6,230	F	197.9	6,245	F	147.2
Route 16/ 27A	2,770	C	24.3	3,130	F	99.9	4,905	D	44.9	5,405	F	80.6

Screening Analysis Locations – Central Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**587.3**	**9,380**	**F**	**455.3**	**9,825**	**F**	**470.0**
Route 16/ 10A	6,178	F	874.2	4,880	F	459.9	5,570	F	210.3	7,710	F	524.0
Route 17/ 4A*	720	C	17.0*	760	C	16.5*	710	C	16.5*	785	C	18.5*
Route 26/ 25*	3,180	F	270.1	3,495	F	369.5	4,125	F	85.4	4,365	E	62.3
Route 26/ 15	1,680	F	134.8*	1,790	F	3450.7*	2,235	C	30.2	2,375	C	25.4
Route 28/ 27A	2,920	F	353.1*	2,565	F	528.0*	3,075	D	41.4	3,390	E	65.2
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	C	32.4	4,780	C	32.4	5,105	E	79.5
Route 15/ Road 1.16 M east of Route 26 (Second Gate)	1,040	N/A	N/A	1,010	C	22.1*	1,320	C	22.1*	1,410	C	21.1*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	D	48.1	7,230	D	48.1	7,740	F	94.2
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,795	E	73.5	2,125	F	209.1

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Apra Harbor Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,710	B	18.4	4,080	D	40.1
Route 1/ Polaris Pt	3,655	A	4.3	4,680	A	6.2	3,530	A	5.8	3,900	A	7.4
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	**4,270**	**E**	**67.5**	**4,755**	**D**	**54.1**

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – South Region, Option 3

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 5/2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**2,960**	**E**	**55.1**	**3,235**	**C**	**22.8**
Route 5/17*	3,655	D	28.9*	4,680	E	47.8*	1,045	E	42.5*	1,080	F	128.5*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,385	C	30.6	2,355	C	24.9
Route 5/ Harmon Road*	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

INTERSECTION SCREENING TABLES
OPTION 8

Screening Analysis Locations – North Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/9	1,565	B	15.8	1,650	B	14.6	2,540	C	24.4	3,525	D	53.0
Route 1/29	3,675	F	87.6	2,970	E	60.5	4,025	F	85.3	3,895	F	90.5
Route 1/28	**5,700**	**F**	**226.2**	**6,050**	**F**	**157.7**	**6,885**	**F**	**198.5**	**7,390**	**F**	**139.5**
Route 3/3A	875	A	9.5*	880	B	10.1*	2,020	D	27.0*	2,550	F	140.7*
Route 3/28	1,904	B	17.8	2,070	C	21.4	4,635	C	33.2	4,595	D	47.5
Route 15/29*	1,760	F	****	1,575	F	683.5*	1,915	C	32.9	1,880	C	30.0
Route 3/ North (Commercial) Gate	1,010	N/A	N/A	970	N/A	N/A	3,310	D	38.2	3,090	E	56.6
Route 3/ South (Main) Gate	1,260	N/A	N/A	1,200	N/A	N/A	5,085	D	46.3	4,950	F	81.7
Route 3/ Control Tree Drive (Residential) Gate	1,300	F	122.3*	2,745	F	74.2*	4,525	D	39.7	4,750	C	22.6
Route 9/ Andersen AFB North Gate	**1,480**	**E**	**39.5***	**1,385**	**D**	**35.1***	**2,035**	**C**	**24.4**	**2,160**	**F**	********

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Central Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/26	5,910	E	75.8	6,060	F	229.8	7,845	F	145.9	8,010	F	250.6
Route 1/27	5,950	F	157.2	5,875	F	533.7	7,640	F	178.8	7,540	F	329.4
Route 1/ 27A	3,195	E	67.2	3,420	F	189.5	4,775	D	53.9	4,900	D	51.2
Route 1/3	5,055	F	158.4	5,400	F	306.9	5,455	E	70.5	6,335	E	64.7
Route 1/16	5,905	D	52.2	6,410	F	305.5	7,070	E	57.0	7,785	F	103.9
Route 1/14 (Upper Tumon)	5,455	F	82.8	6,165	F	361.2	5,855	E	69.6	6,465	E	77.6
Route 1/ 14A (Opposite K-Mart)	5,550	F	124.1	6,170	F	259.9	5,860	E	74.2	6,460	F	126.0
Route 1/10A	6,935	F	82.9	7,055	F	117.2	7,565	F	126.1	8,340	F	186.0
Route 1/14B	6,120	E	60.5	6,485	F	91.8	6,545	F	90.4	7,160	E	79.5
Route 1/14	6,715	F	93.3	7,705	F	212.5	7,430	F	113.6	8,830	F	267.2
Route 1/30	6,355	F	273.9	6,975	F	440.9	6,915	F	146.3	7,715	F	285.3
Route 1/8	7,255	F	107.6	7,915	F	94.1	8,060	E	77.8	9,545	F	150.4
Route 1/4	7,535	D	43.4	7,470	D	38.6	6,665	C	33.6	7,605	D	35.5

Screening Analysis Locations – Central Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/6 (Adelup)	3,770	C	24.1	5,125	F	91.7	4,245	D	38.1	4,835	D	44.9
Route 1/6 (Westerly)	3,080	A	7.8	3,430	B	15.6	3,510	B	18.4	3,905	C	22.0
Route 4/7A	**5,040**	**F**	**298.8**	**4,855**	**F**	**196.9**	**4,915**	**F**	**372.9**	**5,680**	**F**	**654.2**
Route 4/10	4,305	F	95.5	4,365	F	115.9	4,655	F	198.7	4,695	E	71.0
Route 4/17	1,775	D	46.6	1,700	D	48.2	1,790	D	40.1	1,775	E	56.2
Route 4/ 4A*	740	D	27.9*	925	C	21.2*	1,020	E	47.4*	950	C	24.0*
Route 7/ 7A*	1,985	F	77.7*	1,745	D	28.3*	2,325	F	174.7*	2,520	F	300.8*
Route 8/33 (East)	3,655	C	31.2	4,680	E	64.3	4,220	D	45.5	4,820	E	77.8
Route 8/10	6,410	F	122.0	6,295	F	265.3	6,890	F	177.3	7,530	F	218.4
Route 10/ 15	5,550	D	49.7	5,585	F	197.9	6,170	F	197.9	6,500	F	178.1
Route 16/ 27A	2,770	C	24.3	3,130	F	99.9	3,490	C	31.4	4,120	D	35.5
Route 16/ 27	**6,590**	**F**	**275.1**	**6,970**	**F**	**587.3**	**8,105**	**F**	**361.1**	**8,470**	**F**	**336.6**
Route 16/ 10A	6,178	F	874.2	4,880	F	459.9	7,085	F	582.9	7,655	F	488.7
Route 17/ 4A*	720	C	17.0*	760	C	16.5*	695	C	16.1*	785	C	18.6*

Screening Analysis Locations – Central Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 26/ 25*	3,180	F	270.1	3,495	F	369.5	5,045	F	113.1	5,045	F	119.3
Route 26/ 15	1,680	F	134.8*	1,790	F	3450.7*	3,215	F	154.9	3,155	F	168.2
Route 28/ 27A	2,920	F	353.1*	2,565	F	528.0*	2,765	C	31.3	3,010	E	59.6
Route 1/ Turner Street (Main Gate)	3,375	B	13.5*	3,650	C	32.4	4,780	C	32.4	5,105	E	78.8
Route 15/ Road 1.16 M east of Route 26 (Second Gate)	1,040	N/A	N/A	1,010	C	22.1*	1,320	C	22.1*	1,410	C	22.6*
Route 16/ Sabana Barrigada	4,535	F	****	4,960	D	48.1	4,765	N/A	N/A	5,830	N/A	N/A
Route 15/ Fadian Point Drive	1,385	E	50.0*	1,625	E	44.4*	1,560	N/A	N/A	2,350	N/A	N/A

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – Apra Harbor Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 1/11	3,460	B	18.8	3,615	C	26.8	3,695	B	14.3	4,165	D	43.3
Route 1/ Polaris Pt	3,655	A	4.3	4,680	A	6.2	3,605	A	6.8	3,910	A	7.5
Route 1/2A	**3,790**	**E**	**58.8**	**4,250**	**E**	**55.5**	**4,285**	**E**	**67.5**	**4,785**	**E**	**57.5**

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

Screening Analysis Locations – South Region, Option 8

Intersection	*No-Action*						*Build*					
	AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
	Total Intersection Volume	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*	*Total Intersection Volume*	*LOS*	*Control Delay (seconds per vehicle)*
Route 5/ 2A	**2,885**	**D**	**53.0**	**3,115**	**C**	**22.7**	**3,115**	**E**	**79.9**	**3,335**	**C**	**25.9**
Route 5/ 17*	3,655	D	28.9*	4,680	E	47.8*	1,040	B	14.8*	1,100	E	42.4*
Route 2/12	2,245	F	83.1	2,200	C	25.4	2,380	C	30.7	2,355	C	27.0
Route 5/ Harmon Road*	347	A	9.7*	347	A	9.8*	385	A	9.5*	520	A	10.6*

Notes: * Unsignalized intersection; UA = Unavailable at time of analysis; **** = Delay exceeded maximum calculated value
Indicates sites that failed the screening evaluation.

Indicates site chosen for detailed CO microscale analysis, as detailed in the EIS.

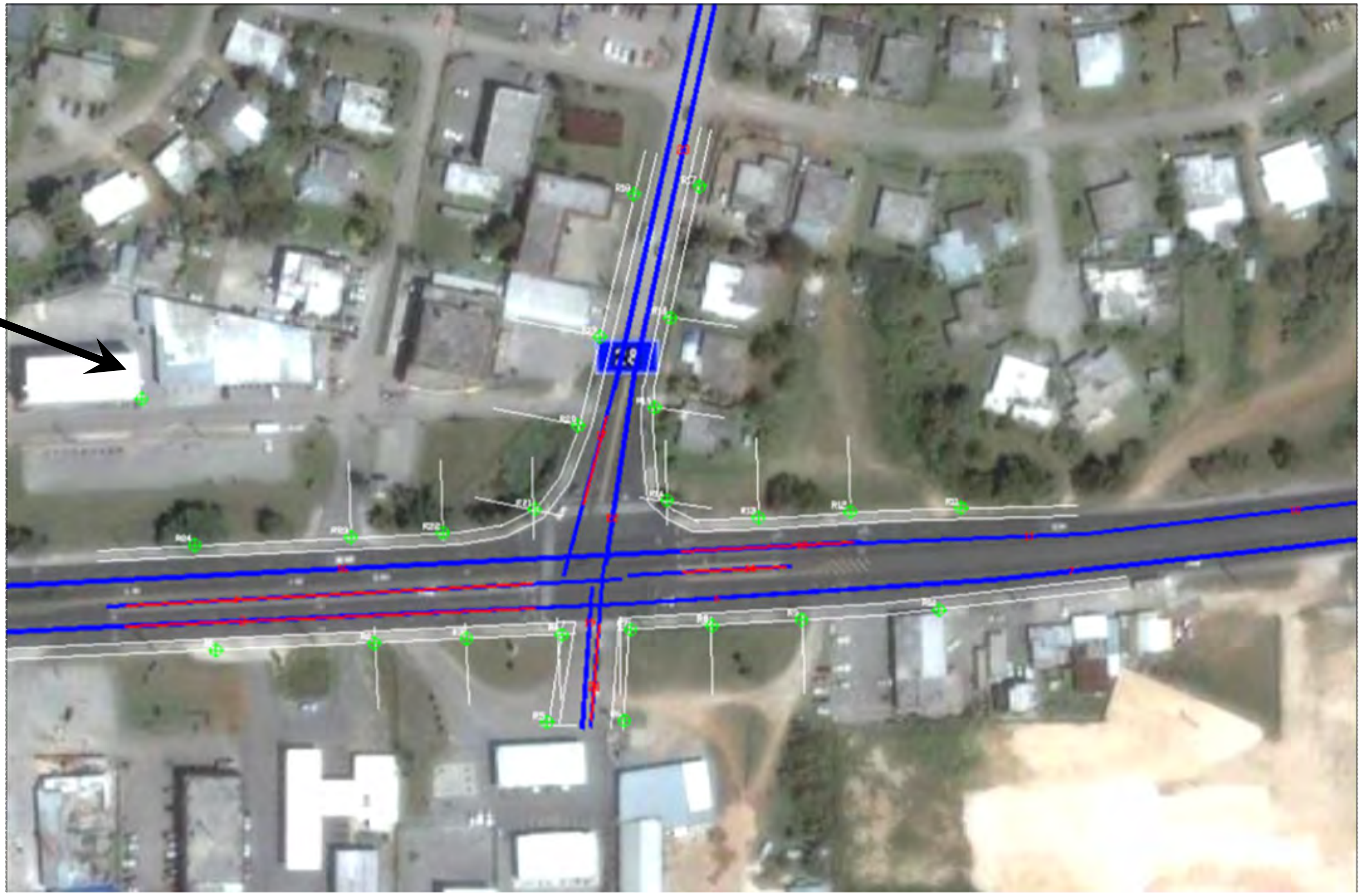
Appendix B
Analysis Sites and Receptor Locations

GUAM ANALYSIS SITES

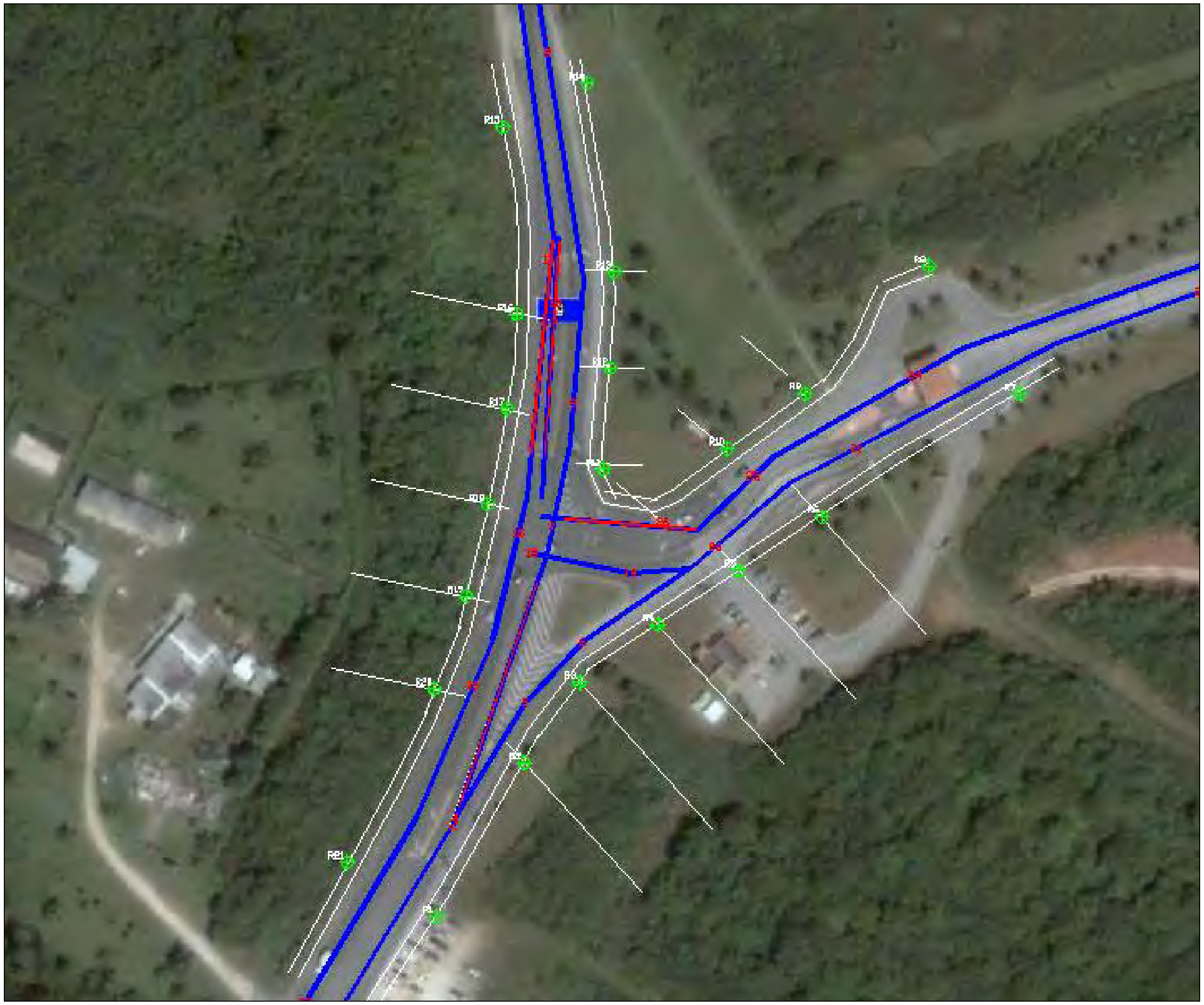
(receptors are green circles)

Site 1 (Existing) – Route 1 and Route 28

Family Baptist Church



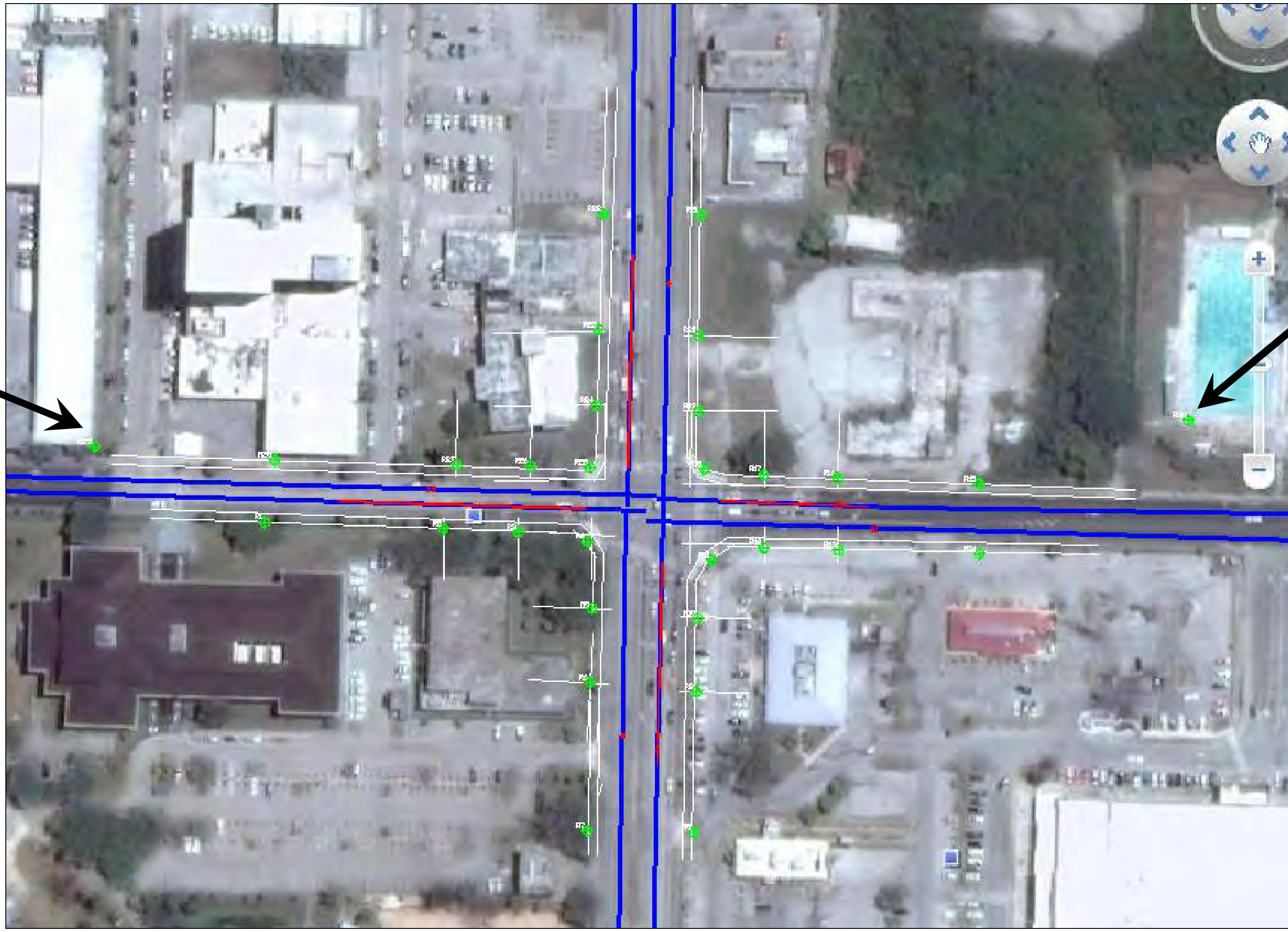
Site 2 (Existing) – Route 9 and AAFB



Site 3 (Existing) – Route 1 and Route 8

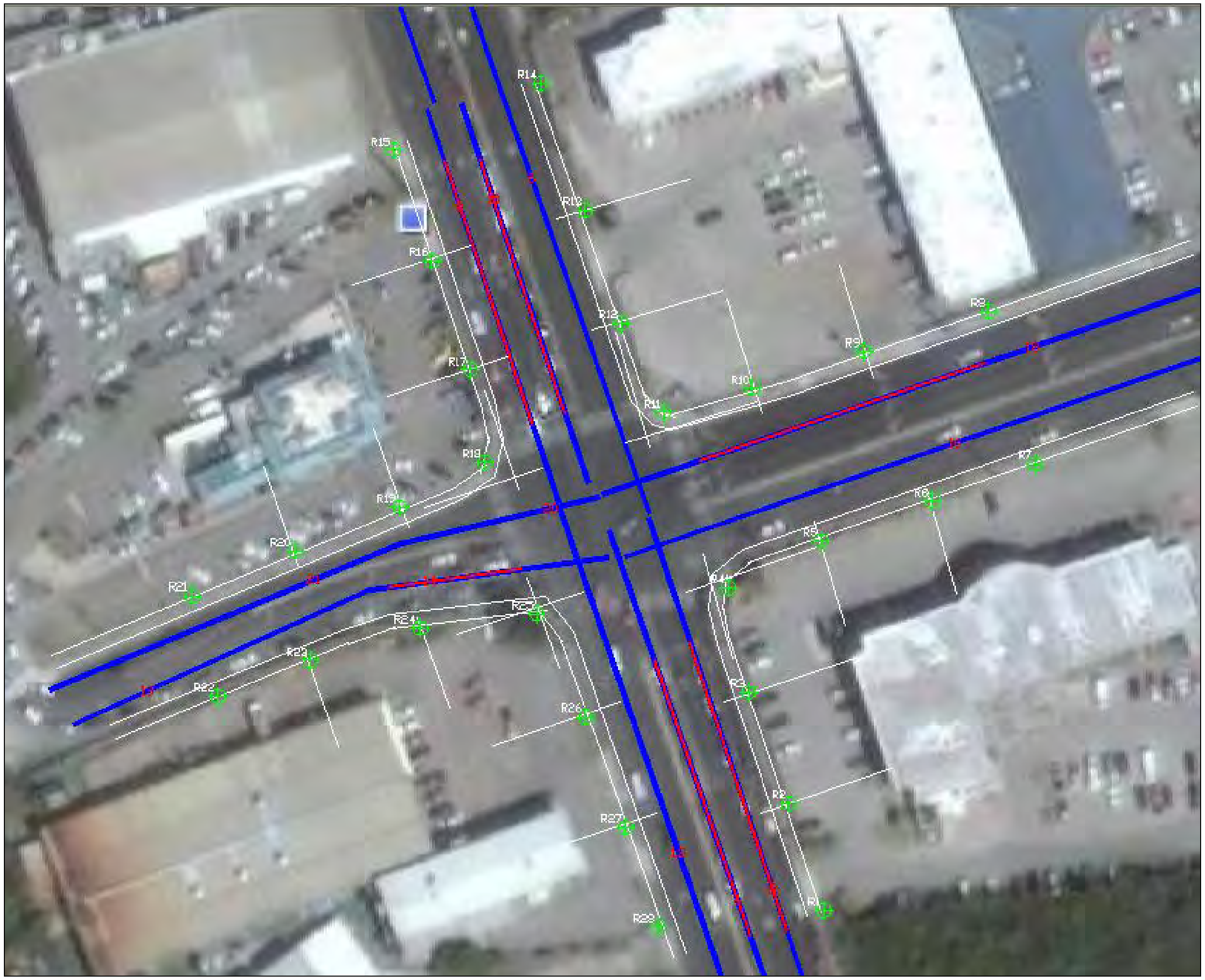
Site 4 (Existing) – Route 4 and Route 7A

Academy of Our Lady of Guam

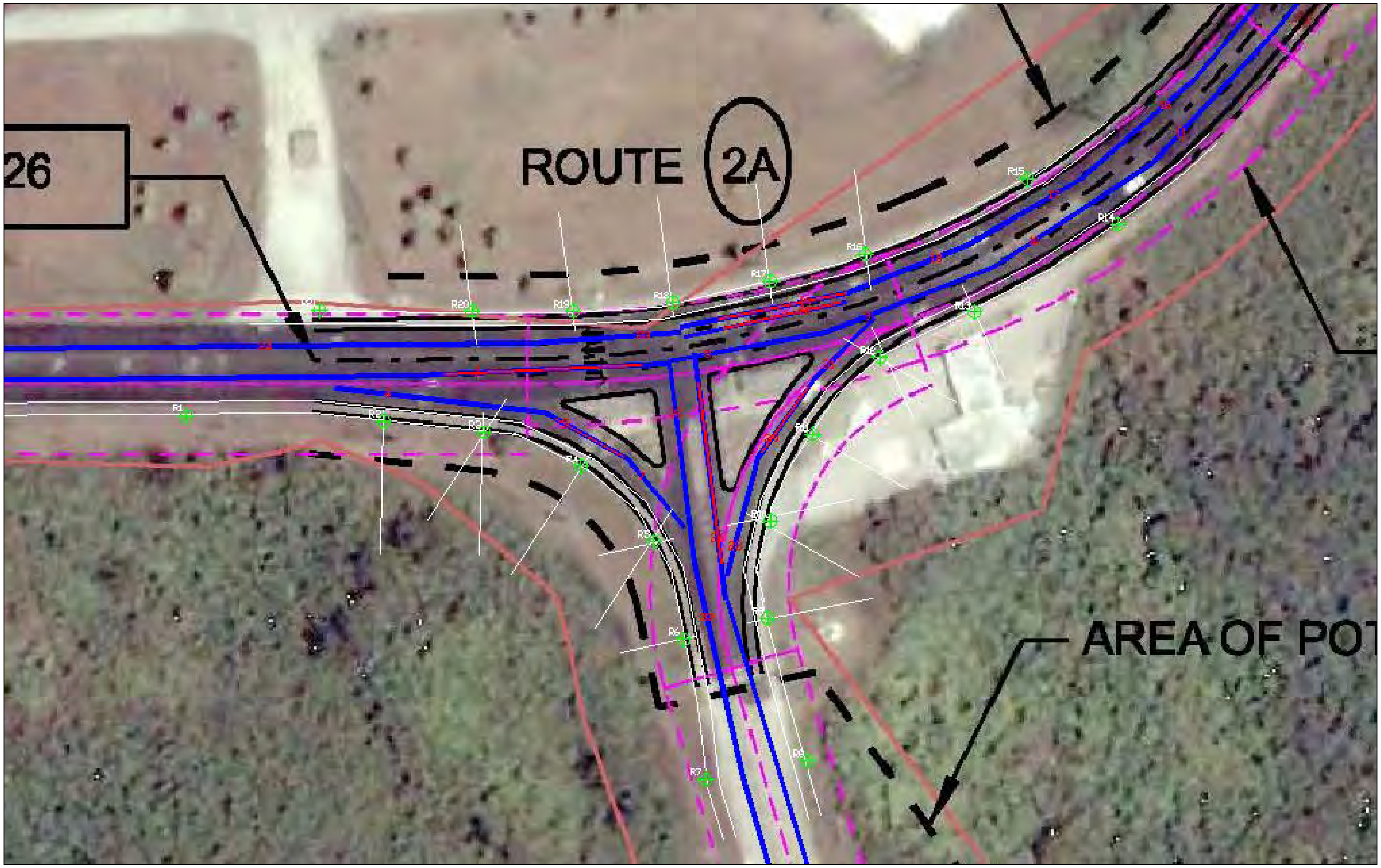


Hagatna Pool

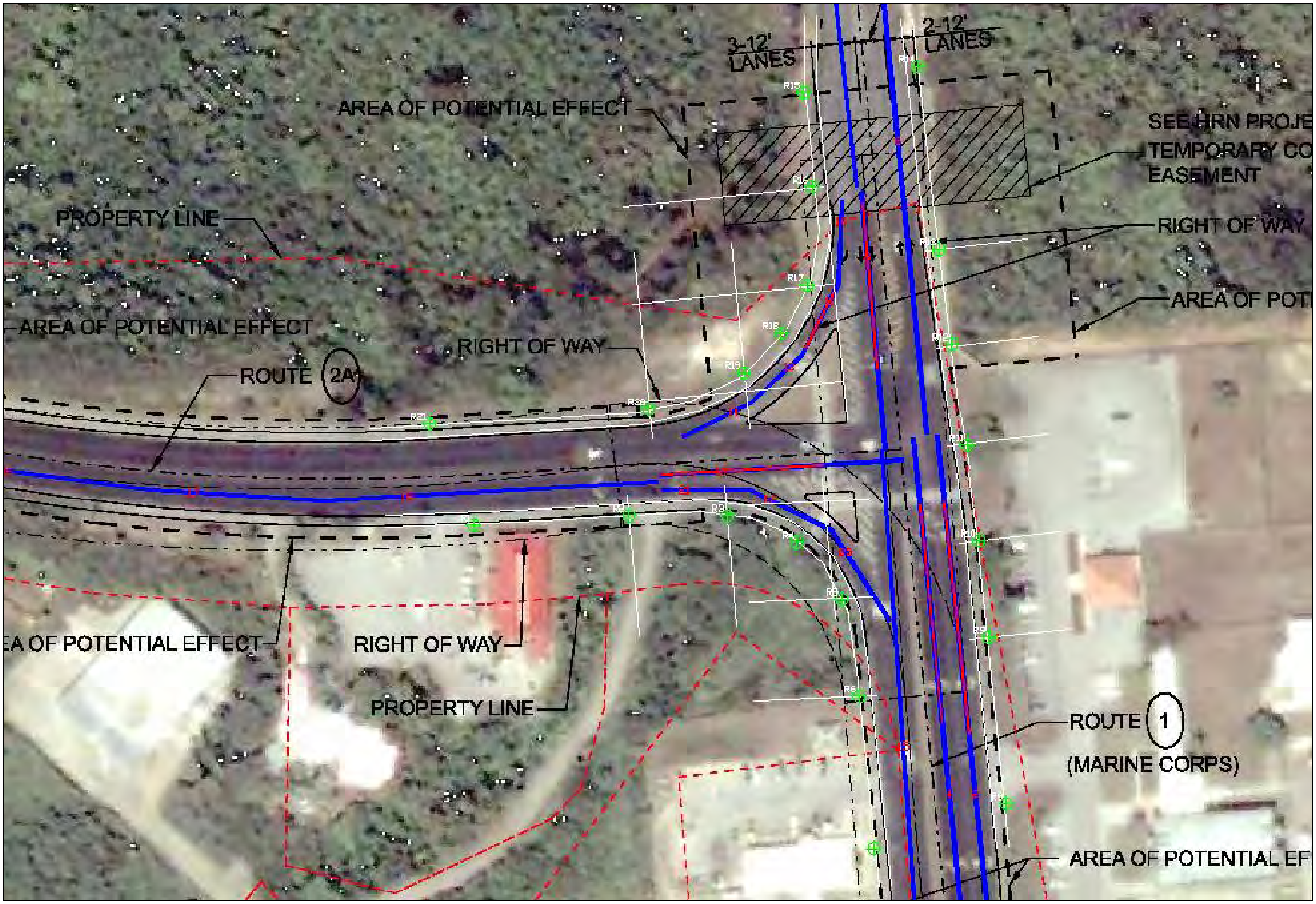
Site 5 (Existing) – Route 16 and Route 27



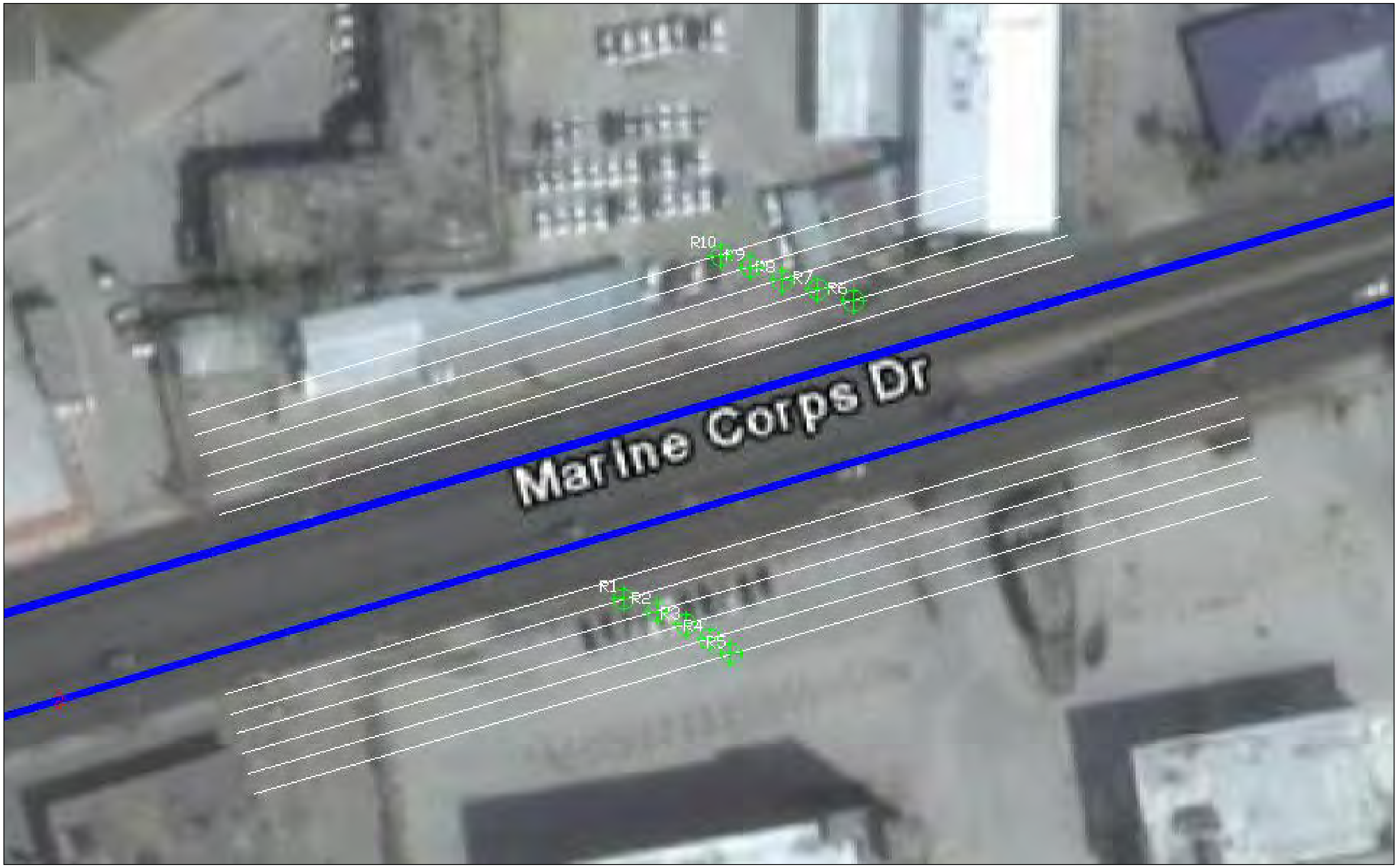
Site 6 (Existing) – Route 5 and Route 2A



Site 7 (Existing) – Route 1 and Route 2A



Site 8 (Existing) – Route 1 west of Route 30



Appendix C
Detailed Results
and Sample Data Runs

Table C-1
Estimated Cancer Risk at Sidewalk Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8		Option 2 Constrained	
	dCR	dCR		dCR		dCR		dCR		dCR	
		2014	2030	2014	2030	2014	2030	2014	2030	2014	2030
Site 1	1.07E-05	7.43E-06	5.42E-06	9.02E-06	6.42E-06	9.78E-06	6.31E-06	9.93E-06	5.74E-06	8.57E-06	5.92E-06
Site 2	6.05E-07	1.36E-06	1.33E-06	2.33E-06	1.58E-06	2.33E-06	1.59E-06	2.32E-06	1.59E-06	2.35E-06	1.58E-06
Site 3	8.68E-06	6.97E-06	5.04E-06	8.61E-06	5.82E-06	1.05E-05	6.05E-06	1.05E-05	6.35E-06	9.56E-06	6.25E-06
Site 4	1.04E-05	4.95E-06	4.41E-06	6.17E-06	4.32E-06	6.20E-06	4.26E-06	5.58E-06	4.33E-06	6.52E-06	4.86E-06
Site 5	1.41E-05	8.68E-06	6.71E-06	1.16E-05	8.69E-06	1.30E-05	8.83E-06	1.24E-05	1.01E-05	1.03E-05	7.40E-06
Site 6	3.86E-06	3.08E-06	2.39E-06	3.54E-06	2.47E-06	3.47E-06	2.39E-06	3.58E-06	2.48E-06	3.54E-06	2.47E-06
Site 7	5.73E-06	6.43E-06	3.38E-06	5.61E-06	3.32E-06	5.55E-06	3.32E-06	5.61E-06	3.33E-06	5.61E-06	3.32E-06
Site 8	1.29E-06	1.22E-06	1.01E-06	1.48E-06	1.07E-06	1.46E-06	1.05E-06	1.50E-06	1.06E-06	1.48E-06	1.07E-06

Table C-2
Estimated Cancer Risk at Actual Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8		Option 2 Constrained	
	dCR	dCR		dCR		dCR		dCR		dCR	
		2014	2030	2014	2030	2014	2030	2014	2030	2014	2030
Site 1	2.49E-06	1.97E-06	1.43E-06	2.37E-06	1.46E-06	2.43E-06	1.52E-06	2.35E-06	1.54E-06	2.26E-06	1.56E-06
Site 4	5.34E-06	1.99E-06	1.65E-06	2.65E-06	1.65E-06	3.48E-06	2.30E-06	3.73E-06	2.45E-06	2.79E-06	1.92E-06

Table C-3
Estimated Non-Cancer Chronic Hazard Index at Sidewalk Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8		Option 2 Constrained	
	HQ	HQ		HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030	2014	2030
Site 1	1.22	0.87	0.65	1.06	0.77	1.14	0.75	1.15	0.70	1.02	0.71
Site 2	0.08	0.23	0.23	0.40	0.30	0.40	0.30	0.40	0.30	0.40	0.30
Site 3	1.06	0.83	0.62	1.02	0.72	1.21	0.72	1.21	0.75	1.10	0.74
Site 4	1.19	0.10	0.52	0.72	0.51	0.72	0.51	0.65	0.51	0.75	0.52
Site 5	1.59	1.01	0.80	1.33	0.99	1.46	1.01	1.43	1.09	1.21	0.89
Site 6	0.47	0.36	0.28	0.42	0.30	0.41	0.29	0.42	0.30	0.42	0.30
Site 7	0.68	0.74	0.40	0.65	0.40	0.65	0.40	0.65	0.40	0.65	0.40
Site 8	0.17	0.16	0.13	0.19	0.14	0.19	0.14	0.19	0.14	0.19	0.14

Table C-4
Estimated Non-Cancer Chronic Hazard Index at Actual Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8		Option 2 Constrained	
	HQ	HQ		HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030	2014	2030
Site 1	0.30	0.23	0.18	0.28	0.18	0.29	0.19	0.28	0.19	0.27	0.19
Site 4	0.63	0.25	0.21	0.33	0.21	0.42	0.28	0.45	0.30	0.35	0.22

Table C-5
Estimated Non-Cancer Acute Hazard Index at Sidewalk Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8		Option 2 Constrained	
	HQ	HQ		HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030	2014	2030
Site 1	1.20	0.85	0.64	1.04	0.76	1.12	0.74	1.13	0.69	1.01	0.70
Site 2	0.08	0.24	0.24	0.42	0.31	0.42	0.31	0.42	0.31	0.42	0.31
Site 3	1.04	0.82	0.62	1.01	0.71	1.19	0.71	1.19	0.74	1.08	0.73
Site 4	1.16	0.04	0.51	0.71	0.51	0.71	0.50	0.64	0.51	0.74	0.51
Site 5	1.56	0.99	0.79	1.31	0.98	1.44	1.00	1.41	1.08	1.20	0.88
Site 6	0.46	0.36	0.28	0.41	0.29	0.40	0.28	0.41	0.29	0.41	0.29
Site 7	0.67	0.72	0.40	0.64	0.40	0.64	0.40	0.64	0.40	0.64	0.40
Site 8	0.17	0.16	0.13	0.19	0.14	0.19	0.14	0.19	0.14	0.19	0.14

Table C-6
Estimated Non-Cancer Acute Hazard Index at Actual Receptors

Site No.	Existing	No Build		Option 1/2		Option 3		Option 8		Option 2 Constrained	
	HQ	HQ		HQ		HQ		HQ		HQ	
		2014	2030	2014	2030	2014	2030	2014	2030	2014	2030
Site 1	0.29	0.23	0.17	0.28	0.18	0.29	0.19	0.28	0.19	0.27	0.19
Site 4	0.62	0.25	0.21	0.33	0.21	0.42	0.28	0.45	0.30	0.35	0.21

Sample Run – Site 1

Build Option 1 – 2014 AM

```
'Site 1 Opt 1/2 2014 1B1A1401.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'ACROLEIN' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 0.350
2 1606 0.350
3 120 57 2.0 1606 3.250 1679 1 3
4 527 0.350
5 120 107 2.0 527 3.250 1700 1 3
6 1830 0.350
7 1830 0.350
8 1830 0.350
9 3568 0.350
10 3568 0.350
11 3548 0.350
12 120 65 2.0 3548 3.250 1665 1 3
13 20 0.350
14 20 0.350
15 120 115 2.0 20 3.250 1752 1 3
16 4130 0.350
17 4130 0.350
18 958 0.350
19 958 0.350
20 958 0.350
21 120 94 2.0 958 3.250 1523 1 3
22 45 0.350
23 85 0.350
24 120 109 2.0 85 3.250 1694 1 3
25 739 0.350
26 739 0.350
27 739 0.350
```

1B1A1401.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 1
TIME : 19:14:40
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*--*--
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 2
TIME : 19:14:40
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*--*--
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
----
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0

21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 3
TIME : 19:14:40
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
Receptor Data
----
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results

Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum

```
concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 133.2 157.8 153.2 146.4 75.5 71.0 148.7 110.9 101.4 102.5
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 133.2 157.8 153.2 146.4 75.5 71.0 148.7 110.9 101.4 102.5
WIND DIR* 70 40 25 285 10 0 280 280 340 280
JULIAN * 3 2 2 1 2 2 1 1 2 1
HOUR * 2 20 17 21 14 12 20 20 8 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 166.1 177.8 163.7 111.8 104.7 101.2 114.7 120.8 125.6 136.7
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 166.1 177.8 163.7 111.8 104.7 101.2 114.7 120.8 125.6 136.7
WIND DIR* 255 255 250 250 240 230 220 165 150 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 15 14 14 12 10 8 21 18 9
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 115.0 141.4 140.9 154.1 47.6
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 115.0 141.4 140.9 154.1 47.6
WIND DIR* 95 250 250 100 105
JULIAN * 3 1 1 3 3
HOUR * 7 14 14 8 9
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 4
TIME : 19:14:40
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
THE HIGHEST CONCENTRATION OF 177.80 UG/M**3 OCCURRED AT RECEPTOR REC12.
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 5
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
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Output Section
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NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 91.200 ( 2,24) C 0 35.087 ( 1,24) C 0 34.117 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 131.796*( 2,24) C 0 40.587 ( 1,24) C 0 35.087 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 129.771 ( 2,24) C 0 49.325 ( 1,24) C 0 29.637 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 84.971 ( 2,24) C 0 49.708 ( 1,24) C 0 43.150 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 59.350 ( 2,24) C 0 16.879 ( 1,24) C 0 11.108 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 55.838 ( 2,24) C 0 18.983 ( 1,24) C 0 9.696 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 78.042 ( 2,24) C 0 64.037 ( 1,24) C 0 24.671 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 83.429 ( 2,24) C 0 39.492 ( 1,24) C 0 25.208 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
Page 2
1B1A1401.OUT
9 85.508 ( 2,24) C 0 36.021 ( 1,24) C 0 24.296 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 80.333 ( 2,24) C 0 37.829 ( 1,24) C 0 24.525 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 105.500 ( 3,24) C 0 105.288 ( 1,24) C 0 6.200 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 113.337 ( 1,24) C 0 113.087*( 3,24) C 0 12.608 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 112.421 ( 1,24) C 0 112.329 ( 3,24) C 0 16.796 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 72.875 ( 3,24) C 0 70.100 ( 1,24) C 0 28.808 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 70.871 ( 1,24) C 0 37.071 ( 2,24) C 0 34.258 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 73.338 ( 1,24) C 0 37.871 ( 2,24) C 0 24.546 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 87.442 ( 1,24) C 0 49.792 ( 2,24) C 0 17.237 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 101.096 ( 3,24) C 0 44.104 ( 2,24) C 0 24.421 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 112.200 ( 3,24) C 0 53.271 ( 2,24) C 0 32.779 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 112.417 ( 3,24) C 0 52.733 ( 2,24) C 0 39.763 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 79.633 ( 3,24) C 0 71.233 ( 1,24) C 0 35.708 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 109.567 ( 3,24) C 0 97.429 ( 1,24) C 0 15.825 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 113.304 ( 3,24) C 0 91.700 ( 1,24) C 0 12.546 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 109.187 ( 3,24) C 0 91.283 ( 1,24) C 0 9.304 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 36.771 ( 3,24) C 0 22.879 ( 1,24) C 0 2.129 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 53.468 ( 3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 6
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 69.157 ( 3,24) C 0
3 69.578 ( 3,24) C 0
4 59.276 ( 3,24) C 0
5 29.113 ( 3,24) C 0
6 28.172 ( 3,24) C 0
7 55.583 ( 3,24) C 0
8 49.376 ( 3,24) C 0
9 48.608 ( 3,24) C 0
10 47.562 ( 3,24) C 0
11 72.329 ( 3,24) C 0
12 79.678 ( 3,24) C 0
13 80.515* ( 3,24) C 0
14 57.261 ( 3,24) C 0
15 47.400 ( 3,24) C 0
16 45.251 ( 3,24) C 0
17 51.490 ( 3,24) C 0
18 56.540 ( 3,24) C 0
```

19 66.083 (3,24) C 0
20 68.304 (3,24) C 0
21 62.192 (3,24) C 0
22 74.274 (3,24) C 0
23 72.517 (3,24) C 0
24 69.925 (3,24) C 0
25 20.593 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 91.200 (2,24) 0.00 91.20 0.08 21.57 2.03 4.30 29.22 0.07 0.01 0.00 0.02 0.05
Links 10+ 0.43 0.32 0.00 0.00 0.04 1.33 25.37 0.45 0.20 0.42
Links 20+ 4.62 0.00 0.00 0.01 0.21 0.14 0.30 0.00 0.00 0.00
2 131.796 (2,24) 0.00 131.80 0.02 21.59 39.91 4.30 28.15 0.17 0.02 0.00 0.03 0.09
Links 10+ 1.18 0.66 0.00 0.00 0.09 5.48 20.47 0.51 0.28 0.98
Links 20+ 6.82 0.00 0.00 0.03 0.50 0.20 0.35 0.00 0.00 0.00
3 129.771 (2,24) 0.00 129.77 0.00 21.39 39.28 4.16 22.83 0.41 0.02 0.01 0.05 0.14
Links 10+ 2.90 1.30 0.00 0.01 0.22 13.31 10.36 0.57 0.35 1.90
Links 20+ 8.85 0.02 0.03 0.09 0.96 0.24 0.39 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 7
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 84.971 (2,24) 0.00 84.97 0.00 20.67 3.52 3.50 6.35 1.64 0.03 0.01 0.06 0.24
Links 10+ 7.85 2.95 0.00 0.03 0.62 15.07 2.76 0.60 0.40 3.27
Links 20+ 10.75 0.34 0.44 1.13 2.03 0.28 0.41 0.00 0.00 0.00
5 59.350 (2,24) 0.00 59.35 0.02 6.75 5.31 1.49 5.98 2.99 0.10 0.03 0.13 0.54
Links 10+ 5.85 3.93 0.00 0.03 0.87 5.95 3.94 0.50 0.28 1.41
Links 20+ 7.12 0.43 0.64 3.52 1.00 0.21 0.35 0.00 0.00 0.00
6 55.838 (2,24) 0.00 55.84 0.02 4.81 2.50 1.07 3.48 5.04 0.15 0.03 0.17 0.75
Links 10+ 7.68 5.50 0.00 0.03 1.24 5.15 2.34 0.50 0.29 1.40
Links 20+ 7.24 0.22 0.76 3.81 1.10 0.22 0.35 0.00 0.00 0.00
7 78.042 (2,24) 0.00 78.04 0.00 13.72 0.45 1.71 1.46 9.11 0.05 0.01 0.08 0.36
Links 10+ 14.02 5.80 0.00 0.07 1.57 9.06 1.03 0.61 0.41 2.89
Links 20+ 11.01 0.12 0.48 0.58 2.69 0.31 0.44 0.00 0.00 0.00
8 83.429 (2,24) 0.00 83.43 0.00 0.50 0.08 0.22 0.28 24.30 0.08 0.02 0.12 0.71
Links 10+ 20.43 13.63 0.02 0.10 5.11 2.42 0.31 0.62 0.40 1.59
Links 20+ 9.95 0.00 0.01 0.01 1.77 0.31 0.45 0.00 0.00 0.00
9 85.508 (2,24) 0.00 85.51 0.00 0.07 0.02 0.04 0.08 24.56 0.15 0.03 0.17 1.68
Links 10+ 20.99 20.66 0.05 0.05 5.01 0.57 0.12 0.60 0.36 0.78

Links 20+ 7.92 0.00 0.00 0.00 0.85 0.29 0.44 0.00 0.00 0.00
10 80.333 (2,24) 0.00 80.33 0.00 0.02 0.00 0.01 0.03 24.72 0.50 0.05 0.33 6.01
Links 10+ 17.01 23.09 0.07 0.00 0.61 0.12 0.04 0.58 0.26 0.31
Links 20+ 5.58 0.00 0.00 0.00 0.34 0.24 0.42 0.00 0.00 0.00
11 105.500 (3,24) 0.00 105.50 0.00 0.00 0.00 0.00 0.00 1.46 6.85 1.08 3.52 42.06
Links 10+ 0.00 50.54 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 113.337 (1,24) 0.00 113.34 0.65 1.81 1.28 0.54 4.42 6.80 0.00 0.00 0.00 0.00
Links 10+ 43.89 39.13 0.09 0.03 2.65 2.16 3.52 0.01 0.12 0.98
Links 20+ 3.81 0.03 0.05 0.39 0.91 0.06 0.00 0.00 0.00 0.00
13 112.421 (1,24) 0.00 112.42 0.76 2.67 1.83 0.79 5.61 5.53 0.00 0.00 0.00 0.00
Links 10+ 40.37 32.54 0.00 0.10 5.89 3.57 4.49 0.00 0.05 1.51
Links 20+ 4.45 0.04 0.08 0.60 1.51 0.01 0.00 0.00 0.00 0.00
14 72.875 (3,24) 0.00 72.88 0.00 0.03 0.00 0.00 0.00 6.71 1.09 0.43 1.24 2.90
Links 10+ 26.88 29.33 0.03 0.05 4.14 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00 0.00
15 70.871 (1,24) 0.00 70.87 0.85 2.62 2.02 0.86 6.46 0.68 0.00 0.00 0.00 0.00
Links 10+ 3.50 0.49 0.00 0.01 0.16 4.33 5.49 0.00 0.45 5.58
Links 20+ 26.29 0.03 0.06 0.41 10.54 0.03 0.00 0.00 0.00 0.00
16 73.338 (1,24) 0.00 73.34 0.78 1.87 1.46 0.62 5.38 0.46 0.00 0.00 0.00 0.00
Links 10+ 1.87 0.44 0.00 0.00 0.15 2.62 4.64 0.03 4.08 2.86
Links 20+ 34.85 0.02 0.03 0.25 2.74 8.16 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 8
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 87.442 (1,24) 0.00 87.44 0.67 1.12 0.84 0.37 3.98 0.27 0.00 0.00 0.00 0.00
Links 10+ 0.88 0.33 0.00 0.00 0.10 1.22 3.41 5.49 1.60 0.79
Links 20+ 54.01 0.00 0.02 0.12 0.51 1.63 10.07 0.00 0.00 0.00
18 101.096 (3,24) 0.00 101.10 0.00 0.21 0.10 0.05 0.10 1.32 0.60 0.32 0.93 1.44
Links 10+ 2.91 6.85 0.00 0.00 0.39 0.40 0.02 10.46 2.33 0.55
Links 20+ 66.47 0.00 0.01 0.09 0.63 2.47 2.43 0.00 0.00 0.00
19 112.200 (3,24) 0.00 112.20 0.00 0.50 0.15 0.13 0.15 2.37 0.70 0.34 0.97 1.72
Links 10+ 6.35 9.10 0.00 0.00 0.80 1.15 0.01 0.00 5.03 8.14
Links 20+ 69.76 0.02 0.03 0.23 3.28 1.27 0.00 0.00 0.00 0.00
20 112.417 (3,24) 0.00 112.42 0.00 1.03 0.20 0.30 0.19 3.30 0.72 0.34 0.95 1.77
Links 10+ 9.98 10.25 0.00 0.03 1.12 3.11 0.00 0.00 0.03 12.51
Links 20+ 61.63 0.03 0.06 0.45 4.29 0.10 0.00 0.00 0.00 0.00
21 79.633 (3,24) 0.00 79.63 0.00 3.25 0.67 1.30 0.74 4.07 0.70 0.33 0.90 1.65
Links 10+ 12.86 10.07 0.00 0.04 1.21 22.98 0.00 0.00 0.00 8.47
Links 20+ 6.26 0.08 0.16 1.12 2.78 0.01 0.00 0.00 0.00 0.00
22 109.567 (3,24) 0.00 109.57 0.00 6.25 7.80 2.80 13.83 2.46 0.55 0.28 0.75 1.24
Links 10+ 5.72 6.97 0.00 0.02 0.68 27.32 25.97 0.00 0.02 1.88
Links 20+ 3.00 0.05 0.12 0.83 1.00 0.03 0.00 0.00 0.00 0.00
23 113.304 (3,24) 0.00 113.30 0.00 7.09 10.19 3.13 18.80 1.68 0.45 0.23 0.65 1.00
Links 10+ 3.58 5.57 0.00 0.00 0.46 7.18 48.17 0.00 0.05 1.06
Links 20+ 2.69 0.04 0.07 0.51 0.63 0.05 0.00 0.00 0.00 0.00
24 109.187 (3,24) 0.00 109.19 0.00 7.89 4.05 3.43 22.20 1.06 0.35 0.20 0.55 0.76
Links 10+ 2.11 4.27 0.00 0.00 0.28 2.58 55.78 0.03 0.09 0.57
Links 20+ 2.22 0.02 0.04 0.28 0.35 0.07 0.02 0.00 0.00 0.00
25 36.771 (3,24) 0.00 36.77 0.50 2.84 1.44 1.03 7.58 0.70 0.28 0.17 0.45 0.58

Links 10+ 1.37 3.45 0.00 0.00 0.19 1.25 10.25 0.15 0.17 0.41
Links 20+ 3.29 0.00 0.02 0.15 0.27 0.12 0.11 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 35.087 (1,24) 0.00 35.09 3.85 9.65 0.00 0.80 12.35 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 8.43 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 9
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 40.587 (1,24) 0.00 40.59 2.22 11.13 4.57 1.17 12.59 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 8.91 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 49.325 (1,24) 0.00 49.33 1.65 11.71 12.68 1.32 12.76 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 9.21 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 49.708 (1,24) 0.00 49.71 1.29 12.64 11.88 1.46 12.91 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.81 8.65 0.00 0.00 0.00
Links 20+ 0.00 0.03 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 16.879 (1,24) 0.00 16.88 1.24 2.23 1.82 0.47 6.28 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 4.80 0.00 0.00 0.00
Links 20+ 0.00 0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 18.983 (1,24) 0.00 18.98 1.09 2.39 2.38 0.52 6.28 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.19 4.75 0.00 0.00 0.00
Links 20+ 0.00 0.36 1.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00
7 64.037 (1,24) 0.00 64.04 1.11 12.68 6.30 1.52 10.71 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 2.33 7.27 0.00 0.00 0.08
Links 20+ 0.00 0.41 1.12 20.50 0.00 0.00 0.00 0.00 0.00 0.00
8 39.492 (1,24) 0.00 39.49 0.92 5.54 3.22 1.21 7.56 8.10 0.00 0.00 0.00 0.00
Links 10+ 0.66 0.00 0.00 0.00 0.00 3.38 5.54 0.00 0.00 0.40
Links 20+ 0.14 0.12 0.28 2.19 0.22 0.00 0.00 0.00 0.00 0.00
9 36.021 (1,24) 0.00 36.02 0.76 2.99 1.97 0.79 5.62 10.91 0.00 0.00 0.00 0.00
Links 10+ 2.54 0.48 0.00 0.02 0.50 2.65 4.28 0.00 0.00 0.49
Links 20+ 0.63 0.05 0.12 0.85 0.38 0.00 0.00 0.00 0.00 0.00
10 37.829 (1,24) 0.00 37.83 0.63 1.77 1.24 0.49 4.19 13.27 0.00 0.00 0.00 0.00
Links 10+ 4.47 2.83 0.00 0.03 1.37 1.70 3.24 0.00 0.02 0.48
Links 20+ 1.21 0.03 0.06 0.40 0.39 0.01 0.00 0.00 0.00 0.00
11 105.288 (1,24) 0.00 105.29 0.51 1.12 0.80 0.34 3.21 7.57 0.16 0.00 0.00 27.47
Links 10+ 14.00 40.80 0.03 0.00 0.83 1.17 2.51 0.05 0.17 0.54
Links 20+ 3.10 0.01 0.03 0.21 0.49 0.13 0.03 0.00 0.00 0.00
12 113.087 (3,24) 0.00 113.09 0.00 0.00 0.00 0.00 0.00 6.65 2.55 0.68 2.04 10.26
Links 10+ 38.55 52.25 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 112.329 (3,24) 0.00 112.33 0.00 0.00 0.00 0.00 0.00 7.70 1.63 0.54 1.59 5.00
Links 10+ 43.23 50.87 0.10 0.02 1.65 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 70.100 (1,24) 0.00 70.10 0.91 4.21 2.82 1.36 7.83 1.87 0.00 0.00 0.00 0.00
Links 10+ 16.63 0.94 0.00 0.04 0.24 7.89 6.35 0.00 0.00 3.72
Links 20+ 8.88 0.06 0.12 0.88 5.35 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 10
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 37.071 (2,24) 0.00 37.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.60 2.40 0.45
Links 20+ 24.06 0.00 0.00 0.00 4.51 2.97 1.09 0.00 0.00 0.00
16 37.871 (2,24) 0.00 37.87 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.77 1.76 0.00
Links 20+ 26.03 0.00 0.00 0.00 0.00 5.45 1.87 0.00 0.00 0.00
17 49.792 (2,24) 0.00 49.79 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 5.22 0.00 0.00
Links 20+ 34.74 0.00 0.00 0.00 0.00 0.00 9.83 0.00 0.00 0.00
18 44.104 (2,24) 0.00 44.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 7.44 0.00 0.00
Links 20+ 33.93 0.00 0.00 0.00 0.00 0.00 2.73 0.00 0.00 0.00
19 53.271 (2,24) 0.00 53.27 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.15 7.13 0.14
Links 20+ 41.29 0.00 0.00 0.00 0.00 1.30 1.27 0.00 0.00 0.00
20 52.733 (2,24) 0.00 52.73 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.31 2.06 5.67
Links 20+ 41.25 0.00 0.00 0.00 0.59 1.00 0.85 0.00 0.00 0.00
21 71.233 (1,24) 0.00 71.23 1.30 5.79 6.93 2.40 17.73 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 21.68 15.12 0.00 0.00 0.19
Links 20+ 0.00 0.01 0.01 0.07 0.00 0.00 0.00 0.00 0.00 0.00
22 97.429 (1,24) 0.00 97.43 1.78 6.51 6.43 2.92 23.90 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 55.85 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 91.700 (1,24) 0.00 91.70 2.40 5.95 0.90 2.76 23.94 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 55.75 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 91.283 (1,24) 0.00 91.28 4.55 4.20 0.00 2.19 24.05 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 56.29 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 22.879 (1,24) 0.00 22.88 3.52 0.13 0.00 0.06 9.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 10.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 11
TIME : 19:14:41

JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 53.468 (3,24) 0.00 53.47 1.31 13.35 2.64 1.96 15.27 0.42 0.13 0.07 0.19 0.28
Links 10+ 0.80 1.53 0.00 0.00 0.11 1.03 11.72 0.15 0.07 0.24
Links 20+ 1.74 0.01 0.02 0.13 0.14 0.05 0.10 0.00 0.00 0.00
2 69.157 (3,24) 0.00 69.16 0.74 13.60 17.66 2.01 14.21 0.68 0.17 0.08 0.23 0.36
Links 10+ 1.30 1.97 0.00 0.00 0.17 2.36 9.81 0.17 0.09 0.42
Links 20+ 2.36 0.02 0.04 0.28 0.24 0.07 0.12 0.00 0.00 0.00
3 69.578 (3,24) 0.00 69.58 0.55 13.39 18.38 1.93 11.89 1.10 0.20 0.10 0.27 0.45
Links 10+ 2.06 2.49 0.00 0.01 0.27 4.60 6.52 0.19 0.12 0.68
Links 20+ 2.97 0.05 0.09 0.69 0.38 0.08 0.13 0.00 0.00 0.00
4 59.276 (3,24) 0.00 59.28 0.43 12.85 5.13 1.66 6.42 2.28 0.25 0.11 0.31 0.57
Links 10+ 3.71 3.39 0.00 0.02 0.47 5.29 3.80 0.20 0.13 1.09
Links 20+ 3.58 0.33 0.49 5.82 0.69 0.09 0.14 0.00 0.00 0.00

5 29.113 (3,24) 0.00 29.11 0.42 2.99 2.38 0.65 4.09 1.49 0.24 0.11 0.30 0.53
Links 10+ 2.22 2.86 0.00 0.01 0.33 1.99 2.91 0.17 0.09 0.47
Links 20+ 2.37 0.32 0.47 1.18 0.33 0.07 0.12 0.00 0.00 0.00
6 28.172 (3,24) 0.00 28.17 0.37 2.40 1.63 0.53 3.25 2.12 0.28 0.12 0.34 0.62
Links 10+ 2.75 3.38 0.00 0.01 0.43 1.78 2.36 0.17 0.10 0.47
Links 20+ 2.41 0.19 0.62 1.28 0.37 0.07 0.12 0.00 0.00 0.00
7 55.583 (3,24) 0.00 55.58 0.37 8.99 2.25 1.08 4.06 5.99 0.30 0.12 0.35 0.70
Links 10+ 5.61 4.47 0.00 0.03 0.78 3.80 2.77 0.20 0.14 0.99
Links 20+ 3.67 0.18 0.57 7.03 0.90 0.10 0.15 0.00 0.00 0.00
8 49.376 (3,24) 0.00 49.38 0.31 2.01 1.10 0.48 2.61 14.25 0.40 0.15 0.42 0.97
Links 10+ 7.70 7.11 0.01 0.03 1.77 1.93 1.95 0.21 0.13 0.66
Links 20+ 3.36 0.04 0.10 0.73 0.66 0.10 0.15 0.00 0.00 0.00
9 48.608 (3,24) 0.00 48.61 0.25 1.02 0.66 0.28 1.90 14.96 0.58 0.18 0.52 1.48
Links 10+ 8.16 9.61 0.02 0.02 1.84 1.07 1.47 0.20 0.12 0.42
Links 20+ 2.85 0.02 0.04 0.28 0.41 0.10 0.15 0.00 0.00 0.00
10 47.562 (3,24) 0.00 47.56 0.21 0.59 0.42 0.17 1.40 15.49 1.10 0.24 0.71 2.99
Links 10+ 7.17 11.24 0.03 0.01 0.66 0.61 1.09 0.19 0.09 0.26
Links 20+ 2.26 0.01 0.02 0.13 0.24 0.08 0.14 0.00 0.00 0.00
11 72.329 (3,24) 0.00 72.33 0.17 0.37 0.27 0.11 1.07 3.01 2.34 0.36 1.19 23.46
Links 10+ 4.68 30.53 0.01 0.00 0.28 0.39 0.84 0.23 0.09 0.19
Links 20+ 2.23 0.00 0.01 0.07 0.17 0.09 0.17 0.00 0.00 0.00
12 79.678 (3,24) 0.00 79.68 0.22 0.60 0.43 0.18 1.47 4.48 0.85 0.23 0.69 3.46
Links 10+ 28.53 30.58 0.06 0.01 0.88 0.72 1.17 0.27 0.16 0.37
Links 20+ 3.45 0.01 0.02 0.13 0.36 0.14 0.20 0.00 0.00 0.00
13 80.515 (3,24) 0.00 80.52 0.25 0.89 0.61 0.26 1.87 4.41 0.54 0.18 0.54 1.69
Links 10+ 28.82 27.89 0.03 0.04 2.52 1.19 1.50 0.30 0.22 0.64
Links 20+ 4.77 0.01 0.03 0.20 0.71 0.19 0.21 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 12
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 57.261 (3,24) 0.00 57.26 0.30 1.41 0.94 0.45 2.61 2.86 0.36 0.14 0.42 0.97
Links 10+ 14.51 10.10 0.01 0.03 1.46 2.63 2.12 0.34 0.34 1.84
Links 20+ 9.60 0.02 0.04 0.30 2.94 0.28 0.24 0.00 0.00 0.00
15 47.400 (3,24) 0.00 47.40 0.28 0.90 0.67 0.29 2.15 1.36 0.32 0.14 0.40 0.86
Links 10+ 4.21 4.91 0.00 0.01 0.50 1.45 1.83 0.53 0.95 2.01
Links 20+ 16.78 0.01 0.02 0.16 5.27 1.00 0.36 0.00 0.00 0.00
16 45.251 (3,24) 0.00 45.25 0.26 0.65 0.49 0.21 1.80 0.89 0.29 0.13 0.39 0.77
Links 10+ 2.36 3.67 0.00 0.00 0.28 0.89 1.55 0.93 1.95 0.97
Links 20+ 20.32 0.01 0.01 0.10 1.09 4.62 0.62 0.00 0.00 0.00
17 51.490 (3,24) 0.00 51.49 0.22 0.39 0.29 0.13 1.33 0.47 0.23 0.12 0.35 0.55
Links 10+ 1.07 2.49 0.00 0.00 0.13 0.44 1.14 3.57 0.56 0.30
Links 20+ 29.88 0.00 0.01 0.05 0.24 0.67 6.87 0.00 0.00 0.00
18 56.540 (3,24) 0.00 56.54 0.27 0.48 0.36 0.16 1.60 0.48 0.20 0.11 0.31 0.48
Links 10+ 1.09 2.30 0.00 0.00 0.14 0.54 1.42 6.10 1.17 0.40
Links 20+ 36.02 0.00 0.01 0.06 0.28 0.84 1.72 0.00 0.00 0.00
19 66.083 (3,24) 0.00 66.08 0.33 0.92 0.72 0.31 2.49 0.81 0.23 0.11 0.32 0.57
Links 10+ 2.22 3.04 0.00 0.00 0.27 1.44 2.26 0.72 4.06 3.60
Links 20+ 39.07 0.01 0.02 0.12 1.14 0.85 0.42 0.00 0.00 0.00
20 68.304 (3,24) 0.00 68.30 0.38 1.46 1.16 0.52 3.42 1.11 0.24 0.11 0.32 0.59
Links 10+ 3.38 3.42 0.00 0.01 0.37 3.22 3.08 0.44 0.70 6.82
Links 20+ 35.01 0.01 0.03 0.21 1.64 0.37 0.28 0.00 0.00 0.00
21 62.192 (3,24) 0.00 62.19 0.43 3.01 2.53 1.23 6.16 1.36 0.23 0.11 0.30 0.56
Links 10+ 4.30 3.37 0.00 0.01 0.40 14.90 5.04 0.30 0.28 4.31
Links 20+ 11.21 0.03 0.06 0.40 1.27 0.18 0.20 0.00 0.00 0.00
22 74.274 (3,24) 0.00 74.27 0.59 4.25 4.74 1.90 12.58 0.82 0.18 0.09 0.25 0.42
Links 10+ 1.94 2.35 0.00 0.01 0.23 9.26 27.77 0.25 0.18 0.92
Links 20+ 4.49 0.02 0.04 0.28 0.45 0.12 0.17 0.00 0.00 0.00
23 72.517 (3,24) 0.00 72.52 0.80 4.35 3.70 1.96 14.25 0.56 0.15 0.08 0.22 0.34
Links 10+ 1.21 1.88 0.00 0.00 0.15 2.43 35.91 0.21 0.13 0.47
Links 20+ 3.04 0.01 0.02 0.17 0.26 0.09 0.14 0.00 0.00 0.00
24 69.925 (3,24) 0.00 69.92 1.52 4.03 1.35 1.87 15.42 0.35 0.12 0.07 0.18 0.25
Links 10+ 0.71 1.44 0.00 0.00 0.09 0.87 38.81 0.17 0.08 0.23
Links 20+ 1.93 0.01 0.01 0.09 0.13 0.06 0.12 0.00 0.00 0.00
25 20.593 (3,24) 0.00 20.59 1.34 0.99 0.48 0.36 5.55 0.23 0.09 0.06 0.15 0.19
Links 10+ 0.46 1.15 0.00 0.00 0.06 0.42 6.79 0.17 0.07 0.14
Links 20+ 1.59 0.00 0.01 0.05 0.09 0.04 0.12 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 13
TIME : 19:14:41
JOB: Site 1 Opt 1/2 2014 1B1A1401.DA3 RUN: ACROLEIN
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1402.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BENZENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 26.24
2 1606 26.24
3 120 57 2.0 1606 347.4 1679 1 3
4 527 26.24
5 120 107 2.0 527 347.4 1700 1 3
6 1830 26.24
7 1830 26.24
8 1830 26.24
9 3568 26.24
10 3568 26.24
11 3548 26.24
12 120 65 2.0 3548 347.4 1665 1 3
13 20 26.24
14 20 26.24
15 120 115 2.0 20 347.4 1752 1 3
16 4130 26.24
17 4130 26.24
18 958 26.24
19 958 26.24
20 958 26.24
21 120 94 2.0 958 347.4 1523 1 3
22 45 26.24
23 85 26.24
24 120 109 2.0 85 347.4 1694 1 3
25 739 26.24
26 739 26.24
27 739 26.24
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1B1A1402.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 1
TIME : 19:21:17
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 2
TIME : 19:21:17
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 3
TIME : 19:21:17
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*--
MAX+BKG * 11982.6 14816.9 14382.3 13397.8 6783.7 6370.3 13700.5 9625.4 9204.0 8636.3
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 11982.6 14816.9 14382.3 13397.8 6783.7 6370.3 13700.5 9625.4 9204.0 8636.3
WIND DIR* 70 40 20 285 10 0 275 275 340 285
JULIAN * 3 2 2 1 2 2 1 1 2 1
HOUR * 2 20 16 21 14 12 19 19 8 21
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*--
MAX+BKG * 14925.3 15872.2 14427.9 9491.5 9614.9 9468.5 11024.7 11780.6 12200.7 13182.7
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 14925.3 15872.2 14427.9 9491.5 9614.9 9468.5 11024.7 11780.6 12200.7 13182.7
WIND DIR* 255 250 250 250 240 230 220 165 150 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 14 14 14 12 10 8 21 18 9
* REC21 REC22 REC23 REC24 REC25
--------*--
MAX+BKG * 10057.6 11817.2 11757.8 12974.4 4229.9
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 10057.6 11817.2 11757.8 12974.4 4229.9
WIND DIR* 95 250 250 100 100
JULIAN * 3 1 1 3 3
HOUR * 7 14 14 8 8
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 4
TIME : 19:21:17
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
THE HIGHEST CONCENTRATION OF15872.20 UG/M**3 OCCURRED AT RECEPTOR REC12.
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 5
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
17994.863 (2,24) C 03059.884 (3,24) C 03024.821 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2*********(2,24) C 03592.533 (1,24) C 03181.916 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3******** (2,24) C 04511.221 (1,24) C 02608.733 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
47180.979 (2,24) C 04519.029 (1,24) C 04011.670 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
55306.800 (2,24) C 01525.842 (1,24) C 0 986.271 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
64946.633 (2,24) C 01699.633 (1,24) C 0 877.271 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
76519.330 (2,24) C 05999.412 (1,24) C 02118.796 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
87183.967 (2,24) C 03378.400 (1,24) C 02142.571 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
Page 2
1B1A1402.OUT
97490.234 (2,24) C 03023.996 (1,24) C 02068.592 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
106960.900 (2,24) C 03198.188 (1,24) C 02088.525 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
119522.470 (3,24) C 09459.625 (1,24) C 0 589.592 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12******** (1,24) C 0*********(3,24) C 01166.329 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13******** (3,24) C 0******** (1,24) C 01583.921 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
146536.070 (3,24) C 05946.072 (1,24) C 02798.779 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
156458.012 (1,24) C 03548.667 (2,24) C 03068.288 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
166861.141 (1,24) C 03670.434 (2,24) C 02208.471 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
178453.121 (1,24) C 04841.050 (2,24) C 01562.388 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
189944.278 (3,24) C 04388.717 (2,24) C 02260.304 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19******** (3,24) C 05310.979 (2,24) C 02956.104 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20******** (3,24) C 05271.604 (2,24) C 03482.821 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
216617.687 (3,24) C 06130.413 (1,24) C 03553.521 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
229275.833 (3,24) C 08273.971 (1,24) C 01525.129 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
239719.454 (3,24) C 07667.842 (1,24) C 01150.021 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
249251.179 (3,24) C 07613.428 (1,24) C 0 815.333 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
253276.300 (3,24) C 02004.804 (1,24) C 0 207.883 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 4693.188 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 6
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 6358.265 (3,24) C 0
3 6388.468 (3,24) C 0
4 5237.227 (3,24) C 0
5 2606.304 (3,24) C 0
6 2507.846 (3,24) C 0
7 4879.179 (3,24) C 0
8 4234.979 (3,24) C 0
9 4194.273 (3,24) C 0
10 4082.537 (3,24) C 0
11 6523.896 (3,24) C 0
12 7153.530 (3,24) C 0
13 7246.771* (3,24) C 0
14 5093.641 (3,24) C 0
15 4358.322 (3,24) C 0
16 4246.682 (3,24) C 0
17 4952.186 (3,24) C 0
18 5531.100 (3,24) C 0

```
19 6413.382 ( 3,24) C 0
20 6513.058 ( 3,24) C 0
21 5433.874 ( 3,24) C 0
22 6358.311 ( 3,24) C 0
23 6179.105 ( 3,24) C 0
24 5893.314 ( 3,24) C 0
25 1829.662 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17994.863 ( 2,24) 0.00 7994.86 6.49******216.88322.51****** 5.18 0.77 0.38 1.79 4.15
Links 10+ 32.62 34.33 0.03 0.09 4.03 99.79****** 33.09 15.34 31.18
Links 20+493.78 0.08 0.13 1.10 16.28 10.47 22.77 0.00 0.00 0.00
2******** ( 2,24) 0.0012300.35 1.31************322.18****** 12.35 1.27 0.53 2.52 7.10
Links 10+ 89.01 69.78 0.05 0.27 9.92410.78****** 38.55 21.23 72.54
Links 20+729.65 0.30 0.48 3.02 36.97 14.82 26.52 0.00 0.00 0.00
3******** ( 2,24) 0.0012045.45 0.50************312.36****** 30.52 1.75 0.67 3.34 11.01
Links 10+217.04138.73 0.08 0.77 23.28997.69776.28 42.34 25.71142.76
Links 20+946.76 1.45 2.16 9.55 72.43 18.11 29.21 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 7
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
47180.979 ( 2,24) 0.00 7180.98 0.28******377.24262.35679.87123.33 2.50 0.86 4.57 18.03
Links 10+588.60316.30 0.20 2.80 66.80******206.98 45.42 29.67244.54
Links 20+****** 25.25 32.85120.82151.74 21.27 31.59 0.00 0.00 0.00
55306.800 ( 2,24) 0.00 5306.80 1.88506.08568.74111.39639.79223.86 8.07 2.19 10.13 40.13
Links 10+439.26420.30 0.41 1.88 91.53447.13295.07 36.97 20.75106.27
Links 20+760.48 32.25 48.28376.48 75.99 15.47 26.00 0.00 0.00 0.00
64946.633 ( 2,24) 0.00 4946.63 1.18360.82267.85 80.28371.68378.14 11.17 2.73 12.77 56.60
Links 10+576.63587.90 0.63 2.50132.51385.49175.01 37.67 21.33104.05
Links 20+773.81 16.52 56.94406.43 83.09 16.20 26.69 0.00 0.00 0.00
76519.330 ( 2,24) 0.00 6519.33 0.17****** 48.56127.38156.43682.45 3.48 1.08 5.90 27.32
Links 10+******619.99 0.39 5.90167.82679.48 77.66 46.47 30.79217.17
Links 20+****** 8.85 35.78 62.23201.93 22.99 32.69 0.00 0.00 0.00
87183.967 ( 2,24) 0.00 7183.97 0.09 37.42 7.82 16.68 30.05****** 5.88 1.55 8.61 53.10
Links 10+************ 1.25 8.02546.35181.85 23.67 46.75 29.79119.46
Links 20+****** 0.38 0.95 0.91133.03 23.69 33.34 0.00 0.00 0.00
97490.234 ( 2,24) 0.00 7490.23 0.07 5.32 2.02 3.10 8.72****** 11.54 2.24 13.29125.82
Links 10+************ 4.35 4.73535.60 43.16 8.81 45.66 26.52 58.64
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Links 20+847.29 0.05 0.10 0.21 64.18 21.80 32.97 0.00 0.00 0.00
106960.900 ( 2,24) 0.00 6960.90 0.05 1.13 0.58 0.65 2.86****** 36.99 3.71 24.78451.05
Links 10+************ 5.79 0.55 65.21 9.15 3.26 43.10 19.94 22.97
Links 20+596.17 0.00 0.02 0.05 25.25 17.84 31.71 0.00 0.00 0.00
119522.470 ( 3,24) 0.00 9522.47 0.00 0.00 0.00 0.00 0.00109.68514.27 80.12263.32******
Links 10+ 0.00****** 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12******** ( 1,24) 0.0010148.14 48.74136.05136.90 40.52471.59509.00 0.00 0.00 0.00 0.00
Links 10+************ 6.19 2.97284.30161.42263.63 0.91 9.39 73.18
Links 20+407.05 2.04 4.22 41.79 69.16 4.70 0.21 0.00 0.00 0.00
13******** ( 3,24) 0.0010098.37 0.00 0.00 0.00 0.00 0.00577.53122.54 40.72119.20375.84
Links 10+************ 7.13 1.22177.18 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
146536.070 ( 3,24) 0.00 6536.07 0.00 2.29 0.00 0.05 0.00503.15 81.31 32.35 93.07217.75
Links 10+************ 1.92 4.58443.93 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.15 0.47 3.14 0.69 0.00 0.00 0.00 0.00 0.00
156458.012 ( 1,24) 0.00 6458.01 64.51196.28215.78 64.97691.14 51.38 0.00 0.00 0.00 0.00
Links 10+262.23 51.94 0.00 0.97 17.84324.43411.64 0.10 33.56418.90
Links 20+****** 2.21 4.25 44.21789.52 2.48 0.00 0.00 0.00 0.00
166861.141 ( 1,24) 0.00 6861.14 59.32139.95156.18 46.42576.64 34.90 0.00 0.00 0.00 0.00
Links 10+140.29 47.53 0.00 0.56 16.75196.81348.46 2.40306.49215.08
Links 20+****** 1.37 2.70 27.44205.46611.70 0.01 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 8
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
178453.121 ( 1,24) 0.00 8453.12 49.98 83.75 90.48 27.52425.78 20.58 0.00 0.00 0.00 0.01
Links 10+ 65.75 35.13 0.02 0.27 11.66 91.19256.57411.12119.88 59.82
Links 20+****** 0.70 1.34 13.63 38.17121.73754.49 0.00 0.00 0.00
189944.278 ( 3,24) 0.00 9944.28 0.00 15.45 10.32 4.08 10.83 98.62 45.07 24.48 69.31108.14
Links 10+218.80732.44 0.42 0.53 41.41 30.08 1.92784.10174.22 41.90
Links 20+****** 0.47 1.01 9.92 46.92185.53182.35 0.00 0.00 0.00
19******** ( 3,24) 0.0010973.06 0.00 37.47 15.35 10.18 15.49178.70 52.74 25.59 72.46129.25
Links 10+475.10972.44 0.65 1.32 85.23 86.65 0.79 0.18377.08610.42
Links 20+****** 1.17 2.50 25.01245.20 94.88 0.40 0.00 0.00 0.00
20******** ( 3,24) 0.0010784.75 0.00 76.67 21.45 22.83 20.95246.51 54.31 25.48 72.04133.00
Links 10+748.05****** 0.75 2.25119.15232.75 0.19 0.03 2.60937.56
Links 20+****** 2.30 4.90 48.90321.42 7.20 0.08 0.00 0.00 0.00
216617.687 ( 3,24) 0.00 6617.69 0.00244.09 71.73 98.27 79.43305.04 52.16 24.30 67.92124.62
Links 10+964.27****** 0.73 3.32130.33****** 0.00 0.01 0.17635.67
Links 20+668.91 6.15 12.03120.16208.62 0.69 0.01 0.00 0.00 0.00
229275.833 ( 3,24) 0.00 9275.83 0.00469.02833.32209.60******184.48 40.84 20.53 56.57 93.16
Links 10+429.26746.17 0.47 1.52 73.21************ 0.12 1.66140.88
Links 20+321.01 4.62 8.78 89.07 75.11 2.23 0.15 0.00 0.00 0.00
239719.454 ( 3,24) 0.00 9719.46 0.00531.99******234.59******125.29 33.96 17.99 49.25 75.70
Links 10+268.19596.08 0.35 0.93 49.36538.69****** 0.60 4.08 79.09
Links 20+288.29 2.87 5.47 54.47 46.70 3.87 0.55 0.00 0.00 0.00
249251.179 ( 3,24) 0.00 9251.18 0.00591.31433.07257.21****** 79.65 26.37 14.92 40.46 56.82
Links 10+158.29456.84 0.23 0.53 30.72192.98****** 2.09 6.45 43.02
Links 20+237.60 1.58 3.03 29.36 27.39 5.07 1.58 0.00 0.00 0.00
253276.300 ( 3,24) 0.00 3276.30 37.53213.58154.15 77.32811.19 51.75 20.75 12.60 34.11 44.55
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Links 10+103.01369.71 0.16 0.32 20.45 94.09768.14 11.75 13.25 31.16
Links 20+351.28 0.84 1.63 15.78 19.90 9.27 8.02 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
13059.884 ( 3,24) 0.00 3059.88 0.00661.57629.86 59.19452.27 90.15 28.22 15.60 41.59 58.05
Links 10+147.68458.77 0.24 0.52 31.42131.52102.83 0.29 0.94 21.18
Links 20+ 64.17 2.20 4.21 39.57 16.59 1.01 0.24 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 9
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
23592.533 ( 1,24) 0.00 3592.53 166.58834.53488.96 87.52****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00668.27 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
34511.221 ( 1,24) 0.00 4511.22 123.64877.60****** 99.17****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.08690.59 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
44519.029 ( 1,24) 0.00 4519.03 96.86947.43******109.74****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 60.71648.21 0.00 0.00 0.04
Links 20+ 0.00 3.22 3.25 0.00 0.00 0.00 0.00 0.00 0.00 0.00
51525.842 ( 1,24) 0.00 1525.84 92.75166.95194.67 35.59671.46 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 1.81359.72 0.00 0.00 0.00
Links 20+ 0.00 1.72 1.19 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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61699.633 ( 1,24) 0.00 1699.63 81.35178.67254.18 39.05671.60 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 13.99356.29 0.00 0.00 0.07
Links 20+ 0.06 26.42 74.48 3.45 0.00 0.00 0.00 0.00 0.00 0.00
75999.412 ( 1,24) 0.00 5999.41 83.41950.62672.60113.50****** 0.15 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00175.63545.31 0.00 0.00 6.04
Links 20+ 0.23 31.86 84.43****** 0.14 0.00 0.00 0.00 0.00 0.00
83378.400 ( 1,24) 0.00 3378.40 68.88415.67344.66 90.34807.19606.95 0.00 0.00 0.00 0.00
Links 10+ 49.17 0.00 0.00 0.57 0.00253.08415.56 0.00 0.00 29.61
Links 20+ 14.32 9.20 21.36235.37 16.45 0.00 0.00 0.00 0.00 0.00
93023.996 ( 1,24) 0.00 3024.00 57.91223.84211.00 58.28600.27818.22 0.00 0.00 0.00 0.00
Links 10+190.24 52.08 0.00 1.54 53.72197.82320.80 0.01 0.18 37.12
Links 20+ 67.74 4.24 9.35 91.31 28.27 0.03 0.00 0.00 0.00 0.00
103198.188 ( 1,24) 0.00 3198.19 47.63132.80132.60 37.16448.30995.37 0.00 0.00 0.00 0.00
Links 10+335.02301.80 0.58 1.75146.31128.08242.64 0.15 1.64 36.02
Links 20+129.45 2.19 4.67 44.20 29.20 0.61 0.03 0.00 0.00 0.00
119459.625 ( 1,24) 0.00 9459.62 38.62 83.65 85.74 24.95343.57567.36 12.53 0.00 0.00******
Links 10+************ 2.78 1.03 88.98 87.50188.47 3.83 12.96 40.67
Links 20+330.83 1.18 2.40 23.16 36.42 9.54 1.69 0.00 0.00 0.00
12******** ( 3,24) 0.0010146.12 0.00 0.00 0.00 0.00 0.00498.72191.08 50.93153.15769.17
Links 10+************ 7.22 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13******** ( 1,24) 0.0010058.03 56.87200.10195.41 59.75600.08415.59 0.00 0.00 0.00 0.00
Links 10+************ 0.30 7.22629.92267.65337.30 0.15 3.92113.35
Links 20+475.05 3.05 6.45 65.15113.78 0.89 0.01 0.00 0.00 0.00
145946.072 ( 1,24) 0.00 5946.07 68.72316.51302.15101.84837.60139.90 0.00 0.00 0.00 0.00
Links 10+******100.23 0.00 3.41 25.63592.04474.87 0.00 0.30278.41
Links 20+948.87 4.42 9.15 94.02401.03 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 10
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
153548.667 ( 2,24) 0.00 3548.67 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.07 0.01
Links 10+ 0.00 0.40 0.00 0.00 0.00 0.00 0.00119.97180.23 33.12
Links 20+****** 0.00 0.00 0.00338.07222.95 82.18 0.00 0.00 0.00
163670.434 ( 2,24) 0.00 3670.43 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.12 0.00 0.00 0.00 0.00 0.00207.14132.32 0.00
Links 20+****** 0.00 0.00 0.00 0.00408.19140.55 0.00 0.00 0.00
174841.050 ( 2,24) 0.00 4841.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.02 0.00 0.00 0.00 0.00 0.00390.75 0.00 0.00
Links 20+****** 0.00 0.00 0.00 0.00 0.00737.17 0.00 0.00 0.00
184388.717 ( 2,24) 0.00 4388.72 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.03 0.00 0.00 0.00 0.00 0.00557.35 0.00 0.00
Links 20+****** 0.00 0.00 0.00 0.00 0.00204.86 0.00 0.00 0.00
195310.979 ( 2,24) 0.00 5310.98 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00
Links 10+ 0.00 0.17 0.00 0.00 0.00 0.00 0.00160.23533.90 10.22
Links 20+****** 0.00 0.00 0.00 0.26 97.70 94.93 0.00 0.00 0.00
205271.604 ( 2,24) 0.00 5271.60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.10 0.05
Links 10+ 0.00 0.65 0.00 0.00 0.00 0.00 0.00 98.49154.40425.62
Links 20+****** 0.00 0.00 0.00 43.87 75.65 63.66 0.00 0.00 0.00
216130.413 ( 1,24) 0.00 6130.41 98.10434.46741.35179.45****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00************ 0.00 0.00 14.79
Links 20+ 0.00 0.65 0.91 7.50 0.01 0.00 0.00 0.00 0.00 0.00
228273.971 ( 1,24) 0.00 8273.97 133.52488.88688.04219.19****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 4.10****** 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
237667.842 ( 1,24) 0.00 7667.84 179.95446.81 96.27206.97****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00****** 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
247613.428 ( 1,24) 0.00 7613.43 341.52315.50 0.00165.38****** 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00****** 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
252004.804 ( 1,24) 0.00 2004.80 264.21 9.80 0.00 4.37968.81 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00757.62 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 11
TIME : 19:21:18
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JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14693.188 ( 3,24) 0.00 4693.19 98.31******282.25147.25****** 31.78 9.66 5.33 14.46 20.74
Links 10+ 60.10164.37 0.09 0.20 11.82 77.10878.89 11.13 5.43 17.45
Links 20+185.98 0.76 1.45 13.55 10.96 3.83 7.67 0.00 0.00 0.00
26358.265 ( 3,24) 0.00 6358.27 55.96************150.77****** 51.27 12.36 6.34 17.32 27.01
Links 10+ 97.84210.70 0.13 0.35 18.62176.66735.58 12.87 7.13 30.86
Links 20+252.96 1.64 3.08 29.39 18.00 5.04 8.86 0.00 0.00 0.00
36388.468 ( 3,24) 0.00 6388.47 41.38************144.91****** 82.50 15.07 7.26 19.99 33.65
Links 10+154.14266.74 0.17 0.61 28.64344.60488.96 14.12 8.57 50.84
Links 20+317.11 3.92 7.15 73.78 29.08 6.05 9.74 0.00 0.00 0.00
45237.227 ( 3,24) 0.00 5237.23 32.38963.25548.69124.65686.87170.88 18.83 8.42 23.39 43.10
Links 10+277.96362.12 0.26 1.29 50.02396.67285.06 15.14 9.89 81.58
Links 20+383.00 25.18 37.07622.04 51.86 7.09 10.53 0.00 0.00 0.00
```


```
52606.304 ( 3,24) 0.00 2606.30 31.54224.47254.47 48.99437.08111.89 18.07 8.23 22.59 39.57
Links 10+166.66305.35 0.22 0.67 35.27149.65218.26 12.32 6.92 35.42
Links 20+253.49 24.16 35.94125.90 25.35 5.16 8.67 0.00 0.00 0.00
62507.846 ( 3,24) 0.00 2507.85 27.51179.83174.01 39.78347.76159.42 21.12 9.11 25.12 46.69
Links 10+206.73361.62 0.28 0.85 46.12133.16177.10 12.56 7.11 34.71
Links 20+257.96 14.34 46.34136.63 27.70 5.40 8.90 0.00 0.00 0.00
74879.179 ( 3,24) 0.00 4879.18 27.86674.24240.39 80.29433.96448.97 22.45 9.40 26.35 52.48
Links 10+420.32477.76 0.37 2.21 83.12285.04207.66 15.49 10.26 74.41
Links 20+392.26 13.90 43.24750.82 67.36 7.66 10.90 0.00 0.00 0.00
84234.979 ( 3,24) 0.00 4234.98 22.99151.03117.49 35.67279.08****** 30.05 11.20 31.70 72.84
Links 10+576.91760.39 0.71 2.92189.41144.98146.41 15.58 9.93 49.69
Links 20+359.21 3.19 7.44 78.76 49.83 7.90 11.11 0.00 0.00 0.00
94194.273 ( 3,24) 0.00 4194.27 19.33 76.39 71.01 20.46203.00****** 43.30 13.62 39.05110.71
Links 10+611.98****** 1.59 2.09196.44 80.33109.87 15.22 8.90 31.92
Links 20+305.01 1.43 3.15 30.51 30.82 7.27 10.99 0.00 0.00 0.00
104082.537 ( 3,24) 0.00 4082.54 15.89 44.65 44.39 12.60150.39****** 82.12 18.06 53.30224.36
Links 10+537.38****** 2.13 0.76 70.51 45.74 81.97 14.42 7.19 19.66
Links 20+241.87 0.73 1.56 14.75 18.15 6.15 10.58 0.00 0.00 0.00
116523.896 ( 3,24) 0.00 6523.89 12.87 27.88 28.58 8.32114.53225.68175.62 26.83 89.32******
Links 10+350.73****** 0.93 0.34 29.66 29.18 62.84 16.88 7.09 14.10
Links 20+238.61 0.39 0.80 7.72 12.80 6.48 12.80 0.00 0.00 0.00
127153.530 ( 3,24) 0.00 7153.53 16.25 45.35 45.63 13.51157.21335.91 63.74 17.06 51.85259.39
Links 10+************ 4.47 0.99 94.77 53.85 87.92 20.28 11.79 27.58
Links 20+368.54 0.68 1.41 13.93 27.48 10.68 15.01 0.00 0.00 0.00
137246.771 ( 3,24) 0.00 7246.77 18.96 66.70 65.14 19.92200.04331.04 40.90 13.64 40.26126.81
Links 10+************ 2.48 2.81269.03 89.27112.49 22.12 16.25 48.36
Links 20+510.39 1.02 2.15 21.72 53.46 13.97 15.95 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 12
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
145093.641 ( 3,24) 0.00 5093.64 22.91106.27100.72 33.96279.21214.35 27.12 10.82 31.28 72.95
Links 10+************ 0.64 2.66156.52197.35158.32 25.40 25.37137.98
Links 20+****** 1.52 3.21 32.39220.04 20.57 17.74 0.00 0.00 0.00
154358.322 ( 3,24) 0.00 4358.32 21.50 67.23 72.00 21.89230.42101.77 24.31 10.41 30.25 64.77
Links 10+315.57524.72 0.39 0.82 53.54108.89137.21 40.02 71.27150.97
Links 20+****** 0.82 1.64 16.73394.78 75.14 27.40 0.00 0.00 0.00
164246.682 ( 3,24) 0.00 4246.68 19.77 48.39 52.31 15.78192.39 66.60 22.04 10.12 29.49 57.80
Links 10+176.85392.35 0.27 0.45 30.37 67.13116.15 69.85146.27 72.88
Links 20+****** 0.53 1.09 10.88 81.75346.46 46.85 0.00 0.00 0.00
174952.186 ( 3,24) 0.00 4952.19 16.66 29.53 30.87 9.53142.59 35.28 16.98 9.25 26.67 41.68
Links 10+ 79.78265.87 0.14 0.20 14.06 32.68 85.60267.34 41.80 22.39
Links 20+****** 0.29 0.59 5.85 17.68 50.37514.98 0.00 0.00 0.00
185531.100 ( 3,24) 0.00 5531.10 19.75 35.94 38.21 11.84170.70 35.45 15.02 8.16 23.10 36.05
Links 10+ 81.92246.43 0.14 0.22 14.73 41.01106.20457.08 87.65 29.97
Links 20+****** 0.34 0.68 6.69 21.26 63.30129.07 0.00 0.00 0.00
196413.382 ( 3,24) 0.00 6413.38 24.90 68.72 76.38 23.39266.00 61.16 17.58 8.53 24.16 43.08
Links 10+166.31324.38 0.22 0.48 28.51108.32169.35 53.47304.43269.90
Links 20+****** 0.69 1.37 13.68 85.54 64.19 31.78 0.00 0.00 0.00
206513.058 ( 3,24) 0.00 6513.06 27.97109.68124.06 38.84366.64 82.71 18.11 8.50 24.05 44.35
Links 10+253.09365.30 0.25 0.77 39.72241.01230.76 32.84 52.34511.65
Links 20+****** 1.16 2.27 22.52123.10 27.62 21.25 0.00 0.00 0.00
215433.874 ( 3,24) 0.00 5433.87 32.70226.18271.03 92.57658.10101.69 17.41 8.13 22.81 41.83
Links 10+322.78360.81 0.24 1.11 43.46******377.88 22.78 21.37323.32
Links 20+****** 2.27 4.31 42.55 95.50 13.53 15.24 0.00 0.00 0.00
226358.311 ( 3,24) 0.00 6358.31 44.51319.30507.12142.93****** 61.54 13.66 6.88 19.04 31.39
Links 10+145.63251.52 0.16 0.51 24.49694.06****** 18.51 13.36 69.16
Links 20+479.89 1.54 2.93 29.69 33.53 8.66 12.41 0.00 0.00 0.00
236179.105 ( 3,24) 0.00 6179.11 59.98326.27395.10147.20****** 41.82 11.36 6.02 16.58 25.53
Links 10+ 90.83200.77 0.12 0.31 16.52182.24****** 16.07 9.68 34.83
Links 20+325.47 0.96 1.82 18.16 19.16 6.42 10.82 0.00 0.00 0.00
245893.314 ( 3,24) 0.00 5893.31 113.84302.29144.37140.90****** 26.61 8.82 5.00 13.61 19.12
Links 10+ 53.52153.72 0.08 0.18 10.30 65.28****** 12.88 6.18 16.98
Links 20+207.02 0.53 1.01 9.79 10.37 4.26 8.77 0.00 0.00 0.00
251829.662 ( 3,24) 0.00 1829.66 100.58 74.46 51.38 27.23593.33 17.25 6.92 4.20 11.38 14.86
Links 10+ 34.34123.33 0.05 0.11 6.82 31.36508.59 12.94 4.98 10.45
Links 20+170.08 0.28 0.54 5.26 6.67 3.49 8.77 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 13
TIME : 19:21:18
JOB: Site 1 Opt 1/2 2014 1B1A1402.DA3 RUN: BENZENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
```

```
'Site 1 Opt 1/2 2014 1B1A1403.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BUTADIENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

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'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 2.330
2 1606 2.330
3 120 57 2.0 1606 21.45 1679 1 3
4 527 2.330
5 120 107 2.0 527 21.45 1700 1 3
6 1830 2.330
7 1830 2.330
8 1830 2.330
9 3568 2.330
10 3568 2.330
11 3548 2.330
12 120 65 2.0 3548 21.45 1665 1 3
13 20 2.330
14 20 2.330
15 120 115 2.0 20 21.45 1752 1 3
16 4130 2.330
17 4130 2.330
18 958 2.330
19 958 2.330
20 958 2.330
21 120 94 2.0 958 21.45 1523 1 3
22 45 2.330
23 85 2.330
24 120 109 2.0 85 21.45 1694 1 3
25 739 2.330
26 739 2.330
27 739 2.330
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CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 10:14: 1
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*---------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 10:14: 1
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*---------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```



```
21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 10:14: 1
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*--
MAX+BKG * 884.5 1043.5 1013.1 969.9 500.4 471.1 985.4 736.6 672.0 681.6
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 884.5 1043.5 1013.1 969.9 500.4 471.1 985.4 736.6 672.0 681.6
WIND DIR* 70 40 25 285 10 0 280 280 340 285
JULIAN * 3 2 2 1 2 2 1 1 2 1
HOUR * 2 20 17 21 14 12 20 20 8 21
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*--
MAX+BKG * 1102.9 1177.5 1086.4 741.8 693.7 670.8 759.6 799.8 831.2 905.2
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 1102.9 1177.5 1086.4 741.8 693.7 670.8 759.6 799.8 831.2 905.2
WIND DIR* 255 255 250 250 240 230 220 165 150 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 15 14 14 12 10 8 21 18 9
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 764.0 939.2 935.3 1022.7 315.3
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 764.0 939.2 935.3 1022.7 315.3
WIND DIR* 95 250 250 100 105
JULIAN * 3 1 1 3 3
HOUR * 7 14 14 8 9
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 10:14: 1
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
THE HIGHEST CONCENTRATION OF 1177.50 UG/M**3 OCCURRED AT RECEPTOR REC12.
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 5
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 605.146 (2,24) C 0 232.875 (1,24) C 0 226.363 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 873.408*(2,24) C 0 269.329 (1,24) C 0 232.946 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 859.742 (2,24) C 0 326.988 (1,24) C 0 196.704 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 564.312 (2,24) C 0 329.579 (1,24) C 0 285.896 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 393.896 (2,24) C 0 112.042 (1,24) C 0 73.742 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 370.488 (2,24) C 0 125.763 (1,24) C 0 64.262 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 518.550 (2,24) C 0 424.279 (1,24) C 0 163.900 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 553.862 (2,24) C 0 262.058 (1,24) C 0 167.371 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 567.646 (2,24) C 0 239.392 (1,24) C 0 161.438 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 533.337 (2,24) C 0 251.463 (1,24) C 0 162.863 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 699.417 (3,24) C 0 698.325 (1,24) C 0 41.133 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 751.687 (1,24) C 0 749.817*(3,24) C 0 83.608 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 745.816 (1,24) C 0 744.796 (3,24) C 0 111.271 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 483.446 (3,24) C 0 465.542 (1,24) C 0 190.758 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 469.829 (1,24) C 0 245.500 (2,24) C 0 227.175 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 486.175 (1,24) C 0 250.663 (2,24) C 0 163.092 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 578.783 (1,24) C 0 329.433 (2,24) C 0 114.517 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 669.021 (3,24) C 0 291.604 (2,24) C 0 161.642 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 742.462 (3,24) C 0 352.183 (2,24) C 0 217.208 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 744.125 (3,24) C 0 348.808 (2,24) C 0 263.854 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 529.525 (3,24) C 0 472.800 (1,24) C 0 236.258 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 727.804 (3,24) C 0 647.008 (1,24) C 0 104.908 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 752.462 (3,24) C 0 609.050 (1,24) C 0 83.312 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 725.167 (3,24) C 0 606.483 (1,24) C 0 61.871 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 244.300 (3,24) C 0 151.792 (1,24) C 0 14.133 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 354.794 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 6
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 458.561 (3,24) C 0
3 461.144 (3,24) C 0
4 393.263 (3,24) C 0
5 193.226 (3,24) C 0
6 186.837 (3,24) C 0
7 368.910 (3,24) C 0
8 327.764 (3,24) C 0
9 322.825 (3,24) C 0
10 315.888 (3,24) C 0
11 479.625 (3,24) C 0
12 528.371 (3,24) C 0
13 533.961* (3,24) C 0
14 379.915 (3,24) C 0
15 314.168 (3,24) C 0
16 299.976 (3,24) C 0
17 340.911 (3,24) C 0
18 374.089 (3,24) C 0

```
19 437.285 ( 3,24) C 0
20 452.262 ( 3,24) C 0
21 412.861 ( 3,24) C 0
22 493.240 ( 3,24) C 0
23 481.608 ( 3,24) C 0
24 464.507 ( 3,24) C 0
25 136.742 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 605.146 ( 2,24) 0.00 605.15 0.57143.60 13.39 28.63192.79 0.46 0.07 0.03 0.16 0.37
Links 10+ 2.90 2.12 0.00 0.01 0.25 8.87168.90 2.94 1.36 2.77
Links 20+ 30.50 0.00 0.01 0.07 1.45 0.93 2.03 0.00 0.00 0.00
2 873.408 ( 2,24) 0.00 873.41 0.12143.74263.50 28.62185.74 1.10 0.11 0.05 0.22 0.63
Links 10+ 7.91 4.30 0.00 0.03 0.61 36.47136.27 3.42 1.88 6.45
Links 20+ 45.05 0.03 0.05 0.19 3.28 1.31 2.35 0.00 0.00 0.00
3 859.742 ( 2,24) 0.00 859.74 0.04142.35259.22 27.74150.62 2.71 0.15 0.06 0.29 0.97
Links 10+ 19.27 8.57 0.01 0.07 1.43 88.60 68.93 3.76 2.27 12.68
Links 20+ 58.45 0.12 0.19 0.59 6.43 1.61 2.59 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 7
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 564.312 ( 2,24) 0.00 564.31 0.03137.55 23.30 23.29 41.98 10.95 0.22 0.07 0.40 1.60
Links 10+ 52.27 19.52 0.02 0.25 4.13100.26 18.37 4.03 2.63 21.72
Links 20+ 70.94 2.24 2.91 7.46 13.47 1.90 2.80 0.00 0.00 0.00
5 393.896 ( 2,24) 0.00 393.90 0.17 44.94 35.12 9.90 39.50 19.88 0.72 0.19 0.90 3.57
Links 10+ 39.01 25.95 0.04 0.16 5.65 39.70 26.20 3.28 1.85 9.42
Links 20+ 46.95 2.86 4.29 23.24 6.74 1.37 2.31 0.00 0.00 0.00
6 370.488 ( 2,24) 0.00 370.49 0.10 32.04 16.54 7.13 22.95 33.58 0.99 0.24 1.13 5.02
Links 10+ 51.20 36.30 0.05 0.22 8.18 34.24 15.54 3.33 1.89 9.25
Links 20+ 47.77 1.46 5.06 25.09 7.38 1.43 2.37 0.00 0.00 0.00
7 518.550 ( 2,24) 0.00 518.55 0.02 91.39 3.00 11.31 9.65 60.62 0.31 0.10 0.52 2.42
Links 10+ 93.29 38.28 0.04 0.53 10.37 60.33 6.90 4.13 2.73 19.28
Links 20+ 72.65 0.79 3.19 3.84 17.93 2.05 2.90 0.00 0.00 0.00
8 553.862 ( 2,24) 0.00 553.86 0.01 3.33 0.48 1.48 1.85161.77 0.52 0.14 0.77 4.72
Links 10+135.92 89.99 0.11 0.70 33.74 16.14 2.10 4.15 2.65 10.61
Links 20+ 65.64 0.03 0.08 0.05 11.81 2.11 2.95 0.00 0.00 0.00
9 567.646 ( 2,24) 0.00 567.65 0.00 0.47 0.12 0.27 0.54163.43 1.03 0.20 1.18 11.17
Links 10+139.77136.42 0.38 0.41 33.08 3.84 0.78 4.06 2.35 5.21
Page 3
1B1A1403.OUT
Links 20+ 52.31 0.00 0.01 0.02 5.70 1.94 2.93 0.00 0.00 0.00
10 533.337 ( 2,24) 0.00 533.34 0.00 0.10 0.04 0.05 0.17164.68 3.28 0.32 2.20 40.05
Links 10+113.26152.38 0.52 0.05 4.02 0.81 0.28 3.83 1.77 2.03
Links 20+ 36.81 0.00 0.00 0.00 2.24 1.58 2.82 0.00 0.00 0.00
11 699.417 ( 3,24) 0.00 699.42 0.00 0.00 0.00 0.00 0.00 9.75 45.67 7.11 23.38279.94
Links 10+ 0.00333.57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 751.687 ( 1,24) 0.00 751.69 4.33 12.08 8.46 3.60 29.12 45.20 0.00 0.00 0.00 0.00
Links 10+292.24258.28 0.55 0.26 17.56 14.32 23.41 0.08 0.83 6.50
Links 20+ 25.14 0.18 0.38 2.58 6.15 0.42 0.02 0.00 0.00 0.00
13 745.816 ( 1,24) 0.00 745.82 5.05 17.76 12.07 5.30 37.05 36.89 0.00 0.00 0.00 0.00
Links 10+268.80214.80 0.03 0.64 38.89 23.77 29.95 0.02 0.35 10.06
Links 20+ 29.34 0.27 0.57 4.03 10.08 0.08 0.00 0.00 0.00 0.00
14 483.446 ( 3,24) 0.00 483.45 0.00 0.20 0.00 0.00 0.00 44.68 7.21 2.88 8.27 19.33
Links 10+179.00193.59 0.17 0.41 27.40 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.01 0.04 0.19 0.06 0.00 0.00 0.00 0.00 0.00
15 469.829 ( 1,24) 0.00 469.83 5.73 17.44 13.32 5.76 42.68 4.56 0.00 0.00 0.00 0.00
Links 10+ 23.28 3.20 0.00 0.08 1.10 28.81 36.55 0.01 2.98 37.19
Links 20+173.48 0.20 0.38 2.73 70.12 0.22 0.00 0.00 0.00 0.00
16 486.175 ( 1,24) 0.00 486.17 5.26 12.43 9.64 4.12 35.60 3.10 0.00 0.00 0.00 0.00
Links 10+ 12.46 2.93 0.00 0.05 1.03 17.47 30.95 0.21 27.22 19.10
Links 20+229.98 0.12 0.24 1.69 18.25 54.31 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 8
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 578.783 ( 1,24) 0.00 578.78 4.42 7.43 5.58 2.45 26.29 1.82 0.00 0.00 0.00 0.00
Links 10+ 5.84 2.17 0.00 0.02 0.72 8.10 22.79 36.50 10.64 5.30
Links 20+356.50 0.06 0.12 0.84 3.39 10.80 67.00 0.00 0.00 0.00
18 669.021 ( 3,24) 0.00 669.02 0.00 1.38 0.64 0.36 0.67 8.76 4.00 2.17 6.15 9.60
Links 10+ 19.43 45.23 0.03 0.05 2.56 2.67 0.17 69.63 15.47 3.72
Links 20+438.76 0.04 0.09 0.61 4.16 16.48 16.19 0.00 0.00 0.00
19 742.462 ( 3,24) 0.00 742.46 0.00 3.33 0.95 0.90 0.95 15.87 4.68 2.27 6.43 11.47
Links 10+ 42.19 60.04 0.05 0.12 5.26 7.70 0.07 0.02 33.48 54.20
Links 20+460.42 0.10 0.22 1.54 21.77 8.42 0.03 0.00 0.00 0.00
20 744.125 ( 3,24) 0.00 744.12 0.00 6.81 1.33 2.02 1.29 21.89 4.82 2.26 6.40 11.81
Links 10+ 66.43 67.63 0.06 0.20 7.37 20.66 0.02 0.00 0.23 83.25
Links 20+406.78 0.21 0.43 3.02 28.55 0.64 0.00 0.00 0.00 0.00
21 529.525 ( 3,24) 0.00 529.53 0.00 21.67 4.42 8.73 4.90 27.09 4.64 2.16 6.04 11.07
Links 10+ 85.62 66.45 0.06 0.30 8.03152.97 0.00 0.00 0.02 56.45
Links 20+ 41.30 0.54 1.06 7.42 18.51 0.06 0.00 0.00 0.00 0.00
22 727.804 ( 3,24) 0.00 727.80 0.00 41.65 51.45 18.61 91.35 16.38 3.62 1.81 5.03 8.28
Links 10+ 38.10 46.07 0.04 0.13 4.52181.82172.89 0.01 0.15 12.51
Links 20+ 19.83 0.41 0.77 5.50 6.67 0.19 0.01 0.00 0.00 0.00
23 752.462 ( 3,24) 0.00 752.46 0.00 47.24 67.25 20.83124.15 11.12 3.02 1.59 4.36 6.72
Links 10+ 23.82 36.80 0.03 0.08 3.05 47.84320.68 0.05 0.36 7.02
Links 20+ 17.80 0.26 0.49 3.37 4.15 0.35 0.05 0.00 0.00 0.00
24 725.167 ( 3,24) 0.00 725.17 0.00 52.51 26.73 22.85146.48 7.07 2.35 1.33 3.60 5.05
Links 10+ 14.05 28.21 0.02 0.04 1.90 17.13371.35 0.19 0.57 3.82
Links 20+ 14.68 0.14 0.27 1.81 2.43 0.45 0.14 0.00 0.00 0.00
25 244.300 ( 3,24) 0.00 244.30 3.34 18.95 9.52 6.87 50.09 4.59 1.84 1.12 3.03 3.95
```

Links 10+ 9.15 22.83 0.01 0.03 1.26 8.35 68.20 1.04 1.18 2.77
Links 20+ 21.68 0.07 0.15 0.98 1.76 0.82 0.71 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 232.875 (1,24) 0.00 232.88 25.62 64.30 0.00 5.33 81.52 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 56.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 9
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 269.329 (1,24) 0.00 269.33 14.78 74.10 30.19 7.77 83.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 59.34 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 326.988 (1,24) 0.00 326.99 10.98 77.92 83.73 8.81 84.22 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 61.33 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 329.579 (1,24) 0.00 329.58 8.60 84.13 78.34 9.74 85.25 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 5.39 57.55 0.00 0.00 0.00
Links 20+ 0.00 0.28 0.28 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 112.042 (1,24) 0.00 112.04 8.23 14.82 12.01 3.16 41.45 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.16 31.95 0.00 0.00 0.00
Links 20+ 0.00 0.15 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 125.763 (1,24) 0.00 125.76 7.22 15.86 15.70 3.47 41.47 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 1.24 31.64 0.00 0.00 0.00
Links 20+ 0.00 2.34 6.60 0.21 0.00 0.00 0.00 0.00 0.00 0.00
7 424.279 (1,24) 0.00 424.28 7.41 84.41 41.53 10.07 70.72 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 15.60 48.42 0.00 0.00 0.54
Links 20+ 0.01 2.83 7.50135.22 0.01 0.00 0.00 0.00 0.00 0.00
8 262.058 (1,24) 0.00 262.06 6.12 36.90 21.27 8.03 49.84 53.89 0.00 0.00 0.00 0.00
Links 10+ 4.37 0.00 0.00 0.05 0.00 22.47 36.89 0.00 0.00 2.63
Links 20+ 0.89 0.82 1.90 14.53 1.46 0.00 0.00 0.00 0.00 0.00
9 239.392 (1,24) 0.00 239.39 5.15 19.87 13.03 5.18 37.06 72.65 0.00 0.00 0.00 0.00
Links 10+ 16.89 3.22 0.00 0.14 3.32 17.57 28.48 0.00 0.02 3.30
Links 20+ 4.19 0.37 0.83 5.64 2.50 0.00 0.00 0.00 0.00 0.00
10 251.463 (1,24) 0.00 251.46 4.23 11.79 8.18 3.30 27.68 88.39 0.00 0.00 0.00 0.00
Links 10+ 29.75 18.63 0.05 0.16 9.04 11.37 21.55 0.01 0.15 3.20
Links 20+ 7.99 0.20 0.41 2.73 2.59 0.05 0.00 0.00 0.00 0.00
11 698.325 (1,24) 0.00 698.33 3.42 7.42 5.30 2.22 21.21 50.38 1.11 0.00 0.00182.85
Links 10+ 93.25269.35 0.25 0.09 5.49 7.77 16.73 0.34 1.15 3.61
Links 20+ 20.42 0.10 0.21 1.42 3.23 0.84 0.15 0.00 0.00 0.00
12 749.817 (3,24) 0.00 749.82 0.00 0.00 0.00 0.00 0.00 44.27 16.97 4.52 13.60 68.30
Links 10+256.65344.89 0.63 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 744.796 (3,24) 0.00 744.80 0.00 0.00 0.00 0.00 0.00 51.27 10.87 3.62 10.58 33.37
Links 10+287.72335.68 0.64 0.10 10.94 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 465.542 (1,24) 0.00 465.54 6.10 28.10 18.65 9.05 51.72 12.42 0.00 0.00 0.00 0.00
Links 10+110.71 6.20 0.00 0.31 1.57 52.58 42.17 0.00 0.03 24.72
Links 20+ 58.59 0.38 0.82 5.81 35.61 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 10
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 245.500 (2,24) 0.00 245.50 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.03 0.00 0.00 0.00 0.00 0.00 10.65 16.00 2.94
Links 20+158.77 0.00 0.00 0.00 30.02 19.80 7.29 0.00 0.00 0.00
16 250.663 (2,24) 0.00 250.66 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.01 0.00 0.00 0.00 0.00 0.00 18.39 11.75 0.00
Links 20+171.78 0.00 0.00 0.00 0.00 36.24 12.50 0.00 0.00 0.00
17 329.433 (2,24) 0.00 329.43 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 34.70 0.00 0.00
Links 20+229.26 0.00 0.00 0.00 0.00 0.00 65.47 0.00 0.00 0.00
18 291.604 (2,24) 0.00 291.60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 49.50 0.00 0.00
Links 20+223.91 0.00 0.00 0.00 0.00 0.00 18.20 0.00 0.00 0.00
19 352.183 (2,24) 0.00 352.18 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.01 0.00 0.00 0.00 0.00 0.00 14.22 47.40 0.91
Links 20+272.51 0.00 0.00 0.00 0.02 8.68 8.43 0.00 0.00 0.00
20 348.808 (2,24) 0.00 348.81 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00
Links 10+ 0.00 0.04 0.00 0.00 0.00 0.00 0.00 8.75 13.70 37.80
Links 20+272.23 0.00 0.00 0.00 3.90 6.72 5.65 0.00 0.00 0.00
21 472.800 (1,24) 0.00 472.80 8.70 38.58 45.77 15.93117.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00144.27100.65 0.00 0.00 1.30
Links 20+ 0.00 0.06 0.08 0.46 0.00 0.00 0.00 0.00 0.00 0.00
22 647.008 (1,24) 0.00 647.01 11.86 43.41 42.48 19.47157.71 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.36371.72 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 609.050 (1,24) 0.00 609.05 15.98 39.67 5.95 18.37157.98 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00371.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 606.483 (1,24) 0.00 606.48 30.32 28.02 0.00 14.68158.76 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00374.70 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 151.792 (1,24) 0.00 151.79 23.45 0.87 0.00 0.38 59.81 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 67.28 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 11
TIME : 10:14: 2

```
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 354.794 ( 3,24) 0.00 354.79 8.73 88.88 17.43 13.07100.74 2.82 0.86 0.47 1.28 1.84
Links 10+ 5.34 10.15 0.01 0.02 0.73 6.85 78.05 0.99 0.48 1.55
Links 20+ 11.49 0.07 0.13 0.83 0.97 0.34 0.68 0.00 0.00 0.00
2 458.561 ( 3,24) 0.00 458.56 4.97 90.60116.57 13.39 93.81 4.55 1.10 0.56 1.54 2.40
Links 10+ 8.69 13.01 0.01 0.03 1.15 15.68 65.32 1.14 0.63 2.74
Links 20+ 15.62 0.15 0.28 1.82 1.60 0.45 0.78 0.00 0.00 0.00
3 461.144 ( 3,24) 0.00 461.14 3.67 89.09121.33 12.87 78.48 7.32 1.34 0.64 1.77 2.99
Links 10+ 13.69 16.47 0.02 0.05 1.76 30.60 43.42 1.25 0.76 4.51
Links 20+ 19.58 0.35 0.63 4.55 2.58 0.54 0.86 0.00 0.00 0.00
4 393.263 ( 3,24) 0.00 393.26 2.88 85.54 33.88 11.06 42.41 15.17 1.67 0.74 2.08 3.83
Links 10+ 24.68 22.36 0.02 0.12 3.09 35.22 25.31 1.34 0.88 7.25
Links 20+ 23.65 2.23 3.28 38.41 4.60 0.63 0.93 0.00 0.00 0.00
```


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5 193.226 ( 3,24) 0.00 193.23 2.80 19.93 15.71 4.35 26.99 9.93 1.60 0.73 2.01 3.52
Links 10+ 14.80 18.86 0.02 0.06 2.17 13.29 19.38 1.09 0.62 3.14
Links 20+ 15.65 2.15 3.19 7.77 2.25 0.46 0.77 0.00 0.00 0.00
6 186.837 ( 3,24) 0.00 186.84 2.44 15.97 10.75 3.53 21.47 14.15 1.87 0.81 2.23 4.14
Links 10+ 18.35 22.33 0.02 0.08 2.84 11.83 15.73 1.11 0.63 3.08
Links 20+ 15.93 1.27 4.11 8.43 2.46 0.48 0.79 0.00 0.00 0.00
7 368.910 ( 3,24) 0.00 368.91 2.48 59.87 14.84 7.13 26.79 39.87 1.99 0.83 2.34 4.66
Links 10+ 37.32 29.50 0.03 0.20 5.13 25.31 18.44 1.38 0.91 6.61
Links 20+ 24.22 1.23 3.84 46.36 5.98 0.68 0.97 0.00 0.00 0.00
8 327.764 ( 3,24) 0.00 327.76 2.04 13.41 7.25 3.17 17.23 94.88 2.67 0.99 2.81 6.47
Links 10+ 51.23 46.95 0.06 0.25 11.69 12.87 13.00 1.38 0.88 4.42
Links 20+ 22.18 0.28 0.66 4.86 4.42 0.70 0.98 0.00 0.00 0.00
9 322.825 ( 3,24) 0.00 322.83 1.72 6.78 4.38 1.82 12.53 99.62 3.84 1.21 3.47 9.83
Links 10+ 54.34 63.48 0.14 0.18 12.13 7.14 9.75 1.35 0.79 2.84
Links 20+ 18.83 0.13 0.28 1.89 2.73 0.65 0.98 0.00 0.00 0.00
10 315.888 ( 3,24) 0.00 315.89 1.41 3.97 2.74 1.12 9.28103.16 7.29 1.60 4.73 19.92
Links 10+ 47.72 74.18 0.19 0.07 4.36 4.06 7.28 1.28 0.64 1.74
Links 20+ 14.93 0.07 0.14 0.91 1.61 0.54 0.94 0.00 0.00 0.00
11 479.625 ( 3,24) 0.00 479.63 1.14 2.47 1.77 0.74 7.07 20.04 15.60 2.38 7.93156.14
Links 10+ 31.14201.56 0.08 0.03 1.83 2.59 5.58 1.50 0.63 1.25
Links 20+ 14.73 0.03 0.07 0.47 1.13 0.57 1.13 0.00 0.00 0.00
12 528.371 ( 3,24) 0.00 528.37 1.44 4.03 2.82 1.20 9.71 29.82 5.66 1.51 4.60 23.03
Links 10+189.93201.87 0.39 0.09 5.85 4.78 7.81 1.80 1.05 2.45
Links 20+ 22.76 0.06 0.12 0.86 2.44 0.95 1.33 0.00 0.00 0.00
13 533.961 ( 3,24) 0.00 533.96 1.68 5.92 4.02 1.77 12.35 29.39 3.63 1.21 3.57 11.26
Links 10+191.82184.10 0.22 0.25 16.61 7.93 9.99 1.97 1.44 4.29
Links 20+ 31.52 0.09 0.19 1.34 4.74 1.24 1.42 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 12
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 379.915 ( 3,24) 0.00 379.92 2.03 9.43 6.22 3.02 17.24 19.03 2.41 0.96 2.78 6.48
Links 10+ 96.61 66.69 0.06 0.24 9.66 17.53 14.06 2.25 2.25 12.25
Links 20+ 63.36 0.13 0.29 2.00 19.54 1.83 1.57 0.00 0.00 0.00
15 314.168 ( 3,24) 0.00 314.17 1.91 5.97 4.44 1.94 14.23 9.03 2.16 0.92 2.68 5.75
Links 10+ 28.02 32.40 0.03 0.07 3.31 9.67 12.18 3.55 6.33 13.40
Links 20+110.76 0.07 0.14 1.03 35.06 6.67 2.43 0.00 0.00 0.00
16 299.976 ( 3,24) 0.00 299.98 1.75 4.29 3.23 1.40 11.88 5.91 1.96 0.90 2.62 5.13
Links 10+ 15.70 24.23 0.02 0.04 1.87 5.96 10.32 6.20 12.99 6.47
Links 20+134.10 0.05 0.10 0.67 7.26 30.76 4.17 0.00 0.00 0.00
17 340.911 ( 3,24) 0.00 340.91 1.47 2.62 1.90 0.85 8.80 3.13 1.51 0.82 2.37 3.70
Links 10+ 7.08 16.42 0.01 0.02 0.87 2.90 7.60 23.74 3.71 1.99
Links 20+197.18 0.03 0.05 0.36 1.57 4.47 45.73 0.00 0.00 0.00
18 374.089 ( 3,24) 0.00 374.09 1.76 3.19 2.36 1.05 10.54 3.15 1.33 0.72 2.05 3.20
Links 10+ 7.27 15.22 0.01 0.02 0.91 3.64 9.43 40.59 7.78 2.66
Links 20+237.73 0.03 0.06 0.41 1.89 5.62 11.46 0.00 0.00 0.00
19 437.285 ( 3,24) 0.00 437.28 2.21 6.10 4.72 2.07 16.42 5.43 1.56 0.76 2.14 3.82
Links 10+ 14.77 20.03 0.02 0.04 1.76 9.62 15.04 4.75 27.03 23.97
Links 20+257.90 0.06 0.12 0.84 7.59 5.70 2.82 0.00 0.00 0.00
20 452.262 ( 3,24) 0.00 452.26 2.48 9.74 7.66 3.45 22.63 7.34 1.61 0.75 2.14 3.94
Links 10+ 22.48 22.56 0.02 0.07 2.46 21.40 20.49 2.92 4.64 45.44
Links 20+231.08 0.10 0.20 1.39 10.94 2.45 1.88 0.00 0.00 0.00
21 412.861 ( 3,24) 0.00 412.86 2.90 20.08 16.73 8.22 40.63 9.03 1.55 0.72 2.03 3.72
Links 10+ 28.66 22.28 0.02 0.10 2.68 99.13 33.56 2.02 1.90 28.71
Links 20+ 73.96 0.20 0.38 2.63 8.48 1.20 1.35 0.00 0.00 0.00
22 493.240 ( 3,24) 0.00 493.24 3.95 28.36 31.31 12.69 83.02 5.47 1.21 0.61 1.69 2.79
Links 10+ 12.93 15.53 0.01 0.04 1.51 61.63184.82 1.64 1.19 6.14
Links 20+ 29.63 0.14 0.26 1.83 2.98 0.77 1.10 0.00 0.00 0.00
23 481.608 ( 3,24) 0.00 481.61 5.33 28.97 24.40 13.07 94.04 3.71 1.01 0.53 1.47 2.27
Links 10+ 8.07 12.40 0.01 0.03 1.02 16.18239.03 1.43 0.86 3.09
Links 20+ 20.09 0.09 0.16 1.12 1.70 0.57 0.96 0.00 0.00 0.00
24 464.507 ( 3,24) 0.00 464.51 10.11 26.84 8.91 12.51101.76 2.36 0.78 0.44 1.21 1.70
Links 10+ 4.75 9.49 0.01 0.01 0.64 5.79258.38 1.14 0.55 1.51
Links 20+ 12.78 0.05 0.09 0.60 0.92 0.38 0.78 0.00 0.00 0.00
25 136.742 ( 3,24) 0.00 136.74 8.93 6.61 3.17 2.42 36.63 1.53 0.61 0.37 1.01 1.32
Links 10+ 3.05 7.62 0.00 0.01 0.42 2.78 45.16 1.14 0.44 0.93
Links 20+ 10.50 0.02 0.05 0.33 0.59 0.31 0.78 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 13
TIME : 10:14: 2
JOB: Site 1 Opt 1/2 2014 1B1A1403.DA3 RUN: BUTADIENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
```

```
'Site 1 Opt 1/2 2014 1B1A1404.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'FORMALDEHYDE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

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'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 6.860
2 1606 6.860
3 120 57 2.0 1606 60.83 1679 1 3
4 527 6.860
5 120 107 2.0 527 60.83 1700 1 3
6 1830 6.860
7 1830 6.860
8 1830 6.860
9 3568 6.860
10 3568 6.860
11 3548 6.860
12 120 65 2.0 3548 60.83 1665 1 3
13 20 6.860
14 20 6.860
15 120 115 2.0 20 60.83 1752 1 3
16 4130 6.860
17 4130 6.860
18 958 6.860
19 958 6.860
20 958 6.860
21 120 94 2.0 958 60.83 1523 1 3
22 45 6.860
23 85 6.860
24 120 109 2.0 85 60.83 1694 1 3
25 739 6.860
26 739 6.860
27 739 6.860
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1B1A1404.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 10:30:33
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 10:30:33
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 10:30:33
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*--
MAX+BKG * 2559.4 3005.8 2918.3 2800.9 1448.1 1364.1 2845.4 2140.7 1942.4 1985.7
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 2559.4 3005.8 2918.3 2800.9 1448.1 1364.1 2845.4 2140.7 1942.4 1985.7
WIND DIR* 70 40 25 285 10 0 280 280 340 285
JULIAN * 3 2 2 1 2 2 1 1 2 1
HOUR * 2 20 17 21 14 12 20 20 8 21
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*--
MAX+BKG * 3192.3 3409.9 3150.9 2159.6 2003.3 1933.5 2183.1 2293.3 2385.1 2599.3
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 3192.3 3409.9 3150.9 2159.6 2003.3 1933.5 2183.1 2293.3 2385.1 2599.3
WIND DIR* 255 255 250 250 240 230 220 165 150 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 15 14 14 12 10 8 21 18 9
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 2217.4 2737.3 2726.8 2978.1 913.9
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 2217.4 2737.3 2726.8 2978.1 913.9
WIND DIR* 95 250 250 100 105
JULIAN * 3 1 1 3 3
HOUR * 7 14 14 8 9
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 10:30:33
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
THE HIGHEST CONCENTRATION OF 3409.90 UG/M**3 OCCURRED AT RECEPTOR REC12.
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 5
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
11755.771 (2,24) C 0 676.804 (1,24) C 0 655.212 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22517.450*(2,24) C 0 780.733 (1,24) C 0 673.604 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
32479.492 (2,24) C 0 944.546 (1,24) C 0 570.558 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
41643.392 (2,24) C 0 952.675 (1,24) C 0 824.425 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
51140.675 (2,24) C 0 324.104 (1,24) C 0 213.692 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
61073.858 (2,24) C 0 364.125 (1,24) C 0 185.954 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
71511.713 (2,24) C 01222.412 (1,24) C 0 476.642 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
81610.025 (2,24) C 0 762.213 (1,24) C 0 487.112 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

91647.092 (2,24) C 0 697.654 (1,24) C 0 469.788 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
101549.358 (2,24) C 0 732.271 (1,24) C 0 473.958 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
112023.083 (3,24) C 02021.096 (1,24) C 0 118.429 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
122176.087 (1,24) C 02170.338*(3,24) C 0 241.200 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
132159.462 (1,24) C 02155.392 (3,24) C 0 320.354 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
141399.454 (3,24) C 01355.204 (1,24) C 0 547.404 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
151357.625 (1,24) C 0 705.679 (2,24) C 0 657.892 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
161401.004 (1,24) C 0 719.362 (2,24) C 0 472.129 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
171661.679 (1,24) C 0 945.050 (2,24) C 0 331.196 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
181916.784 (3,24) C 0 834.263 (2,24) C 0 466.321 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
192128.796 (3,24) C 01007.400 (2,24) C 0 628.375 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
202137.975 (3,24) C 0 997.446 (2,24) C 0 765.554 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
211544.729 (3,24) C 01374.425 (1,24) C 0 675.979 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
222119.154 (3,24) C 01883.162 (1,24) C 0 301.383 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
232188.033 (3,24) C 01775.417 (1,24) C 0 240.671 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
242111.183 (3,24) C 01768.408 (1,24) C 0 179.596 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 707.796 (3,24) C 0 440.467 (1,24) C 0 40.583 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 1029.262 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 6
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 1323.929 (3,24) C 0
3 1331.532 (3,24) C 0
4 1140.164 (3,24) C 0
5 559.490 (3,24) C 0
6 541.312 (3,24) C 0
7 1070.255 (3,24) C 0
8 953.117 (3,24) C 0
9 938.178 (3,24) C 0
10 918.529 (3,24) C 0
11 1387.536 (3,24) C 0
12 1529.208 (3,24) C 0
13 1545.070* (3,24) C 0
14 1100.688 (3,24) C 0
15 907.065 (3,24) C 0
16 864.165 (3,24) C 0
17 979.308 (3,24) C 0
18 1072.456 (3,24) C 0

19 1254.857 (3,24) C 0
20 1300.325 (3,24) C 0
21 1198.378 (3,24) C 0
22 1434.567 (3,24) C 0
23 1401.374 (3,24) C 0
24 1353.062 (3,24) C 0
25 396.282 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
11755.771 (2,24) 0.00 1755.77 1.69422.79 37.98 84.31546.74 1.36 0.20 0.10 0.47 1.08
Links 10+ 8.52 6.01 0.00 0.03 0.70 26.08497.24 8.65 4.00 8.15
Links 20+ 86.47 0.02 0.03 0.20 4.25 2.74 5.95 0.00 0.00 0.00
22517.450 (2,24) 0.00 2517.45 0.34423.20747.26 84.22526.77 3.23 0.33 0.14 0.65 1.86
Links 10+ 23.26 12.22 0.01 0.07 1.74107.39401.19 10.07 5.54 18.97
Links 20+127.77 0.07 0.13 0.53 9.67 3.88 6.93 0.00 0.00 0.00
32479.492 (2,24) 0.00 2479.49 0.13419.11735.15 81.67427.15 7.98 0.46 0.17 0.87 2.88
Links 10+ 56.74 24.30 0.03 0.20 4.08260.83202.95 11.08 6.72 37.33
Links 20+165.78 0.37 0.56 1.67 18.93 4.72 7.63 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 7
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
41643.392 (2,24) 0.00 1643.39 0.08404.95 66.05 68.60119.04 32.25 0.65 0.22 1.20 4.72
Links 10+153.89 55.39 0.05 0.72 11.69295.20 54.10 11.88 7.76 63.93
Links 20+201.18 6.60 8.60 21.16 39.67 5.57 8.26 0.00 0.00 0.00
51140.675 (2,24) 0.00 1140.68 0.50132.31 99.58 29.12112.03 58.53 2.11 0.57 2.65 10.50
Links 10+114.84 73.59 0.11 0.50 16.02116.89 77.14 9.66 5.42 27.78
Links 20+133.16 8.44 12.61 65.91 19.86 4.04 6.79 0.00 0.00 0.00
61073.858 (2,24) 0.00 1073.86 0.30 94.32 46.90 20.99 65.09 98.85 2.92 0.71 3.33 14.80
Links 10+150.75102.95 0.16 0.66 23.20100.78 45.75 9.85 5.57 27.20
Links 20+135.49 4.32 14.89 71.15 21.73 4.23 6.97 0.00 0.00 0.00
71511.713 (2,24) 0.00 1511.71 0.05269.06 8.50 33.30 27.39178.42 0.91 0.28 1.54 7.15
Links 10+274.69108.57 0.10 1.55 29.39177.63 20.30 12.14 8.05 56.77
Links 20+206.01 2.31 9.35 10.90 52.80 6.01 8.55 0.00 0.00 0.00
81610.025 (2,24) 0.00 1610.02 0.03 9.79 1.37 4.36 5.26476.32 1.53 0.40 2.26 13.87
Links 10+400.17255.19 0.33 2.11 95.66 47.54 6.19 12.23 7.79 31.24
Links 20+186.18 0.10 0.25 0.16 34.78 6.20 8.71 0.00 0.00 0.00
91647.092 (2,24) 0.00 1647.09 0.02 1.39 0.35 0.81 1.52481.19 3.02 0.59 3.47 32.89
Links 10+411.54386.85 1.15 1.24 93.77 11.28 2.30 11.93 6.93 15.33

Links 20+148.35 0.01 0.03 0.03 16.77 5.69 8.61 0.00 0.00 0.00
101549.358 (2,24) 0.00 1549.36 0.01 0.30 0.10 0.17 0.50484.87 9.67 0.97 6.48117.92
Links 10+333.48432.12 1.52 0.15 11.42 2.39 0.85 11.26 5.21 6.00
Links 20+104.39 0.00 0.00 0.01 6.60 4.67 8.29 0.00 0.00 0.00
112023.083 (3,24) 0.00 2023.08 0.00 0.00 0.00 0.00 0.00 28.67134.45 20.95 68.84824.22
Links 10+ 0.00945.96 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
122176.087 (1,24) 0.00 2176.09 12.74 35.56 23.97 10.59 82.57133.07 0.00 0.00 0.00 0.00
Links 10+860.41732.45 1.62 0.77 49.77 42.20 68.92 0.24 2.45 19.14
Links 20+ 71.28 0.53 1.10 7.32 18.10 1.23 0.06 0.00 0.00 0.00
132159.462 (1,24) 0.00 2159.46 14.86 52.33 34.21 15.61105.07108.65 0.00 0.00 0.00 0.00
Links 10+791.42609.13 0.08 1.89110.30 69.98 88.18 0.04 1.02 29.65
Links 20+ 83.18 0.80 1.69 11.41 29.75 0.23 0.00 0.00 0.00 0.00
141399.454 (3,24) 0.00 1399.45 0.00 0.60 0.00 0.01 0.00131.53 21.25 8.45 24.33 56.93
Links 10+527.05548.98 0.50 1.20 77.72 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.03 0.12 0.55 0.18 0.00 0.00 0.00 0.00 0.00
151357.625 (1,24) 0.00 1357.63 16.87 51.31 37.78 16.98121.02 13.43 0.00 0.00 0.00 0.00
Links 10+ 68.55 9.10 0.00 0.25 3.12 84.82107.62 0.03 8.78109.51
Links 20+491.97 0.58 1.12 7.74206.40 0.65 0.00 0.00 0.00 0.00
161401.004 (1,24) 0.00 1401.00 15.50 36.59 27.35 12.14100.98 9.12 0.00 0.00 0.00 0.00
Links 10+ 36.67 8.32 0.00 0.15 2.93 51.45 91.10 0.62 80.13 56.24
Links 20+652.18 0.36 0.71 4.80 53.72159.92 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 8
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
171661.679 (1,24) 0.00 1661.68 13.07 21.90 15.84 7.19 74.55 5.38 0.00 0.00 0.00 0.00
Links 10+ 17.19 6.16 0.00 0.07 2.04 23.85 67.08107.48 31.35 15.64
Links 20+****** 0.18 0.35 2.38 9.97 31.82197.25 0.00 0.00 0.00
181916.784 (3,24) 0.00 1916.78 0.00 4.04 1.80 1.07 1.90 25.79 11.78 6.40 18.11 28.27
Links 10+ 57.20128.25 0.11 0.14 7.25 7.86 0.50205.00 45.55 10.95
Links 20+****** 0.12 0.26 1.73 12.26 48.50 47.67 0.00 0.00 0.00
192128.796 (3,24) 0.00 2128.80 0.00 9.79 2.69 2.66 2.71 46.71 13.79 6.69 18.93 33.80
Links 10+124.20170.27 0.17 0.34 14.93 22.65 0.20 0.05 98.58159.58
Links 20+****** 0.30 0.66 4.38 64.10 24.80 0.10 0.00 0.00 0.00
202137.975 (3,24) 0.00 2137.98 0.00 20.05 3.76 5.96 3.67 64.43 14.20 6.66 18.83 34.77
Links 10+195.55191.79 0.20 0.59 20.86 60.85 0.05 0.00 0.68245.11
Links 20+****** 0.59 1.27 8.56 84.03 1.88 0.02 0.00 0.00 0.00
211544.729 (3,24) 0.00 1544.73 0.00 63.82 12.56 25.68 13.91 79.75 13.64 6.34 17.75 32.59
Links 10+252.11188.47 0.19 0.86 22.82450.38 0.00 0.00 0.05166.18
Links 20+117.12 1.60 3.15 21.04 54.54 0.18 0.00 0.00 0.00 0.00
222119.154 (3,24) 0.00 2119.15 0.00122.61145.90 54.79259.05 48.22 10.67 5.36 14.78 24.35
Links 10+112.23130.66 0.12 0.40 12.83535.31509.02 0.03 0.43 36.83
Links 20+ 56.21 1.20 2.29 15.60 19.63 0.58 0.04 0.00 0.00 0.00
232188.033 (3,24) 0.00 2188.03 0.00139.07190.70 61.33352.08 32.76 8.87 4.70 12.88 19.80
Links 10+ 70.10104.38 0.08 0.24 8.65140.83944.12 0.15 1.07 20.68
Links 20+ 50.48 0.75 1.43 9.55 12.20 1.01 0.14 0.00 0.00 0.00
242111.183 (3,24) 0.00 2111.18 0.00154.59 75.83 67.25415.39 20.83 6.89 3.90 10.58 14.86
Links 10+ 41.38 80.00 0.06 0.13 5.38 50.46****** 0.54 1.68 11.24
Links 20+ 41.60 0.41 0.78 5.14 7.16 1.32 0.41 0.00 0.00 0.00
25 707.796 (3,24) 0.00 707.80 9.82 55.83 26.98 20.23142.04 13.53 5.43 3.30 8.91 11.65

Links 10+ 26.93 64.73 0.05 0.08 3.57 24.60200.81 3.08 3.46 8.15
Links 20+ 61.51 0.21 0.43 2.76 5.20 2.42 2.09 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 676.804 (1,24) 0.00 676.80 75.41189.29 0.00 15.70231.21 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00165.20 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 9
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 780.733 (1,24) 0.00 780.73 43.55218.17 85.62 22.89235.80 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00174.71 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 944.546 (1,24) 0.00 944.55 32.33229.43237.46 25.93238.84 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02180.54 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 952.675 (1,24) 0.00 952.67 25.32247.69222.17 28.69241.76 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 15.87169.47 0.00 0.00 0.01
Links 20+ 0.00 0.84 0.86 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 324.104 (1,24) 0.00 324.10 24.24 43.63 34.09 9.30117.58 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.47 94.04 0.00 0.00 0.00
Links 20+ 0.00 0.45 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 364.125 (1,24) 0.00 364.13 21.27 46.71 44.50 10.21117.60 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 3.66 93.15 0.00 0.00 0.02
Links 20+ 0.01 6.91 19.48 0.60 0.00 0.00 0.00 0.00 0.00 0.00
71222.412 (1,24) 0.00 1222.41 21.80248.53117.78 29.68200.56 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 45.91142.56 0.00 0.00 1.58
Links 20+ 0.04 8.33 22.07383.46 0.04 0.00 0.00 0.00 0.00 0.00
8 762.213 (1,24) 0.00 762.21 18.01108.66 60.35 23.62141.34158.68 0.00 0.00 0.00 0.00
Links 10+ 12.85 0.00 0.00 0.14 0.00 66.15108.64 0.00 0.00 7.75
Links 20+ 2.51 2.41 5.59 41.21 4.30 0.00 0.00 0.00 0.00 0.00
9 697.654 (1,24) 0.00 697.65 15.14 58.51 36.95 15.23105.11213.90 0.00 0.00 0.00 0.00
Links 10+ 49.73 9.12 0.00 0.40 9.41 51.72 83.87 0.00 0.05 9.71
Links 20+ 11.86 1.11 2.45 15.99 7.40 0.00 0.00 0.00 0.00 0.00
10 732.271 (1,24) 0.00 732.27 12.45 34.72 23.21 9.72 78.50260.23 0.00 0.00 0.00 0.00
Links 10+ 87.58 52.84 0.15 0.45 25.62 33.48 63.43 0.04 0.43 9.42
Links 20+ 22.67 0.57 1.22 7.75 7.63 0.16 0.01 0.00 0.00 0.00
112021.096 (1,24) 0.00 2021.10 10.10 21.87 15.01 6.52 60.16148.33 3.27 0.00 0.00538.34
Links 10+274.53763.86 0.73 0.27 15.58 22.87 49.27 1.00 3.39 10.63
Links 20+ 57.93 0.31 0.63 4.05 9.52 2.49 0.44 0.00 0.00 0.00
122170.338 (3,24) 0.00 2170.34 0.00 0.00 0.00 0.00 0.00130.38 49.96 13.32 40.03201.10
Links 10+755.63978.03 1.89 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
132155.392 (3,24) 0.00 2155.39 0.00 0.00 0.00 0.00 0.00150.99 32.03 10.65 31.17 98.26
Links 10+847.13951.97 1.87 0.32 31.02 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
141355.204 (1,24) 0.00 1355.20 17.97 82.75 52.90 26.63146.67 36.58 0.00 0.00 0.00 0.00
Links 10+325.99 17.55 0.00 0.89 4.48154.77124.14 0.00 0.08 72.79
Links 20+166.15 1.15 2.40 16.46104.85 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 10
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 705.679 (2,24) 0.00 705.68 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.02 0.00
Links 10+ 0.00 0.07 0.00 0.00 0.00 0.00 0.00 31.36 47.11 8.66
Links 20+450.30 0.00 0.00 0.00 88.39 58.29 21.49 0.00 0.00 0.00
16 719.362 (2,24) 0.00 719.36 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.03 0.00 0.00 0.00 0.00 0.00 54.14 34.59 0.00
Links 20+487.15 0.00 0.00 0.00 0.00106.71 36.74 0.00 0.00 0.00
17 945.050 (2,24) 0.00 945.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00102.16 0.00 0.00
Links 20+650.17 0.00 0.00 0.00 0.00 0.00192.71 0.00 0.00 0.00
18 834.263 (2,24) 0.00 834.26 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00145.71 0.00 0.00
Links 20+635.00 0.00 0.00 0.00 0.00 0.00 53.55 0.00 0.00 0.00
191007.400 (2,24) 0.00 1007.40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.03 0.00 0.00 0.00 0.00 0.00 41.89139.57 2.67
Links 20+772.82 0.00 0.00 0.00 0.07 25.53 24.82 0.00 0.00 0.00
20 997.446 (2,24) 0.00 997.45 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.01
Links 10+ 0.00 0.11 0.00 0.00 0.00 0.00 0.00 25.75 40.36111.26
Links 20+772.03 0.00 0.00 0.00 11.47 19.78 16.65 0.00 0.00 0.00
211374.425 (1,24) 0.00 1374.43 25.64113.59129.81 46.91331.80 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00424.80296.31 0.00 0.00 3.86
Links 20+ 0.00 0.17 0.24 1.31 0.00 0.00 0.00 0.00 0.00 0.00
221883.162 (1,24) 0.00 1883.16 34.90127.81120.47 57.30447.22 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 1.08****** 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
231775.417 (1,24) 0.00 1775.42 47.05116.80 16.86 54.11448.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00****** 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
241768.408 (1,24) 0.00 1768.41 89.28 82.49 0.00 43.22450.22 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00****** 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 440.467 (1,24) 0.00 440.47 69.07 2.55 0.00 1.14169.64 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00198.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 11
TIME : 10:30:34

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JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
11029.262 ( 3,24) 0.00 1029.26 25.70261.68 49.42 38.50285.71 8.31 2.53 1.39 3.78 5.42
Links 10+ 15.71 28.78 0.02 0.05 2.07 20.16229.77 2.91 1.42 4.56
Links 20+ 32.57 0.19 0.38 2.37 2.86 1.00 2.01 0.00 0.00 0.00
21323.929 ( 3,24) 0.00 1323.93 14.63266.72330.58 39.42266.05 13.41 3.23 1.66 4.53 7.06
Links 10+ 25.57 36.89 0.03 0.09 3.26 46.18192.31 3.36 1.86 8.07
Links 20+ 44.30 0.43 0.81 5.14 4.71 1.32 2.32 0.00 0.00 0.00
31331.532 ( 3,24) 0.00 1331.53 10.82262.31344.11 37.89222.55 21.57 3.94 1.90 5.23 8.80
Links 10+ 40.30 46.71 0.05 0.16 5.01 90.09127.83 3.69 2.24 13.29
Links 20+ 55.53 1.02 1.87 12.92 7.60 1.58 2.55 0.00 0.00 0.00
41140.164 ( 3,24) 0.00 1140.16 8.47251.82 96.07 32.59120.27 44.67 4.92 2.20 6.12 11.27
Links 10+ 72.67 63.41 0.07 0.33 8.75103.70 74.52 3.96 2.59 21.33
Links 20+ 67.06 6.58 9.70108.92 13.56 1.86 2.75 0.00 0.00 0.00
Page 5
1B1A1404.OUT
5 559.490 ( 3,24) 0.00 559.49 8.24 58.68 44.56 12.81 76.53 29.25 4.72 2.15 5.91 10.35
Links 10+ 43.57 53.47 0.06 0.18 6.17 39.12 57.06 3.22 1.81 9.26
Links 20+ 44.39 6.32 9.39 22.04 6.63 1.35 2.26 0.00 0.00 0.00
6 541.312 ( 3,24) 0.00 541.31 7.19 47.01 30.47 10.40 60.89 41.67 5.52 2.38 6.57 12.21
Links 10+ 54.05 63.32 0.07 0.22 8.07 34.81 46.30 3.28 1.86 9.07
Links 20+ 45.17 3.75 12.12 23.92 7.24 1.41 2.32 0.00 0.00 0.00
71070.255 ( 3,24) 0.00 1070.26 7.28176.27 42.10 20.99 75.98117.38 5.87 2.46 6.89 13.72
Links 10+109.89 83.66 0.10 0.58 14.56 74.52 54.29 4.05 2.68 19.45
Links 20+ 68.68 3.63 11.31131.47 17.61 2.00 2.85 0.00 0.00 0.00
8 953.117 ( 3,24) 0.00 953.12 6.01 39.48 20.57 9.33 48.87279.36 7.85 2.93 8.29 19.04
Links 10+150.83133.14 0.18 0.77 33.16 37.90 38.28 4.08 2.60 13.00
Links 20+ 62.90 0.84 1.94 13.79 13.03 2.07 2.90 0.00 0.00 0.00
9 938.178 ( 3,24) 0.00 938.18 5.05 19.97 12.43 5.35 35.54293.31 11.32 3.56 10.21 28.94
Links 10+160.00179.99 0.42 0.55 34.39 21.00 28.72 3.98 2.32 8.35
Links 20+ 53.40 0.38 0.83 5.34 8.06 1.90 2.87 0.00 0.00 0.00
10 918.529 ( 3,24) 0.00 918.53 4.15 11.67 7.77 3.29 26.33303.73 21.47 4.73 13.94 58.66
Links 10+140.49210.37 0.56 0.20 12.35 11.96 21.43 3.77 1.88 5.14
Links 20+ 42.35 0.19 0.41 2.58 4.74 1.61 2.77 0.00 0.00 0.00
111387.536 ( 3,24) 0.00 1387.54 3.37 7.29 5.00 2.17 20.06 59.00 45.91 7.02 23.35459.71
Links 10+ 91.69571.61 0.24 0.09 5.19 7.63 16.43 4.41 1.86 3.69
Links 20+ 41.78 0.10 0.21 1.35 3.35 1.69 3.34 0.00 0.00 0.00
121529.208 ( 3,24) 0.00 1529.21 4.25 11.85 7.99 3.53 27.53 87.82 16.66 4.46 13.55 67.82
Links 10+559.21572.45 1.17 0.26 16.59 14.07 22.98 5.30 3.08 7.21
Links 20+ 64.53 0.18 0.37 2.44 7.19 2.80 3.93 0.00 0.00 0.00
131545.070 ( 3,24) 0.00 1545.07 4.95 17.44 11.40 5.20 35.02 86.55 10.69 3.57 10.53 33.15
Links 10+564.77522.08 0.65 0.73 47.11 23.34 29.41 5.78 4.25 12.64
Links 20+ 89.37 0.27 0.56 3.80 13.97 3.65 4.17 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 12
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
141100.688 ( 3,24) 0.00 1100.69 5.99 27.78 17.63 8.88 48.89 56.04 7.09 2.83 8.18 19.07
Links 10+284.46189.13 0.17 0.70 27.40 51.59 41.39 6.64 6.63 36.08
Links 20+179.68 0.39 0.84 5.67 57.53 5.38 4.64 0.00 0.00 0.00
15 907.065 ( 3,24) 0.00 907.07 5.62 17.58 12.61 5.72 40.35 26.61 6.35 2.72 7.91 16.93
Links 10+ 82.50 91.88 0.10 0.21 9.37 28.47 35.87 10.46 18.63 39.47
Links 20+314.10 0.22 0.43 2.93103.21 19.65 7.16 0.00 0.00 0.00
16 864.165 ( 3,24) 0.00 864.17 5.17 12.65 9.16 4.13 33.69 17.41 5.76 2.65 7.71 15.12
Links 10+ 46.23 68.70 0.07 0.12 5.31 17.55 30.37 18.25 38.24 19.06
Links 20+380.29 0.14 0.28 1.90 21.37 90.57 12.25 0.00 0.00 0.00
17 979.308 ( 3,24) 0.00 979.31 4.36 7.72 5.41 2.49 24.97 9.22 4.44 2.42 6.97 10.90
Links 10+ 20.86 46.55 0.04 0.05 2.46 8.55 22.38 69.89 10.93 5.86
Links 20+559.18 0.07 0.15 1.02 4.62 13.17134.63 0.00 0.00 0.00
181072.456 ( 3,24) 0.00 1072.46 5.17 9.40 6.69 3.10 29.89 9.27 3.93 2.13 6.04 9.42
Links 10+ 21.42 43.15 0.04 0.06 2.58 10.72 27.76119.50 22.91 7.83
Links 20+674.17 0.09 0.18 1.17 5.56 16.55 33.74 0.00 0.00 0.00
191254.857 ( 3,24) 0.00 1254.86 6.51 17.96 13.37 6.12 46.58 15.99 4.60 2.23 6.31 11.27
Links 10+ 43.48 56.80 0.06 0.12 4.99 28.32 44.27 13.98 79.59 70.56
Links 20+731.38 0.18 0.36 2.39 22.36 16.78 8.31 0.00 0.00 0.00
201300.325 ( 3,24) 0.00 1300.33 7.31 28.67 21.73 10.15 64.20 21.62 4.73 2.22 6.29 11.59
Links 10+ 66.16 63.97 0.07 0.20 6.95 63.01 60.33 8.58 13.68133.76
Links 20+655.32 0.30 0.59 3.94 32.18 7.22 5.56 0.00 0.00 0.00
211198.378 ( 3,24) 0.00 1198.38 8.55 59.13 47.46 24.20115.24 26.58 4.55 2.12 5.96 10.94
Links 10+ 84.39 63.18 0.06 0.29 7.61291.86 98.79 5.95 5.59 84.52
Links 20+209.75 0.59 1.13 7.45 24.97 3.54 3.98 0.00 0.00 0.00
221434.567 ( 3,24) 0.00 1434.57 11.63 83.47 88.79 37.36235.43 16.09 3.57 1.80 4.98 8.21
Links 10+ 38.08 44.04 0.04 0.13 4.29181.45544.14 4.84 3.49 18.08
Links 20+ 84.03 0.40 0.76 5.20 8.76 2.26 3.25 0.00 0.00 0.00
231401.374 ( 3,24) 0.00 1401.37 15.68 85.29 69.18 38.48266.70 10.93 2.97 1.58 4.33 6.68
Links 10+ 23.74 35.16 0.03 0.08 2.89 47.64703.75 4.20 2.53 9.11
Links 20+ 56.99 0.25 0.48 3.18 5.01 1.68 2.83 0.00 0.00 0.00
241353.062 ( 3,24) 0.00 1353.06 29.76 79.03 25.28 36.83288.57 6.96 2.30 1.31 3.56 5.00
Links 10+ 13.99 26.92 0.02 0.04 1.80 17.07760.74 3.36 1.61 4.44
Links 20+ 36.25 0.14 0.26 1.71 2.71 1.11 2.30 0.00 0.00 0.00
25 396.282 ( 3,24) 0.00 396.28 26.30 19.46 8.99 7.12103.89 4.51 1.81 1.10 2.97 3.88
Links 10+ 8.98 21.59 0.02 0.03 1.19 8.20132.96 3.38 1.30 2.73
Links 20+ 29.78 0.07 0.14 0.92 1.74 0.91 2.29 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 13
TIME : 10:30:34
JOB: Site 1 Opt 1/2 2014 1B1A1404.DA3 RUN: FORMALDEHYDE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
Page 6
'Site 1 Opt 1/2 2014 1B1A1405.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
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99999 99 99999 99
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'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
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1 1 1 1 1 1 1
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1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
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14 1
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15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 0.679
2 1606 0.679
3 120 57 2.0 1606 7.841 1679 1 3
4 527 0.679
5 120 107 2.0 527 7.841 1700 1 3
6 1830 0.679
7 1830 0.679
8 1830 0.679
9 3568 0.679
10 3568 0.679
11 3548 0.679
12 120 65 2.0 3548 7.841 1665 1 3
13 20 0.679
14 20 0.679
15 120 115 2.0 20 7.841 1752 1 3
16 4130 0.679
17 4130 0.679
18 958 0.679
19 958 0.679
20 958 0.679
21 120 94 2.0 958 7.841 1523 1 3
22 45 0.679
23 85 0.679
24 120 109 2.0 85 7.841 1694 1 3
25 739 0.679
26 739 0.679
27 739 0.679
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DATE : 3/ 5/10 PAGE: 1
TIME : 19:46:29
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*--*---------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 2
TIME : 19:46:29
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*--*---------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
----
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0

21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 3
TIME : 19:46:29
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
Receptor Data
----
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results

Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED

```
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 288.3 349.8 339.6 319.7 163.0 153.2 325.5 233.9 220.2 213.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 288.3 349.8 339.6 319.7 163.0 153.2 325.5 233.9 220.2 213.1
WIND DIR* 70 40 20 285 10 0 275 275 340 285
JULIAN * 3 2 2 1 2 2 1 1 2 1
HOUR * 2 20 16 21 14 12 19 19 8 21
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 359.3 381.9 349.7 233.2 229.2 224.4 258.3 274.6 284.8 308.8
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 359.3 381.9 349.7 233.2 229.2 224.4 258.3 274.6 284.8 308.8
WIND DIR* 255 255 250 250 240 230 220 165 150 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 15 14 14 12 10 8 21 18 9
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 244.5 292.2 290.9 319.7 101.8
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 244.5 292.2 290.9 319.7 101.8
WIND DIR* 95 250 250 100 105
JULIAN * 3 1 1 3 3
HOUR * 7 14 14 8 9
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 4
TIME : 19:46:29
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
THE HIGHEST CONCENTRATION OF 381.90 UG/M**3 OCCURRED AT RECEPTOR REC12.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 5
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 194.033 ( 2,24) C 0 73.908 ( 1,24) C 0 73.604 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 291.500*( 2,24) C 0 86.892 ( 1,24) C 0 76.254 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 286.000 ( 2,24) C 0 107.725 ( 1,24) C 0 63.196 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 176.842 ( 2,24) C 0 108.154 ( 1,24) C 0 95.200 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 127.871 ( 2,24) C 0 36.621 ( 1,24) C 0 23.812 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 119.521 ( 2,24) C 0 40.888 ( 1,24) C 0 21.029 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 161.283 ( 2,24) C 0 141.971 ( 1,24) C 0 51.867 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 175.571 ( 2,24) C 0 82.750 ( 1,24) C 0 52.633 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
```


```
9 181.850 ( 2,24) C 0 74.671 ( 1,24) C 0 50.804 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 169.700 ( 2,24) C 0 78.771 ( 1,24) C 0 51.267 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 228.525 ( 3,24) C 0 227.454 ( 1,24) C 0 13.863 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 244.279 ( 1,24) C 0 244.054*( 3,24) C 0 27.721 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 242.746 ( 3,24) C 0 242.225 ( 1,24) C 0 37.379 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 157.258 ( 3,24) C 0 146.204 ( 1,24) C 0 65.329 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 154.404 ( 1,24) C 0 83.304 ( 2,24) C 0 73.833 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 162.450 ( 1,24) C 0 85.775 ( 2,24) C 0 53.087 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 197.712 ( 1,24) C 0 112.979 ( 2,24) C 0 37.421 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 231.108 ( 3,24) C 0 101.554 ( 2,24) C 0 53.667 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 255.554 ( 3,24) C 0 122.817 ( 2,24) C 0 70.917 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 252.975 ( 3,24) C 0 121.804 ( 2,24) C 0 84.558 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 164.158 ( 3,24) C 0 149.875 ( 1,24) C 0 82.242 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 228.271 ( 3,24) C 0 203.371 ( 1,24) C 0 35.737 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 237.954 ( 3,24) C 0 189.612 ( 1,24) C 0 27.433 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 227.575 ( 3,24) C 0 188.500 ( 1,24) C 0 19.796 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 79.033 ( 3,24) C 0 48.683 ( 1,24) C 0 4.829 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 113.849 ( 3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 6
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 151.549 ( 3,24) C 0
3 152.307 ( 3,24) C 0
4 126.732 ( 3,24) C 0
5 62.768 ( 3,24) C 0
6 60.479 ( 3,24) C 0
7 118.374 ( 3,24) C 0
8 103.651 ( 3,24) C 0
9 102.442 ( 3,24) C 0
10 99.912 ( 3,24) C 0
11 156.614 ( 3,24) C 0
12 172.018 ( 3,24) C 0
13 174.117* ( 3,24) C 0
14 122.931 ( 3,24) C 0
15 103.847 ( 3,24) C 0
16 100.437 ( 3,24) C 0
17 116.037 ( 3,24) C 0
18 128.776 ( 3,24) C 0
19 149.762 ( 3,24) C 0
20 153.112 ( 3,24) C 0
```

21 132.092 (3,24) C 0
22 155.793 (3,24) C 0
23 151.667 (3,24) C 0
24 145.290 (3,24) C 0
25 44.182 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 194.033 (2,24) 0.00 194.03 0.17 41.85 4.90 8.34 70.46 0.13 0.02 0.01 0.05 0.11
Links 10+ 0.84 0.77 0.00 0.00 0.09 2.58 49.21 0.85 0.39 0.81
Links 20+ 11.15 0.00 0.00 0.02 0.42 0.27 0.60 0.00 0.00 0.00
2 291.500 (2,24) 0.00 291.50 0.03 41.88 96.30 8.33 67.89 0.32 0.03 0.01 0.06 0.18
Links 10+ 2.30 1.57 0.00 0.00 0.23 10.63 39.72 1.00 0.54 1.87
Links 20+ 16.47 0.01 0.01 0.06 0.95 0.38 0.69 0.00 0.00 0.00
3 286.000 (2,24) 0.00 286.00 0.01 41.47 94.75 8.09 55.06 0.79 0.05 0.02 0.09 0.28
Links 10+ 5.61 3.13 0.00 0.02 0.53 25.82 20.08 1.09 0.66 3.70
Links 20+ 21.36 0.04 0.05 0.21 1.88 0.47 0.75 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 7
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 176.842 (2,24) 0.00 176.84 0.00 40.09 8.51 6.79 15.35 3.19 0.06 0.02 0.12 0.46
Links 10+ 15.23 7.13 0.00 0.07 1.51 29.21 5.35 1.18 0.76 6.32
Links 20+ 25.92 0.66 0.86 2.73 3.93 0.56 0.82 0.00 0.00 0.00
5 127.871 (2,24) 0.00 127.87 0.05 13.09 12.83 2.88 14.45 5.80 0.21 0.05 0.27 1.04
Links 10+ 11.37 9.48 0.01 0.05 2.07 11.57 7.64 0.95 0.54 2.75
Links 20+ 17.16 0.84 1.25 8.49 1.98 0.40 0.67 0.00 0.00 0.00
6 119.521 (2,24) 0.00 119.52 0.03 9.32 6.04 2.08 8.39 9.79 0.28 0.07 0.33 1.47
Links 10+ 14.92 13.27 0.02 0.05 2.99 9.97 4.53 0.97 0.55 2.69
Links 20+ 17.45 0.42 1.46 9.17 2.15 0.42 0.70 0.00 0.00 0.00
7 161.283 (2,24) 0.00 161.28 0.00 26.63 1.10 3.30 3.53 17.66 0.09 0.03 0.15 0.71
Links 10+ 27.19 13.99 0.01 0.14 3.79 17.58 2.01 1.20 0.79 5.62
Links 20+ 26.55 0.22 0.92 1.40 5.22 0.59 0.84 0.00 0.00 0.00
8 175.571 (2,24) 0.00 175.57 0.00 0.96 0.17 0.43 0.68 47.15 0.15 0.04 0.22 1.38
Links 10+ 39.61 32.88 0.03 0.19 12.34 4.71 0.61 1.20 0.77 3.08
Links 20+ 23.99 0.01 0.03 0.02 3.44 0.62 0.86 0.00 0.00 0.00
9 181.850 (2,24) 0.00 181.85 0.00 0.14 0.05 0.08 0.20 47.63 0.29 0.06 0.34 3.25
Links 10+ 40.73 49.87 0.10 0.12 12.08 1.12 0.22 1.17 0.68 1.52

Links 20+ 19.12 0.00 0.00 0.00 1.65 0.56 0.85 0.00 0.00 0.00
10 169.700 (2,24) 0.00 169.70 0.00 0.03 0.01 0.02 0.06 47.98 0.96 0.10 0.64 11.67
Links 10+ 33.00 55.69 0.14 0.01 1.47 0.23 0.09 1.11 0.52 0.59
Links 20+ 13.45 0.00 0.00 0.00 0.65 0.46 0.81 0.00 0.00 0.00
11 228.525 (3,24) 0.00 228.52 0.00 0.00 0.00 0.00 0.00 2.84 13.31 2.07 6.82 81.58
Links 10+ 0.00121.91 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 244.279 (1,24) 0.00 244.28 1.27 3.53 3.09 1.05 10.64 13.16 0.00 0.00 0.00 0.00
Links 10+ 85.16 94.40 0.15 0.08 6.40 4.19 6.82 0.03 0.24 1.89
Links 20+ 9.18 0.05 0.10 0.94 1.79 0.12 0.00 0.00 0.00 0.00
13 242.746 (3,24) 0.00 242.75 0.00 0.00 0.00 0.00 0.00 14.95 3.18 1.05 3.09 9.72
Links 10+ 83.85122.70 0.18 0.03 4.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 157.258 (3,24) 0.00 157.26 0.00 0.06 0.00 0.00 0.00 13.01 2.10 0.84 2.42 5.63
Links 10+ 52.16 70.75 0.04 0.11 10.02 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.01 0.07 0.02 0.00 0.00 0.00 0.00 0.00
15 154.404 (1,24) 0.00 154.40 1.68 5.08 4.87 1.67 15.60 1.32 0.00 0.00 0.00 0.00
Links 10+ 6.78 1.17 0.00 0.02 0.40 8.40 10.64 0.00 0.86 10.83
Links 20+ 63.42 0.06 0.11 1.00 20.43 0.07 0.00 0.00 0.00 0.00
16 162.450 (1,24) 0.00 162.45 1.53 3.62 3.52 1.20 13.02 0.90 0.00 0.00 0.00 0.00
Links 10+ 3.63 1.07 0.00 0.01 0.38 5.09 9.01 0.06 7.94 5.56
Links 20+ 84.05 0.03 0.07 0.62 5.32 15.82 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 8
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 197.712 (1,24) 0.00 197.71 1.29 2.17 2.05 0.71 9.60 0.53 0.00 0.00 0.00 0.00
Links 10+ 1.70 0.80 0.00 0.00 0.26 2.35 6.64 10.64 3.10 1.54
Links 20+130.30 0.02 0.04 0.31 0.99 3.15 19.52 0.00 0.00 0.00
18 231.108 (3,24) 0.00 231.11 0.00 0.40 0.23 0.10 0.25 2.55 1.16 0.64 1.79 2.80
Links 10+ 5.67 16.52 0.00 0.01 0.93 0.78 0.05 20.29 4.51 1.09
Links 20+160.37 0.01 0.03 0.23 1.21 4.80 4.72 0.00 0.00 0.00
19 255.554 (3,24) 0.00 255.55 0.00 0.97 0.35 0.26 0.35 4.62 1.37 0.66 1.87 3.34
Links 10+ 12.30 21.94 0.01 0.04 1.92 2.24 0.02 0.00 9.76 15.80
Links 20+168.28 0.03 0.07 0.56 6.34 2.45 0.01 0.00 0.00 0.00
20 252.975 (3,24) 0.00 252.98 0.00 1.98 0.49 0.60 0.47 6.38 1.41 0.65 1.86 3.44
Links 10+ 19.36 24.73 0.02 0.05 2.68 6.02 0.00 0.00 0.07 24.26
Links 20+148.68 0.06 0.13 1.10 8.32 0.19 0.00 0.00 0.00 0.00
21 164.158 (3,24) 0.00 164.16 0.00 6.31 1.62 2.55 1.80 7.89 1.36 0.62 1.76 3.23
Links 10+ 24.95 24.30 0.02 0.08 2.94 44.59 0.00 0.00 0.00 16.45
Links 20+ 15.09 0.16 0.31 2.71 5.40 0.02 0.00 0.00 0.00 0.00
22 228.271 (3,24) 0.00 228.27 0.00 12.14 18.82 5.42 33.39 4.77 1.05 0.55 1.46 2.41
Links 10+ 11.10 16.84 0.00 0.03 1.65 52.97 50.37 0.00 0.04 3.64
Links 20+ 7.24 0.12 0.23 2.00 1.94 0.06 0.00 0.00 0.00 0.00
23 237.954 (3,24) 0.00 237.95 0.00 13.77 24.58 6.07 45.38 3.24 0.88 0.46 1.28 1.97
Links 10+ 6.94 13.45 0.00 0.02 1.11 13.94 93.45 0.02 0.11 2.04
Links 20+ 6.50 0.07 0.14 1.23 1.20 0.10 0.01 0.00 0.00 0.00
24 227.575 (3,24) 0.00 227.58 0.00 15.30 9.78 6.67 53.53 2.06 0.68 0.39 1.05 1.46
Links 10+ 4.09 10.32 0.00 0.00 0.68 4.99108.22 0.05 0.17 1.11
Links 20+ 5.37 0.04 0.08 0.66 0.70 0.14 0.04 0.00 0.00 0.00
25 79.033 (3,24) 0.00 79.03 0.97 5.52 3.48 2.00 18.31 1.34 0.54 0.32 0.88 1.15
Links 10+ 2.66 8.34 0.00 0.00 0.46 2.43 19.87 0.30 0.35 0.81
Links 20+ 7.92 0.02 0.04 0.35 0.51 0.24 0.21 0.00 0.00 0.00

SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 73.908 (1,24) 0.00 73.91 7.47 18.74 0.00 1.55 29.80 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 16.35 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 9
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 86.892 (1,24) 0.00 86.89 4.31 21.60 11.03 2.26 30.39 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 17.30 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 107.725 (1,24) 0.00 107.73 3.20 22.71 30.61 2.57 30.78 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 17.87 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 108.154 (1,24) 0.00 108.15 2.50 24.51 28.63 2.84 31.16 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 1.56 16.77 0.00 0.00 0.00
Links 20+ 0.00 0.08 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 36.621 (1,24) 0.00 36.62 2.40 4.33 4.39 0.93 15.14 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 9.31 0.00 0.00 0.00
Links 20+ 0.00 0.05 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 40.888 (1,24) 0.00 40.89 2.11 4.62 5.74 1.01 15.16 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.36 9.21 0.00 0.00 0.00
Links 20+ 0.00 0.68 1.92 0.07 0.00 0.00 0.00 0.00 0.00 0.00
7 141.971 (1,24) 0.00 141.97 2.16 24.60 15.18 2.94 25.85 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 4.54 14.10 0.00 0.00 0.15
Links 20+ 0.00 0.84 2.19 49.42 0.00 0.00 0.00 0.00 0.00 0.00
8 82.750 (1,24) 0.00 82.75 1.78 10.75 7.78 2.33 18.22 15.70 0.00 0.00 0.00 0.00
Links 10+ 1.27 0.00 0.00 0.01 0.00 6.55 10.75 0.00 0.00 0.77
Links 20+ 0.33 0.24 0.54 5.31 0.43 0.00 0.00 0.00 0.00 0.00
9 74.671 (1,24) 0.00 74.67 1.50 5.79 4.77 1.51 13.55 21.17 0.00 0.00 0.00 0.00
Links 10+ 4.92 1.18 0.00 0.04 1.21 5.12 8.30 0.00 0.00 0.96
Links 20+ 1.52 0.10 0.24 2.06 0.74 0.00 0.00 0.00 0.00 0.00
10 78.771 (1,24) 0.00 78.77 1.23 3.44 2.99 0.97 10.12 25.75 0.00 0.00 0.00 0.00
Links 10+ 8.66 6.81 0.01 0.05 3.30 3.32 6.28 0.00 0.04 0.94
Links 20+ 2.92 0.05 0.11 1.00 0.75 0.01 0.00 0.00 0.00 0.00
11 227.454 (1,24) 0.00 227.45 1.00 2.17 1.93 0.64 7.75 14.68 0.32 0.00 0.00 53.27
Links 10+ 27.18 98.45 0.07 0.03 2.01 2.27 4.87 0.10 0.33 1.06
Links 20+ 7.47 0.03 0.06 0.52 0.94 0.25 0.04 0.00 0.00 0.00
12 244.054 (3,24) 0.00 244.05 0.00 0.00 0.00 0.00 0.00 12.90 4.94 1.32 3.97 19.90
Links 10+ 74.79126.05 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 242.225 (1,24) 0.00 242.23 1.47 5.17 4.40 1.54 13.53 10.75 0.00 0.00 0.00 0.00
Links 10+ 78.34 78.51 0.01 0.18 14.22 6.92 8.73 0.00 0.10 2.93
Links 20+ 10.72 0.08 0.16 1.47 2.95 0.02 0.00 0.00 0.00 0.00
14 146.204 (1,24) 0.00 146.20 1.78 8.20 6.82 2.63 18.90 3.62 0.00 0.00 0.00 0.00
Links 10+ 32.26 2.26 0.00 0.08 0.58 15.32 12.28 0.00 0.01 7.21
Links 20+ 21.42 0.11 0.23 2.12 10.37 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 10
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 83.304 (2,24) 0.00 83.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.01 0.00 0.00 0.00 0.00 0.00 3.10 4.67 0.86
Links 20+ 58.04 0.00 0.00 0.00 8.75 5.76 2.12 0.00 0.00 0.00
16 85.775 (2,24) 0.00 85.77 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 5.37 3.43 0.00
Links 20+ 62.78 0.00 0.00 0.00 0.00 10.56 3.63 0.00 0.00 0.00
17 112.979 (2,24) 0.00 112.98 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 10.10 0.00 0.00
Links 20+ 83.80 0.00 0.00 0.00 0.00 0.00 19.07 0.00 0.00 0.00
18 101.554 (2,24) 0.00 101.55 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 14.42 0.00 0.00
Links 20+ 81.84 0.00 0.00 0.00 0.00 0.00 5.30 0.00 0.00 0.00
19 122.817 (2,24) 0.00 122.82 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 4.14 13.82 0.26
Links 20+ 99.60 0.00 0.00 0.00 0.00 2.53 2.45 0.00 0.00 0.00
20 121.804 (2,24) 0.00 121.80 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.01 0.00 0.00 0.00 0.00 0.00 2.55 4.00 11.00
Links 20+ 99.50 0.00 0.00 0.00 1.14 1.96 1.65 0.00 0.00 0.00
21 149.875 (1,24) 0.00 149.87 2.54 11.23 16.73 4.64 42.77 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 42.04 29.34 0.00 0.00 0.38
Links 20+ 0.00 0.02 0.03 0.17 0.00 0.00 0.00 0.00 0.00 0.00
22 203.371 (1,24) 0.00 203.37 3.45 12.65 15.53 5.67 57.64 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.11108.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 189.612 (1,24) 0.00 189.61 4.65 11.56 2.17 5.36 57.74 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00108.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 188.500 (1,24) 0.00 188.50 8.83 8.16 0.00 4.28 58.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00109.20 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 48.683 (1,24) 0.00 48.68 6.84 0.25 0.00 0.10 21.88 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 19.60 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 11
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
LINK CONTRIBUTION TABLES

MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 113.849 (3,24) 0.00 113.85 2.55 25.90 6.37 3.81 36.82 0.82 0.25 0.14 0.37 0.53
Links 10+ 1.56 3.71 0.00 0.00 0.27 2.00 22.74 0.29 0.14 0.45
Links 20+ 4.20 0.02 0.03 0.30 0.28 0.10 0.20 0.00 0.00 0.00
2 151.549 (3,24) 0.00 151.55 1.45 26.40 42.60 3.90 34.29 1.33 0.32 0.16 0.45 0.70
Links 10+ 2.53 4.76 0.00 0.01 0.42 4.57 19.04 0.33 0.18 0.80
Links 20+ 5.71 0.04 0.08 0.66 0.46 0.13 0.23 0.00 0.00 0.00
3 152.307 (3,24) 0.00 152.31 1.07 25.96 44.35 3.75 28.68 2.13 0.39 0.19 0.52 0.87
Links 10+ 3.99 6.02 0.00 0.01 0.65 8.92 12.65 0.36 0.22 1.32
Links 20+ 7.15 0.10 0.18 1.66 0.75 0.16 0.25 0.00 0.00 0.00
4 126.732 (3,24) 0.00 126.73 0.84 24.92 12.38 3.22 15.50 4.42 0.48 0.22 0.61 1.11
Links 10+ 7.19 8.17 0.01 0.03 1.13 10.26 7.37 0.39 0.25 2.11
Links 20+ 8.64 0.65 0.97 14.04 1.34 0.19 0.27 0.00 0.00 0.00

5 62.768 (3,24) 0.00 62.77 0.82 5.81 5.74 1.27 9.86 2.90 0.47 0.21 0.59 1.02
Links 10+ 4.31 6.89 0.00 0.02 0.80 3.87 5.65 0.32 0.18 0.92
Links 20+ 5.72 0.63 0.93 2.84 0.66 0.13 0.22 0.00 0.00 0.00
6 60.479 (3,24) 0.00 60.48 0.71 4.65 3.93 1.03 7.85 4.12 0.55 0.23 0.65 1.21
Links 10+ 5.35 8.16 0.01 0.02 1.04 3.44 4.58 0.32 0.18 0.90
Links 20+ 5.82 0.37 1.19 3.08 0.72 0.14 0.23 0.00 0.00 0.00
7 118.374 (3,24) 0.00 118.37 0.72 17.45 5.42 2.08 9.79 11.62 0.58 0.24 0.68 1.36
Links 10+ 10.87 10.78 0.01 0.05 1.88 7.38 5.37 0.40 0.26 1.93
Links 20+ 8.85 0.36 1.12 16.94 1.74 0.20 0.28 0.00 0.00 0.00
8 103.651 (3,24) 0.00 103.65 0.59 3.90 2.65 0.92 6.30 27.65 0.78 0.29 0.82 1.89
Links 10+ 14.92 17.16 0.02 0.07 4.28 3.75 3.79 0.40 0.26 1.28
Links 20+ 8.11 0.08 0.19 1.78 1.29 0.21 0.29 0.00 0.00 0.00
9 102.442 (3,24) 0.00 102.44 0.50 1.97 1.60 0.53 4.58 29.04 1.12 0.35 1.01 2.86
Links 10+ 15.83 23.20 0.04 0.05 4.43 2.08 2.84 0.39 0.23 0.83
Links 20+ 6.88 0.03 0.08 0.69 0.80 0.19 0.28 0.00 0.00 0.00
10 99.912 (3,24) 0.00 99.91 0.41 1.16 1.00 0.33 3.39 30.06 2.13 0.47 1.38 5.80
Links 10+ 13.90 27.11 0.05 0.02 1.59 1.18 2.12 0.37 0.19 0.51
Links 20+ 5.46 0.02 0.04 0.33 0.47 0.16 0.27 0.00 0.00 0.00
11 156.614 (3,24) 0.00 156.61 0.33 0.72 0.64 0.21 2.58 5.84 4.54 0.69 2.31 45.50
Links 10+ 9.08 73.67 0.02 0.01 0.67 0.76 1.62 0.44 0.18 0.37
Links 20+ 5.38 0.01 0.02 0.17 0.33 0.17 0.33 0.00 0.00 0.00
12 172.018 (3,24) 0.00 172.02 0.42 1.18 1.03 0.35 3.55 8.69 1.65 0.44 1.34 6.71
Links 10+ 55.35 73.78 0.11 0.03 2.13 1.40 2.27 0.52 0.31 0.71
Links 20+ 8.32 0.02 0.03 0.31 0.71 0.28 0.39 0.00 0.00 0.00
13 174.117 (3,24) 0.00 174.12 0.49 1.72 1.47 0.51 4.51 8.57 1.06 0.35 1.04 3.28
Links 10+ 55.90 67.29 0.06 0.07 6.07 2.31 2.91 0.57 0.42 1.25
Links 20+ 11.52 0.03 0.05 0.49 1.38 0.36 0.41 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 12
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 122.931 (3,24) 0.00 122.93 0.59 2.75 2.27 0.88 6.30 5.54 0.70 0.28 0.81 1.89
Links 10+ 28.15 24.38 0.01 0.06 3.54 5.11 4.09 0.65 0.66 3.57
Links 20+ 23.16 0.04 0.08 0.73 5.69 0.53 0.46 0.00 0.00 0.00
15 103.847 (3,24) 0.00 103.85 0.56 1.74 1.62 0.56 5.20 2.63 0.63 0.27 0.78 1.67
Links 10+ 8.16 11.84 0.01 0.02 1.21 2.82 3.55 1.04 1.84 3.90
Links 20+ 40.49 0.02 0.04 0.38 10.22 1.94 0.71 0.00 0.00 0.00
16 100.437 (3,24) 0.00 100.44 0.51 1.25 1.18 0.41 4.34 1.72 0.57 0.26 0.76 1.50
Links 10+ 4.57 8.86 0.01 0.01 0.69 1.74 3.00 1.81 3.79 1.89
Links 20+ 49.01 0.01 0.03 0.24 2.12 8.96 1.21 0.00 0.00 0.00
17 116.037 (3,24) 0.00 116.04 0.43 0.76 0.70 0.25 3.22 0.91 0.44 0.24 0.69 1.08
Links 10+ 2.07 6.00 0.00 0.00 0.32 0.84 2.22 6.92 1.08 0.58
Links 20+ 72.07 0.01 0.02 0.13 0.46 1.30 13.33 0.00 0.00 0.00
18 128.776 (3,24) 0.00 128.78 0.51 0.93 0.86 0.30 3.85 0.92 0.39 0.21 0.60 0.93
Links 10+ 2.12 5.56 0.00 0.00 0.33 1.06 2.75 11.83 2.27 0.77
Links 20+ 86.89 0.01 0.02 0.15 0.55 1.63 3.34 0.00 0.00 0.00
19 149.762 (3,24) 0.00 149.76 0.64 1.78 1.72 0.60 6.00 1.58 0.46 0.22 0.62 1.11
Links 10+ 4.30 7.32 0.00 0.01 0.64 2.80 4.38 1.38 7.88 6.98
Links 20+ 94.26 0.02 0.04 0.31 2.21 1.66 0.82 0.00 0.00 0.00
20 153.112 (3,24) 0.00 153.11 0.72 2.84 2.80 1.01 8.28 2.14 0.47 0.22 0.62 1.15
Links 10+ 6.55 8.25 0.01 0.02 0.89 6.24 5.97 0.85 1.36 13.24
Links 20+ 84.46 0.03 0.06 0.51 3.19 0.72 0.55 0.00 0.00 0.00
21 132.092 (3,24) 0.00 132.09 0.85 5.85 6.12 2.40 14.85 2.63 0.45 0.21 0.59 1.08
Links 10+ 8.35 8.14 0.01 0.03 0.98 28.89 9.78 0.59 0.55 8.37
Links 20+ 27.03 0.06 0.11 0.96 2.47 0.35 0.40 0.00 0.00 0.00
22 155.793 (3,24) 0.00 155.79 1.15 8.26 11.45 3.70 30.34 1.59 0.35 0.18 0.49 0.81
Links 10+ 3.77 5.68 0.00 0.01 0.55 17.96 53.86 0.48 0.35 1.79
Links 20+ 10.83 0.04 0.08 0.67 0.87 0.22 0.32 0.00 0.00 0.00
23 151.667 (3,24) 0.00 151.67 1.55 8.44 8.92 3.81 34.37 1.08 0.29 0.15 0.43 0.66
Links 10+ 2.35 4.53 0.00 0.01 0.37 4.72 69.66 0.41 0.25 0.90
Links 20+ 7.34 0.02 0.05 0.41 0.49 0.17 0.28 0.00 0.00 0.00
24 145.290 (3,24) 0.00 145.29 2.94 7.82 3.26 3.65 37.19 0.69 0.23 0.13 0.35 0.49
Links 10+ 1.38 3.47 0.00 0.00 0.23 1.69 75.30 0.33 0.16 0.44
Links 20+ 4.67 0.01 0.03 0.22 0.27 0.11 0.23 0.00 0.00 0.00
25 44.182 (3,24) 0.00 44.18 2.60 1.93 1.16 0.70 13.40 0.45 0.18 0.11 0.29 0.38
Links 10+ 0.89 2.78 0.00 0.00 0.15 0.81 13.16 0.33 0.13 0.27
Links 20+ 3.84 0.01 0.01 0.12 0.17 0.09 0.23 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 13
TIME : 19:46:30
JOB: Site 1 Opt 1/2 2014 1B1A1405.DA3 RUN: NAPHTHALENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

'Site 1 Opt 1/2 2014 1B1A1406.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99

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99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'ACENAPHTHENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
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'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0041
2 1606 .0041
3 120 57 2.0 1606 .0103 1679 1 3
4 527 .0041
5 120 107 2.0 527 .0103 1700 1 3
6 1830 .0041
7 1830 .0041
8 1830 .0041
9 3568 .0041
10 3568 .0041
11 3548 .0041
12 120 65 2.0 3548 .0103 1665 1 3
13 20 .0041
14 20 .0041
15 120 115 2.0 20 .0103 1752 1 3
16 4130 .0041
17 4130 .0041
18 958 .0041
19 958 .0041
20 958 .0041
21 120 94 2.0 958 .0103 1523 1 3
22 45 .0041
23 85 .0041
24 120 109 2.0 85 .0103 1694 1 3
25 739 .0041
26 739 .0041
27 739 .0041
```

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JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*-----------------------------------------*---------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 2
TIME : 20:30:13
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*-----------------------------------------*---------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 3
TIME : 20:30:13
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
```

```
--------*---------------------------------------------------------------------------
MAX+BKG * 0.9 1.0 1.0 1.0 0.5 0.4 1.2 0.8 1.0 0.8
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------------------------------------------
MAX * 0.9 1.0 1.0 1.0 0.5 0.4 1.2 0.8 1.0 0.8
WIND DIR* 65 295 285 275 280 280 285 75 70 270
JULIAN * 3 1 1 1 1 1 1 3 3 1
HOUR * 1 23 21 19 20 20 21 3 2 18
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*---------------------------------------------------------------------------
MAX+BKG * 1.1 1.3 1.2 1.0 0.7 0.7 0.6 0.6 0.7 0.9
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------------------------------------------
MAX * 1.1 1.3 1.2 1.0 0.7 0.7 0.6 0.6 0.7 0.9
WIND DIR* 250 250 245 260 240 220 205 155 155 110
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 14 14 13 16 12 8 5 19 19 10
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 1.0 1.3 1.3 1.2 0.3
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 1.0 1.3 1.3 1.2 0.3
WIND DIR* 100 250 250 250 185
JULIAN * 3 1 1 1 1
HOUR * 8 14 14 14 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 4
TIME : 20:30:13
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
THE HIGHEST CONCENTRATION OF 1.30 UG/M**3 OCCURRED AT RECEPTOR REC12.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 5
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.671 ( 2,24) C 0 0.263 ( 1,24) C 0 0.200 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 0.783 ( 2,24) C 0 0.296 ( 1,24) C 0 0.192 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 0.767 ( 2,24) C 0 0.321 ( 1,24) C 0 0.192 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 0.650 ( 2,24) C 0 0.346 ( 1,24) C 0 0.242 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 0.338 ( 2,24) C 0 0.108 ( 1,24) C 0 0.054 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 0.308 ( 2,24) C 0 0.104 ( 1,24) C 0 0.046 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 0.663 ( 2,24) C 0 0.383 ( 1,24) C 0 0.175 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 0.662 ( 2,24) C 0 0.271 ( 1,24) C 0 0.192 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
Page 2
1B1A1406.OUT
9 0.671 ( 2,24) C 0 0.271 ( 1,24) C 0 0.204 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 0.675 ( 2,24) C 0 0.279 ( 1,24) C 0 0.196 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 0.746 ( 3,24) C 0 0.696 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 0.800 ( 3,24) C 0 0.771 ( 1,24) C 0 0.042 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 0.792 ( 3,24) C 0 0.754 ( 1,24) C 0 0.075 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 0.596 ( 1,24) C 0 0.496 ( 3,24) C 0 0.125 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 0.433 ( 1,24) C 0 0.250 ( 3,24) C 0 0.196 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 0.408 ( 1,24) C 0 0.183 ( 2,24) C 0 0.125 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 0.442 ( 1,24) C 0 0.279 ( 2,24) C 0 0.046 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 0.433 ( 3,24) C 0 0.225 ( 2,24) C 0 0.092 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 0.521 ( 3,24) C 0 0.229 ( 2,24) C 0 0.179 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 0.638 ( 3,24) C 0 0.275 ( 1,24) C 0 0.200 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 0.671 ( 3,24) C 0 0.571 ( 1,24) C 0 0.129 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 0.892*( 3,24) C 0 0.842*( 1,24) C 0 0.063 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 0.871 ( 3,24) C 0 0.821 ( 1,24) C 0 0.071 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 0.867 ( 3,24) C 0 0.808 ( 1,24) C 0 0.050 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 0.175 ( 3,24) C 0 0.167 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 0.378 ( 3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 6
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.424 ( 3,24) C 0
3 0.426 ( 3,24) C 0
4 0.413 ( 3,24) C 0
5 0.167 ( 3,24) C 0
6 0.153 ( 3,24) C 0
7 0.407 ( 3,24) C 0
8 0.375 ( 3,24) C 0
9 0.382 ( 3,24) C 0
10 0.383 ( 3,24) C 0
11 0.481 ( 3,24) C 0
12 0.538 ( 3,24) C 0
13 0.540 ( 3,24) C 0
14 0.406 ( 3,24) C 0
15 0.293 ( 3,24) C 0
16 0.239 ( 3,24) C 0
17 0.256 ( 3,24) C 0
18 0.250 ( 3,24) C 0
19 0.310 ( 3,24) C 0
20 0.371 ( 3,24) C 0
21 0.457 ( 3,24) C 0
22 0.599* ( 3,24) C 0
```

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23 0.588 ( 3,24) C 0
24 0.575 ( 3,24) C 0
25 0.114 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.671 ( 2,24) 0.00 0.67 0.00 0.23 0.00 0.03 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.29 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.783 ( 2,24) 0.00 0.78 0.00 0.23 0.10 0.03 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.06 0.23 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.767 ( 2,24) 0.00 0.77 0.00 0.23 0.10 0.01 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.15 0.11 0.00 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 7
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.650 ( 2,24) 0.00 0.65 0.00 0.21 0.01 0.02 0.02 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.17 0.03 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
5 0.338 ( 2,24) 0.00 0.34 0.00 0.08 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.07 0.04 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.308 ( 2,24) 0.00 0.31 0.00 0.05 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.01
Links 10+ 0.09 0.01 0.00 0.00 0.00 0.05 0.03 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.663 ( 2,24) 0.00 0.66 0.00 0.16 0.00 0.01 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.17 0.02 0.00 0.00 0.00 0.10 0.01 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
8 0.662 ( 2,24) 0.00 0.66 0.00 0.00 0.00 0.00 0.00 0.30 0.00 0.00 0.00 0.01
Links 10+ 0.25 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.671 ( 2,24) 0.00 0.67 0.00 0.00 0.00 0.00 0.00 0.29 0.00 0.00 0.00 0.02
Links 10+ 0.25 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


```
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.675 ( 2,24) 0.00 0.68 0.00 0.00 0.00 0.00 0.00 0.30 0.00 0.00 0.00 0.06
Links 10+ 0.21 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.746 ( 3,24) 0.00 0.75 0.00 0.00 0.00 0.00 0.00 0.02 0.07 0.00 0.03 0.49
Links 10+ 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.800 ( 3,24) 0.00 0.80 0.00 0.00 0.00 0.00 0.00 0.06 0.03 0.00 0.02 0.11
Links 10+ 0.43 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.792 ( 3,24) 0.00 0.79 0.00 0.00 0.00 0.00 0.00 0.07 0.02 0.00 0.02 0.06
Links 10+ 0.48 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.596 ( 1,24) 0.00 0.60 0.00 0.05 0.00 0.00 0.02 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.20 0.00 0.00 0.00 0.00 0.08 0.07 0.00 0.00 0.05
Links 20+ 0.03 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
15 0.433 ( 1,24) 0.00 0.43 0.00 0.03 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.04 0.06 0.00 0.00 0.08
Links 20+ 0.07 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00 0.00
16 0.408 ( 1,24) 0.00 0.41 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.05 0.00 0.05 0.03
Links 20+ 0.09 0.00 0.00 0.00 0.03 0.09 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 8
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.442 ( 1,24) 0.00 0.44 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.04 0.07 0.01 0.00
Links 20+ 0.19 0.00 0.00 0.00 0.00 0.02 0.10 0.00 0.00 0.00
18 0.433 ( 3,24) 0.00 0.43 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.03 0.00
Links 20+ 0.20 0.00 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.00
19 0.521 ( 3,24) 0.00 0.52 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.02
Links 10+ 0.06 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.05 0.10
Links 20+ 0.20 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
20 0.638 ( 3,24) 0.00 0.64 0.00 0.01 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.02
Links 10+ 0.11 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.13
Links 20+ 0.19 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00 0.00
21 0.671 ( 3,24) 0.00 0.67 0.00 0.04 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.02
Links 10+ 0.15 0.03 0.00 0.00 0.00 0.26 0.00 0.00 0.00 0.09
Links 20+ 0.02 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
22 0.892 ( 3,24) 0.00 0.89 0.00 0.06 0.03 0.00 0.05 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.02 0.00 0.00 0.00 0.31 0.30 0.00 0.00 0.02
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.871 ( 3,24) 0.00 0.87 0.00 0.07 0.03 0.02 0.06 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.02 0.00 0.00 0.00 0.08 0.55 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.867 ( 3,24) 0.00 0.87 0.00 0.08 0.00 0.03 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.03 0.63 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.175 ( 3,24) 0.00 0.18 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
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INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.263 (1,24) 0.00 0.26 0.03 0.11 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.09 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 9
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.296 (1,24) 0.00 0.30 0.03 0.12 0.01 0.01 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.321 (1,24) 0.00 0.32 0.02 0.12 0.03 0.02 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.346 (1,24) 0.00 0.35 0.01 0.14 0.03 0.02 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.108 (1,24) 0.00 0.11 0.01 0.03 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.104 (1,24) 0.00 0.10 0.00 0.03 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.383 (1,24) 0.00 0.38 0.00 0.14 0.02 0.02 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00
8 0.271 (1,24) 0.00 0.27 0.00 0.07 0.00 0.00 0.02 0.08 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.04 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.271 (1,24) 0.00 0.27 0.00 0.03 0.00 0.00 0.02 0.12 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.279 (1,24) 0.00 0.28 0.00 0.02 0.00 0.00 0.00 0.15 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.696 (1,24) 0.00 0.70 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.32
Links 10+ 0.16 0.12 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.771 (1,24) 0.00 0.77 0.00 0.02 0.00 0.00 0.01 0.06 0.00 0.00 0.00 0.00
Links 10+ 0.50 0.12 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.754 (1,24) 0.00 0.75 0.00 0.03 0.00 0.00 0.01 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.46 0.10 0.00 0.00 0.00 0.04 0.05 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.496 (3,24) 0.00 0.50 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.01 0.03
Links 10+ 0.31 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 10
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.250 (3,24) 0.00 0.25 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.01 0.03
Links 10+ 0.11 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.183 (2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.02 0.00
Links 20+ 0.06 0.00 0.00 0.00 0.00 0.05 0.02 0.00 0.00 0.00
17 0.279 (2,24) 0.00 0.28 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00
Links 20+ 0.11 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
18 0.225 (2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.09 0.00 0.00
Links 20+ 0.10 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
19 0.229 (2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.08 0.00
Links 20+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.275 (1,24) 0.00 0.28 0.00 0.05 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.07 0.10 0.00 0.00 0.02
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.571 (1,24) 0.00 0.57 0.01 0.06 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.26 0.17 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.842 (1,24) 0.00 0.84 0.02 0.06 0.02 0.02 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.64 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.821 (1,24) 0.00 0.82 0.03 0.06 0.00 0.02 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.65 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.808 (1,24) 0.00 0.81 0.05 0.04 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.65 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.167 (1,24) 0.00 0.17 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 11
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3

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INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.378 ( 3,24) 0.00 0.38 0.01 0.14 0.01 0.01 0.05 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.424 ( 3,24) 0.00 0.42 0.01 0.14 0.04 0.01 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.01 0.00 0.00 0.00 0.03 0.11 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.426 ( 3,24) 0.00 0.43 0.01 0.14 0.05 0.01 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.05 0.07 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.413 ( 3,24) 0.00 0.41 0.00 0.14 0.01 0.01 0.02 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.01 0.00 0.00 0.00 0.06 0.04 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00
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5 0.167 ( 3,24) 0.00 0.17 0.00 0.03 0.00 0.00 0.01 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.153 ( 3,24) 0.00 0.15 0.00 0.03 0.00 0.00 0.01 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.407 ( 3,24) 0.00 0.41 0.00 0.10 0.01 0.01 0.01 0.07 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.01 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00
8 0.375 ( 3,24) 0.00 0.38 0.00 0.02 0.00 0.00 0.01 0.16 0.00 0.00 0.00 0.01
Links 10+ 0.09 0.03 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.382 ( 3,24) 0.00 0.38 0.00 0.01 0.00 0.00 0.01 0.17 0.01 0.00 0.01 0.02
Links 10+ 0.10 0.04 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.383 ( 3,24) 0.00 0.38 0.00 0.01 0.00 0.00 0.00 0.18 0.01 0.00 0.01 0.03
Links 10+ 0.09 0.04 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.481 ( 3,24) 0.00 0.48 0.00 0.00 0.00 0.00 0.00 0.03 0.02 0.00 0.01 0.27
Links 10+ 0.05 0.09 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.538 ( 3,24) 0.00 0.54 0.00 0.01 0.00 0.00 0.00 0.04 0.01 0.00 0.01 0.04
Links 10+ 0.32 0.09 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.540 ( 3,24) 0.00 0.54 0.00 0.01 0.00 0.00 0.00 0.04 0.01 0.00 0.01 0.02
Links 10+ 0.33 0.08 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 12
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.406 ( 3,24) 0.00 0.41 0.00 0.02 0.00 0.00 0.01 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.17 0.03 0.00 0.00 0.00 0.03 0.02 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
15 0.293 ( 3,24) 0.00 0.29 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.01 0.02 0.01 0.01 0.03
Links 20+ 0.04 0.00 0.00 0.00 0.05 0.01 0.00 0.00 0.00 0.00
16 0.239 ( 3,24) 0.00 0.24 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.02 0.01 0.02 0.01
Links 20+ 0.05 0.00 0.00 0.00 0.01 0.05 0.01 0.00 0.00 0.00
17 0.256 ( 3,24) 0.00 0.26 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.01 0.04 0.00 0.00
Links 20+ 0.10 0.00 0.00 0.00 0.00 0.01 0.07 0.00 0.00 0.00
18 0.250 ( 3,24) 0.00 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.06 0.01 0.00
Links 20+ 0.11 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
19 0.310 ( 3,24) 0.00 0.31 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.01 0.03 0.01 0.04 0.04
Links 20+ 0.11 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
20 0.371 ( 3,24) 0.00 0.37 0.00 0.02 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.01 0.00 0.00 0.00 0.03 0.03 0.00 0.01 0.07
Links 20+ 0.11 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
21 0.457 ( 3,24) 0.00 0.46 0.00 0.03 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.17 0.06 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
22 0.599 ( 3,24) 0.00 0.60 0.01 0.04 0.02 0.01 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.11 0.32 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.588 ( 3,24) 0.00 0.59 0.01 0.04 0.01 0.01 0.05 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.01 0.00 0.00 0.00 0.03 0.41 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.575 ( 3,24) 0.00 0.58 0.02 0.04 0.00 0.01 0.05 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.44 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.114 ( 3,24) 0.00 0.11 0.02 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 13
TIME : 20:30:14
JOB: Site 1 Opt 1/2 2014 1B1A1406.DA3 RUN: ACENAPHTHENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
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'Site 1 Opt 1/2 2014 1B1A1407.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'ANTHRACENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0051
2 1606 .0051
3 120 57 2.0 1606 .0127 1679 1 3
4 527 .0051
5 120 107 2.0 527 .0127 1700 1 3
6 1830 .0051
7 1830 .0051
8 1830 .0051
9 3568 .0051
10 3568 .0051
11 3548 .0051
12 120 65 2.0 3548 .0127 1665 1 3
13 20 .0051
14 20 .0051
15 120 115 2.0 20 .0127 1752 1 3
16 4130 .0051
17 4130 .0051
18 958 .0051
19 958 .0051
20 958 .0051
21 120 94 2.0 958 .0127 1523 1 3
22 45 .0051
23 85 .0051
24 120 109 2.0 85 .0127 1694 1 3
25 739 .0051
26 739 .0051
27 739 .0051
```

1B1A1407.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 1
TIME : 21: 8:12
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*--*--
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 2
TIME : 21: 8:12
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
Link Data Constants - (Variable data in *.LNK file)

LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*--*--
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
----
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0

21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 3
TIME : 21: 8:12
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
Receptor Data
----
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results

Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum

```
concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 1.1 1.2 1.2 1.2 0.6 0.6 1.4 1.2 1.1 1.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 1.1 1.2 1.2 1.2 0.6 0.6 1.4 1.2 1.1 1.1
WIND DIR* 65 50 280 275 5 0 280 285 70 280
JULIAN * 3 2 1 1 2 2 1 1 3 1
HOUR * 1 22 20 19 13 12 20 21 2 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 1.5 1.5 1.5 1.2 0.9 0.7 0.8 0.7 0.8 1.0
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 1.5 1.5 1.5 1.2 0.9 0.7 0.8 0.7 0.8 1.0
WIND DIR* 255 245 255 250 220 205 210 135 110 110
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 13 15 14 8 5 6 15 10 10
* REC21 REC22 REC23 REC24 REC25
--------*----------------------------------------
MAX+BKG * 1.2 1.6 1.6 1.7 0.4
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*----------------------------------------
MAX * 1.2 1.6 1.6 1.7 0.4
WIND DIR* 100 250 245 100 220
JULIAN * 3 1 1 3 1
HOUR * 8 14 13 8 8
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 4
TIME : 21: 8:12
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
THE HIGHEST CONCENTRATION OF 1.70 UG/M**3 OCCURRED AT RECEPTOR REC24.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 5
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.912 ( 2,24) C 0 0.346 ( 1,24) C 0 0.242 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 1.021 ( 2,24) C 0 0.362 ( 1,24) C 0 0.250 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 1.013 ( 2,24) C 0 0.388 ( 1,24) C 0 0.233 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 0.883 ( 2,24) C 0 0.417 ( 1,24) C 0 0.296 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 0.404 ( 2,24) C 0 0.138 ( 1,24) C 0 0.062 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 0.404 ( 2,24) C 0 0.133 ( 1,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 0.812 ( 2,24) C 0 0.463 ( 1,24) C 0 0.225 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 0.787 ( 2,24) C 0 0.358 ( 1,24) C 0 0.246 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
```


```
9 0.762 ( 2,24) C 0 0.321 ( 1,24) C 0 0.254 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 0.767 ( 2,24) C 0 0.350 ( 1,24) C 0 0.229 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 0.921 ( 3,24) C 0 0.883 ( 1,24) C 0 0.004 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 1.004 ( 3,24) C 0 0.963 ( 1,24) C 0 0.054 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 0.996 ( 3,24) C 0 0.933 ( 1,24) C 0 0.083 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 0.717 ( 1,24) C 0 0.600 ( 3,24) C 0 0.142 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 0.542 ( 1,24) C 0 0.275 ( 3,24) C 0 0.229 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 0.467 ( 1,24) C 0 0.225 ( 2,24) C 0 0.183 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 0.521 ( 1,24) C 0 0.304 ( 2,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 0.562 ( 3,24) C 0 0.233 ( 2,24) C 0 0.125 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 0.633 ( 3,24) C 0 0.292 ( 2,24) C 0 0.233 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 0.775 ( 3,24) C 0 0.354 ( 1,24) C 0 0.254 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 0.829 ( 3,24) C 0 0.708 ( 1,24) C 0 0.158 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 1.146*( 3,24) C 0 1.050*( 1,24) C 0 0.075 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 1.129 ( 3,24) C 0 1.021 ( 1,24) C 0 0.079 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 1.121 ( 3,24) C 0 1.025 ( 1,24) C 0 0.063 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 0.212 ( 3,24) C 0 0.188 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 0.500 ( 3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 6
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.544 ( 3,24) C 0
3 0.544 ( 3,24) C 0
4 0.532 ( 3,24) C 0
5 0.201 ( 3,24) C 0
6 0.203 ( 3,24) C 0
7 0.500 ( 3,24) C 0
8 0.464 ( 3,24) C 0
9 0.446 ( 3,24) C 0
10 0.449 ( 3,24) C 0
11 0.603 ( 3,24) C 0
12 0.674 ( 3,24) C 0
13 0.671 ( 3,24) C 0
14 0.486 ( 3,24) C 0
15 0.349 ( 3,24) C 0
16 0.292 ( 3,24) C 0
17 0.299 ( 3,24) C 0
18 0.307 ( 3,24) C 0
```

19 0.386 (3,24) C 0
20 0.461 (3,24) C 0
21 0.565 (3,24) C 0
22 0.757* (3,24) C 0
23 0.743 (3,24) C 0
24 0.736 (3,24) C 0
25 0.133 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.912 (2,24) 0.00 0.91 0.00 0.31 0.00 0.10 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.38 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 1.021 (2,24) 0.00 1.02 0.00 0.32 0.10 0.10 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.08 0.30 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 1.013 (2,24) 0.00 1.01 0.00 0.31 0.10 0.09 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.19 0.15 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 7
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.883 (2,24) 0.00 0.88 0.00 0.30 0.01 0.07 0.02 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.22 0.04 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
5 0.404 (2,24) 0.00 0.40 0.00 0.08 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.08 0.05 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.404 (2,24) 0.00 0.40 0.00 0.05 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.01
Links 10+ 0.11 0.01 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.812 (2,24) 0.00 0.81 0.00 0.21 0.00 0.03 0.00 0.13 0.00 0.00 0.00 0.00
Links 10+ 0.19 0.02 0.00 0.00 0.00 0.13 0.01 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
8 0.787 (2,24) 0.00 0.79 0.00 0.00 0.00 0.00 0.00 0.33 0.00 0.00 0.00 0.01
Links 10+ 0.28 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
9 0.762 (2,24) 0.00 0.76 0.00 0.00 0.00 0.00 0.00 0.34 0.00 0.00 0.00 0.02
Links 10+ 0.29 0.08 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00

Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.767 (2,24) 0.00 0.77 0.00 0.00 0.00 0.00 0.00 0.35 0.00 0.00 0.00 0.09
Links 10+ 0.22 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.921 (3,24) 0.00 0.92 0.00 0.00 0.00 0.00 0.00 0.02 0.10 0.01 0.05 0.59
Links 10+ 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.004 (3,24) 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.10 0.03 0.00 0.03 0.15
Links 10+ 0.55 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.996 (3,24) 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.13 0.02 0.00 0.02 0.07
Links 10+ 0.62 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.717 (1,24) 0.00 0.72 0.01 0.05 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.25 0.00 0.00 0.00 0.00 0.11 0.09 0.00 0.00 0.06
Links 20+ 0.03 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
15 0.542 (1,24) 0.00 0.54 0.00 0.04 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.06 0.08 0.00 0.00 0.08
Links 20+ 0.07 0.00 0.00 0.00 0.14 0.00 0.00 0.00 0.00 0.00
16 0.467 (1,24) 0.00 0.47 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.07 0.00 0.06 0.04
Links 20+ 0.09 0.00 0.00 0.00 0.04 0.10 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 8
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.521 (1,24) 0.00 0.52 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.04 0.08 0.02 0.00
Links 20+ 0.19 0.00 0.00 0.00 0.00 0.03 0.15 0.00 0.00 0.00
18 0.562 (3,24) 0.00 0.56 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.02
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.18 0.03 0.00
Links 20+ 0.20 0.00 0.00 0.00 0.00 0.04 0.04 0.00 0.00 0.00
19 0.633 (3,24) 0.00 0.63 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.01 0.02
Links 10+ 0.10 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.06 0.11
Links 20+ 0.20 0.00 0.00 0.00 0.05 0.02 0.00 0.00 0.00 0.00
20 0.775 (3,24) 0.00 0.77 0.00 0.01 0.00 0.00 0.00 0.05 0.00 0.00 0.01 0.03
Links 10+ 0.14 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.20
Links 20+ 0.19 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
21 0.829 (3,24) 0.00 0.83 0.00 0.04 0.00 0.00 0.00 0.05 0.00 0.00 0.01 0.03
Links 10+ 0.18 0.03 0.00 0.00 0.00 0.33 0.00 0.00 0.00 0.10
Links 20+ 0.02 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
22 1.146 (3,24) 0.00 1.15 0.00 0.07 0.03 0.06 0.05 0.03 0.00 0.00 0.00 0.02
Links 10+ 0.08 0.02 0.00 0.00 0.00 0.39 0.37 0.00 0.00 0.03
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 1.129 (3,24) 0.00 1.13 0.00 0.08 0.03 0.06 0.06 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.10 0.69 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.121 (3,24) 0.00 1.12 0.00 0.10 0.00 0.07 0.08 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.03 0.79 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.212 (3,24) 0.00 0.21 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Links 10+ 0.02 0.00 0.00 0.00 0.00 0.02 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.346 (1,24) 0.00 0.35 0.06 0.13 0.00 0.01 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 9
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.362 (1,24) 0.00 0.36 0.03 0.15 0.01 0.02 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.388 (1,24) 0.00 0.39 0.02 0.16 0.03 0.02 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.417 (1,24) 0.00 0.42 0.02 0.17 0.03 0.03 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.138 (1,24) 0.00 0.14 0.02 0.03 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.133 (1,24) 0.00 0.13 0.01 0.03 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.463 (1,24) 0.00 0.46 0.01 0.18 0.02 0.03 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00
8 0.358 (1,24) 0.00 0.36 0.01 0.08 0.00 0.02 0.02 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.05 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.321 (1,24) 0.00 0.32 0.00 0.03 0.00 0.00 0.02 0.15 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.03 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.350 (1,24) 0.00 0.35 0.00 0.03 0.00 0.00 0.00 0.18 0.00 0.00 0.00 0.00
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.883 (1,24) 0.00 0.88 0.00 0.02 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.39
Links 10+ 0.19 0.12 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.963 (1,24) 0.00 0.96 0.00 0.03 0.00 0.00 0.01 0.11 0.00 0.00 0.00 0.00
Links 10+ 0.62 0.12 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.933 (1,24) 0.00 0.93 0.00 0.03 0.00 0.00 0.01 0.09 0.00 0.00 0.00 0.00
Links 10+ 0.57 0.10 0.00 0.00 0.00 0.05 0.06 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.600 (3,24) 0.00 0.60 0.00 0.00 0.00 0.00 0.00 0.07 0.01 0.00 0.02 0.03
Links 10+ 0.39 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 10
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.275 (3,24) 0.00 0.28 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.02 0.03
Links 10+ 0.12 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.225 (2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.03 0.00
Links 20+ 0.06 0.00 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.00
17 0.304 (2,24) 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00
Links 20+ 0.11 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00
18 0.233 (2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00
Links 20+ 0.10 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
19 0.292 (2,24) 0.00 0.29 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.10 0.00
Links 20+ 0.12 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
20 0.354 (1,24) 0.00 0.35 0.01 0.05 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.10 0.13 0.00 0.00 0.03
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.708 (1,24) 0.00 0.71 0.02 0.07 0.00 0.03 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.31 0.22 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 1.050 (1,24) 0.00 1.05 0.03 0.08 0.02 0.06 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.79 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 1.021 (1,24) 0.00 1.02 0.03 0.07 0.00 0.05 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.79 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.025 (1,24) 0.00 1.03 0.06 0.05 0.00 0.04 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.80 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.188 (1,24) 0.00 0.19 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 11
TIME : 21: 8:25

JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.500 (3,24) 0.00 0.50 0.02 0.19 0.01 0.04 0.05 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.17 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.544 (3,24) 0.00 0.54 0.01 0.19 0.04 0.04 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.03 0.14 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.544 (3,24) 0.00 0.54 0.01 0.19 0.05 0.04 0.04 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.07 0.09 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.532 (3,24) 0.00 0.53 0.01 0.18 0.01 0.03 0.02 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.08 0.05 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00

5 0.201 (3,24) 0.00 0.20 0.01 0.03 0.00 0.00 0.01 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.03 0.04 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.203 (3,24) 0.00 0.20 0.00 0.03 0.00 0.00 0.01 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.01 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.500 (3,24) 0.00 0.50 0.00 0.13 0.01 0.02 0.01 0.08 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.01 0.00 0.00 0.00 0.05 0.04 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00
8 0.464 (3,24) 0.00 0.46 0.00 0.03 0.00 0.01 0.01 0.19 0.01 0.00 0.01 0.01
Links 10+ 0.10 0.03 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
9 0.446 (3,24) 0.00 0.45 0.00 0.01 0.00 0.00 0.01 0.21 0.01 0.00 0.01 0.02
Links 10+ 0.11 0.04 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.449 (3,24) 0.00 0.45 0.00 0.01 0.00 0.00 0.00 0.21 0.01 0.00 0.01 0.04
Links 10+ 0.10 0.04 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.603 (3,24) 0.00 0.60 0.00 0.01 0.00 0.00 0.00 0.04 0.03 0.00 0.02 0.33
Links 10+ 0.06 0.09 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.674 (3,24) 0.00 0.67 0.00 0.01 0.00 0.00 0.00 0.07 0.01 0.00 0.01 0.05
Links 10+ 0.41 0.09 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.671 (3,24) 0.00 0.67 0.00 0.01 0.00 0.00 0.00 0.07 0.01 0.00 0.01 0.02
Links 10+ 0.41 0.08 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 12
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.486 (3,24) 0.00 0.49 0.00 0.02 0.00 0.00 0.01 0.03 0.00 0.00 0.01 0.01
Links 10+ 0.21 0.03 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
15 0.349 (3,24) 0.00 0.35 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.06 0.02 0.00 0.00 0.00 0.02 0.03 0.01 0.01 0.03
Links 20+ 0.04 0.00 0.00 0.00 0.07 0.01 0.00 0.00 0.00 0.00
16 0.292 (3,24) 0.00 0.29 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.01 0.02 0.01 0.03 0.01
Links 20+ 0.05 0.00 0.00 0.00 0.01 0.06 0.01 0.00 0.00 0.00
17 0.299 (3,24) 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.05 0.01 0.00
Links 20+ 0.10 0.00 0.00 0.00 0.00 0.01 0.09 0.00 0.00 0.00
18 0.307 (3,24) 0.00 0.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.02 0.09 0.02 0.00
Links 20+ 0.11 0.00 0.00 0.00 0.00 0.01 0.03 0.00 0.00 0.00
19 0.386 (3,24) 0.00 0.39 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.02 0.03 0.01 0.05 0.05
Links 20+ 0.11 0.00 0.00 0.00 0.02 0.01 0.01 0.00 0.00 0.00
20 0.461 (3,24) 0.00 0.46 0.00 0.02 0.00 0.00 0.01 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.05 0.04 0.01 0.01 0.10
Links 20+ 0.11 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
21 0.565 (3,24) 0.00 0.57 0.01 0.04 0.00 0.01 0.02 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.06 0.01 0.00 0.00 0.00 0.21 0.07 0.00 0.00 0.05
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
22 0.757 (3,24) 0.00 0.76 0.01 0.05 0.02 0.04 0.04 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.13 0.39 0.00 0.00 0.02
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.743 (3,24) 0.00 0.74 0.01 0.05 0.01 0.04 0.05 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.03 0.51 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.736 (3,24) 0.00 0.74 0.02 0.05 0.00 0.04 0.05 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.55 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.133 (3,24) 0.00 0.13 0.02 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.09 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 5/10 PAGE: 13
TIME : 21: 8:25
JOB: Site 1 Opt 1/2 2014 1B1A1407.DA3 RUN: ANTHRACENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1408.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'ACENAPHTHYLE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0203
2 1606 .0203
3 120 57 2.0 1606 .0509 1679 1 3
4 527 .0203
5 120 107 2.0 527 .0509 1700 1 3
6 1830 .0203
7 1830 .0203
8 1830 .0203
9 3568 .0203
10 3568 .0203
11 3548 .0203
12 120 65 2.0 3548 .0509 1665 1 3
13 20 .0203
14 20 .0203
15 120 115 2.0 20 .0509 1752 1 3
16 4130 .0203
17 4130 .0203
18 958 .0203
19 958 .0203
20 958 .0203
21 120 94 2.0 958 .0509 1523 1 3
22 45 .0203
23 85 .0203
24 120 109 2.0 85 .0509 1694 1 3
25 739 .0203
26 739 .0203
27 739 .0203
```

```
1B1A1408.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 1
TIME : 19:18:49
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 2
TIME : 19:18:49
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 3
TIME : 19:18:49
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

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concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 5.0 5.1 5.2 5.2 2.9 2.7 5.3 4.5 4.6 4.9
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 5.0 5.1 5.2 5.2 2.9 2.7 5.3 4.5 4.6 4.9
WIND DIR* 70 65 285 285 10 355 280 275 280 280
JULIAN * 3 3 1 1 2 2 1 1 1 1
HOUR * 2 1 21 21 14 11 20 19 20 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 6.1 6.9 6.5 5.0 3.7 3.4 3.5 3.3 3.6 4.2
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 6.1 6.9 6.5 5.0 3.7 3.4 3.5 3.3 3.6 4.2
WIND DIR* 250 255 255 250 245 230 220 160 155 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 14 15 15 14 13 10 8 20 19 9
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 5.1 6.6 6.7 6.7 1.9
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 5.1 6.6 6.7 6.7 1.9
WIND DIR* 100 95 100 95 120
JULIAN * 3 3 3 3 3
HOUR * 8 7 8 7 12
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 4
TIME : 19:18:49
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
THE HIGHEST CONCENTRATION OF 6.90 UG/M**3 OCCURRED AT RECEPTOR REC12.
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 5
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 3.633 ( 2,24) C 0 1.479 ( 1,24) C 0 1.267 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 4.283 ( 2,24) C 0 1.588 ( 1,24) C 0 1.242 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 4.287 ( 2,24) C 0 1.754 ( 1,24) C 0 1.138 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 3.725 ( 2,24) C 0 1.792 ( 1,24) C 0 1.417 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 2.179 ( 2,24) C 0 0.608 ( 1,24) C 0 0.400 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 2.108 ( 2,24) C 0 0.713 ( 1,24) C 0 0.333 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 3.521 ( 2,24) C 0 2.092 ( 1,24) C 0 1.054 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 3.525 ( 2,24) C 0 1.637 ( 1,24) C 0 1.104 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
Page 2
1B1A1408.OUT
9 3.450 ( 2,24) C 0 1.588 ( 1,24) C 0 1.054 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 3.317 ( 2,24) C 0 1.671 ( 1,24) C 0 1.063 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 3.908 ( 1,24) C 0 3.892 ( 3,24) C 0 0.183 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 4.271 ( 3,24) C 0 4.271*( 1,24) C 0 0.400 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 4.267 ( 1,24) C 0 4.217 ( 3,24) C 0 0.521 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 3.050 ( 1,24) C 0 2.754 ( 3,24) C 0 0.792 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 2.517 ( 1,24) C 0 1.288 ( 3,24) C 0 1.096 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 2.362 ( 1,24) C 0 1.058 ( 2,24) C 0 0.908 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 2.462 ( 1,24) C 0 1.396 ( 2,24) C 0 0.588 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 2.646 ( 3,24) C 0 1.100 ( 2,24) C 0 0.792 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 3.021 ( 3,24) C 0 1.296 ( 2,24) C 0 1.192 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 3.296 ( 3,24) C 0 1.579 ( 1,24) C 0 1.267 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 3.671 ( 3,24) C 0 3.021 ( 1,24) C 0 0.875 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 4.800 ( 3,24) C 0 4.271 ( 1,24) C 0 0.438 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 4.804*( 3,24) C 0 4.192 ( 1,24) C 0 0.433 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 4.775 ( 3,24) C 0 4.192 ( 1,24) C 0 0.358 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 1.363 ( 3,24) C 0 0.913 ( 1,24) C 0 0.054 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 2.126 ( 3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 6
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 2.371 ( 3,24) C 0
3 2.393 ( 3,24) C 0
4 2.311 ( 3,24) C 0
5 1.062 ( 3,24) C 0
6 1.051 ( 3,24) C 0
7 2.222 ( 3,24) C 0
8 2.089 ( 3,24) C 0
9 2.031 ( 3,24) C 0
10 2.017 ( 3,24) C 0
11 2.661 ( 3,24) C 0
12 2.981 ( 3,24) C 0
13 3.001 ( 3,24) C 0
14 2.199 ( 3,24) C 0
15 1.633 ( 3,24) C 0
16 1.443 ( 3,24) C 0
17 1.482 ( 3,24) C 0
18 1.513 ( 3,24) C 0
```

```
19 1.836 ( 3,24) C 0
20 2.047 ( 3,24) C 0
21 2.522 ( 3,24) C 0
22 3.169* ( 3,24) C 0
23 3.143 ( 3,24) C 0
24 3.108 ( 3,24) C 0
25 0.776 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 3.633 ( 2,24) 0.00 3.63 0.00 1.23 0.03 0.23 0.44 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.07 1.46 0.03 0.00 0.02
Links 20+ 0.06 0.00 0.00 0.00 0.01 0.00 0.02 0.00 0.00 0.00
2 4.283 ( 2,24) 0.00 4.28 0.00 1.23 0.61 0.23 0.42 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.01 0.00 0.00 0.00 0.31 1.17 0.03 0.01 0.06
Links 20+ 0.10 0.00 0.00 0.00 0.03 0.00 0.02 0.00 0.00 0.00
3 4.287 ( 2,24) 0.00 4.29 0.00 1.22 0.60 0.21 0.34 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.17 0.02 0.00 0.00 0.00 0.75 0.59 0.03 0.02 0.11
Links 20+ 0.14 0.00 0.00 0.00 0.06 0.00 0.02 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 7
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 3.725 ( 2,24) 0.00 3.73 0.00 1.18 0.05 0.19 0.10 0.10 0.00 0.00 0.00 0.01
Links 10+ 0.44 0.04 0.00 0.00 0.01 0.85 0.16 0.03 0.02 0.19
Links 20+ 0.16 0.00 0.03 0.01 0.12 0.01 0.03 0.00 0.00 0.00
5 2.179 ( 2,24) 0.00 2.18 0.00 0.38 0.08 0.07 0.10 0.17 0.00 0.00 0.01 0.03
Links 10+ 0.34 0.06 0.00 0.00 0.00 0.34 0.22 0.03 0.01 0.08
Links 20+ 0.10 0.00 0.05 0.05 0.06 0.00 0.02 0.00 0.00 0.00
6 2.108 ( 2,24) 0.00 2.11 0.00 0.28 0.04 0.05 0.05 0.29 0.01 0.00 0.01 0.04
Links 10+ 0.43 0.09 0.00 0.00 0.02 0.29 0.13 0.03 0.01 0.07
Links 20+ 0.11 0.00 0.05 0.05 0.06 0.00 0.02 0.00 0.00 0.00
7 3.521 ( 2,24) 0.00 3.52 0.00 0.79 0.00 0.10 0.02 0.50 0.00 0.00 0.00 0.02
Links 10+ 0.81 0.09 0.00 0.00 0.02 0.51 0.06 0.03 0.02 0.17
Links 20+ 0.16 0.00 0.03 0.01 0.15 0.02 0.03 0.00 0.00 0.00
8 3.525 ( 2,24) 0.00 3.52 0.00 0.03 0.00 0.01 0.00 1.40 0.00 0.00 0.00 0.04
Links 10+ 1.17 0.20 0.00 0.00 0.08 0.14 0.02 0.03 0.03 0.08
Links 20+ 0.15 0.00 0.00 0.00 0.09 0.02 0.03 0.00 0.00 0.00
9 3.450 ( 2,24) 0.00 3.45 0.00 0.00 0.00 0.00 0.00 1.41 0.01 0.00 0.01 0.10
Links 10+ 1.21 0.31 0.00 0.00 0.08 0.03 0.00 0.03 0.02 0.05
```


```
Links 20+ 0.12 0.00 0.00 0.00 0.05 0.01 0.03 0.00 0.00 0.00
10 3.317 ( 2,24) 0.00 3.32 0.00 0.00 0.00 0.00 0.00 1.42 0.03 0.00 0.02 0.34
Links 10+ 0.98 0.33 0.00 0.00 0.01 0.00 0.00 0.03 0.01 0.02
Links 20+ 0.08 0.00 0.00 0.00 0.02 0.00 0.02 0.00 0.00 0.00
11 3.908 ( 1,24) 0.00 3.91 0.03 0.05 0.00 0.02 0.05 0.42 0.01 0.00 0.00 1.58
Links 10+ 0.81 0.62 0.00 0.00 0.00 0.06 0.14 0.00 0.01 0.03
Links 20+ 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
12 4.271 ( 3,24) 0.00 4.27 0.00 0.00 0.00 0.00 0.00 0.39 0.15 0.03 0.11 0.59
Links 10+ 2.20 0.80 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 4.267 ( 1,24) 0.00 4.27 0.04 0.15 0.03 0.04 0.08 0.32 0.00 0.00 0.00 0.00
Links 10+ 2.30 0.50 0.00 0.00 0.10 0.20 0.26 0.00 0.00 0.09
Links 20+ 0.07 0.00 0.00 0.00 0.09 0.00 0.00 0.00 0.00 0.00
14 3.050 ( 1,24) 0.00 3.05 0.05 0.24 0.04 0.08 0.12 0.11 0.00 0.00 0.00 0.00
Links 10+ 0.95 0.01 0.00 0.00 0.00 0.45 0.37 0.00 0.00 0.19
Links 20+ 0.14 0.00 0.00 0.00 0.31 0.00 0.00 0.00 0.00 0.00
15 2.517 ( 1,24) 0.00 2.52 0.05 0.15 0.03 0.05 0.10 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.20 0.00 0.00 0.00 0.00 0.25 0.31 0.00 0.03 0.31
Links 20+ 0.41 0.00 0.00 0.00 0.60 0.00 0.00 0.00 0.00 0.00
16 2.362 ( 1,24) 0.00 2.36 0.05 0.11 0.03 0.04 0.08 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.11 0.00 0.00 0.00 0.00 0.15 0.26 0.00 0.23 0.16
Links 20+ 0.52 0.00 0.00 0.00 0.15 0.45 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 8
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 2.462 ( 1,24) 0.00 2.46 0.03 0.07 0.00 0.02 0.05 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.07 0.19 0.30 0.09 0.05
Links 20+ 0.82 0.00 0.00 0.00 0.03 0.09 0.59 0.00 0.00 0.00
18 2.646 ( 3,24) 0.00 2.65 0.00 0.01 0.00 0.00 0.00 0.08 0.03 0.02 0.05 0.08
Links 10+ 0.16 0.10 0.00 0.00 0.00 0.03 0.00 0.60 0.13 0.03
Links 20+ 1.03 0.00 0.00 0.00 0.03 0.14 0.14 0.00 0.00 0.00
19 3.021 ( 3,24) 0.00 3.02 0.00 0.03 0.00 0.00 0.00 0.13 0.03 0.02 0.05 0.10
Links 10+ 0.36 0.13 0.00 0.00 0.00 0.07 0.00 0.00 0.29 0.47
Links 20+ 1.07 0.00 0.00 0.00 0.19 0.07 0.00 0.00 0.00 0.00
20 3.296 ( 3,24) 0.00 3.30 0.00 0.05 0.00 0.02 0.00 0.19 0.03 0.02 0.06 0.10
Links 10+ 0.57 0.15 0.00 0.00 0.01 0.18 0.00 0.00 0.00 0.71
Links 20+ 0.94 0.00 0.00 0.00 0.26 0.00 0.00 0.00 0.00 0.00
21 3.671 ( 3,24) 0.00 3.67 0.00 0.19 0.01 0.08 0.01 0.23 0.04 0.02 0.05 0.09
Links 10+ 0.73 0.15 0.00 0.00 0.02 1.30 0.00 0.00 0.00 0.49
Links 20+ 0.10 0.00 0.00 0.00 0.01 0.17 0.00 0.00 0.00 0.00
22 4.800 ( 3,24) 0.00 4.80 0.00 0.36 0.12 0.14 0.20 0.14 0.03 0.01 0.05 0.07
Links 10+ 0.32 0.11 0.00 0.00 0.00 1.56 1.49 0.00 0.00 0.11
Links 20+ 0.04 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
23 4.804 ( 3,24) 0.00 4.80 0.00 0.41 0.16 0.17 0.27 0.09 0.03 0.01 0.03 0.06
Links 10+ 0.20 0.08 0.00 0.00 0.00 0.40 2.75 0.00 0.00 0.06
Links 20+ 0.04 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
24 4.775 ( 3,24) 0.00 4.78 0.00 0.44 0.06 0.19 0.34 0.06 0.02 0.00 0.03 0.05
Links 10+ 0.11 0.06 0.00 0.00 0.00 0.15 3.19 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
25 1.363 ( 3,24) 0.00 1.36 0.03 0.17 0.02 0.06 0.12 0.04 0.01 0.00 0.03 0.03
```

Links 10+ 0.08 0.05 0.00 0.00 0.00 0.06 0.59 0.01 0.00 0.03
Links 20+ 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 1.479 (1,24) 0.00 1.48 0.22 0.55 0.00 0.05 0.18 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.48 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 9
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 1.588 (1,24) 0.00 1.59 0.12 0.63 0.07 0.07 0.19 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.51 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 1.754 (1,24) 0.00 1.75 0.10 0.66 0.19 0.08 0.20 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.53 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 1.792 (1,24) 0.00 1.79 0.07 0.72 0.18 0.08 0.20 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 0.49 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.608 (1,24) 0.00 0.61 0.07 0.13 0.03 0.02 0.09 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.27 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.713 (1,24) 0.00 0.71 0.06 0.14 0.04 0.03 0.09 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.28 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 2.092 (1,24) 0.00 2.09 0.06 0.72 0.10 0.09 0.16 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.13 0.41 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.10 0.32 0.00 0.00 0.00 0.00 0.00 0.00
8 1.637 (1,24) 0.00 1.64 0.05 0.32 0.05 0.06 0.11 0.45 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.19 0.31 0.00 0.00 0.02
Links 20+ 0.00 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00 0.00
9 1.588 (1,24) 0.00 1.59 0.05 0.17 0.03 0.04 0.08 0.62 0.00 0.00 0.00 0.00
Links 10+ 0.14 0.01 0.00 0.00 0.00 0.15 0.23 0.00 0.00 0.03
Links 20+ 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
10 1.671 (1,24) 0.00 1.67 0.03 0.10 0.02 0.03 0.06 0.76 0.00 0.00 0.00 0.00
Links 10+ 0.26 0.04 0.00 0.00 0.02 0.10 0.18 0.00 0.00 0.03
Links 20+ 0.02 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
11 3.892 (3,24) 0.00 3.89 0.00 0.00 0.00 0.00 0.00 0.08 0.38 0.06 0.20 2.41
Links 10+ 0.00 0.76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 4.271 (1,24) 0.00 4.27 0.03 0.10 0.02 0.03 0.07 0.40 0.00 0.00 0.00 0.00
Links 10+ 2.51 0.60 0.00 0.00 0.04 0.12 0.19 0.00 0.00 0.05
Links 20+ 0.05 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
13 4.217 (3,24) 0.00 4.22 0.00 0.00 0.00 0.00 0.00 0.46 0.09 0.03 0.09 0.28
Links 10+ 2.48 0.77 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 2.754 (3,24) 0.00 2.75 0.00 0.00 0.00 0.00 0.00 0.39 0.06 0.03 0.07 0.16
Links 10+ 1.55 0.45 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 10
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 1.288 (3,24) 0.00 1.29 0.00 0.00 0.00 0.00 0.00 0.20 0.05 0.02 0.07 0.15
Links 10+ 0.51 0.22 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
16 1.058 (2,24) 0.00 1.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.10 0.00
Links 20+ 0.40 0.00 0.00 0.00 0.00 0.30 0.10 0.00 0.00 0.00
17 1.396 (2,24) 0.00 1.40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.29 0.00 0.00
Links 20+ 0.54 0.00 0.00 0.00 0.00 0.00 0.57 0.00 0.00 0.00
18 1.100 (2,24) 0.00 1.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.42 0.00 0.00
Links 20+ 0.52 0.00 0.00 0.00 0.00 0.00 0.16 0.00 0.00 0.00
19 1.296 (2,24) 0.00 1.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.41 0.00
Links 20+ 0.63 0.00 0.00 0.00 0.00 0.06 0.07 0.00 0.00 0.00
20 1.579 (1,24) 0.00 1.58 0.06 0.19 0.05 0.06 0.16 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.37 0.53 0.00 0.00 0.13
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 3.021 (1,24) 0.00 3.02 0.08 0.33 0.10 0.13 0.27 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 1.24 0.86 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 4.271 (1,24) 0.00 4.27 0.10 0.37 0.10 0.16 0.36 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 3.18 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 4.192 (1,24) 0.00 4.19 0.14 0.34 0.01 0.15 0.36 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 3.19 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 4.192 (1,24) 0.00 4.19 0.27 0.24 0.00 0.11 0.36 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 3.21 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.913 (1,24) 0.00 0.91 0.20 0.00 0.00 0.00 0.13 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.58 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 11
TIME : 19:19: 5

JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 2.126 (3,24) 0.00 2.13 0.07 0.76 0.04 0.11 0.23 0.03 0.01 0.00 0.01 0.01
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.06 0.67 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
2 2.371 (3,24) 0.00 2.37 0.04 0.77 0.27 0.11 0.21 0.04 0.01 0.00 0.01 0.02
Links 10+ 0.08 0.03 0.00 0.00 0.00 0.13 0.56 0.01 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
3 2.393 (3,24) 0.00 2.39 0.03 0.76 0.28 0.10 0.18 0.06 0.01 0.01 0.01 0.03
Links 10+ 0.12 0.04 0.00 0.00 0.00 0.26 0.37 0.01 0.01 0.04
Links 20+ 0.05 0.00 0.00 0.01 0.02 0.00 0.01 0.00 0.00 0.00
4 2.311 (3,24) 0.00 2.31 0.02 0.73 0.08 0.09 0.10 0.13 0.01 0.01 0.02 0.03
Links 10+ 0.21 0.05 0.00 0.00 0.01 0.30 0.22 0.01 0.01 0.06
Links 20+ 0.05 0.00 0.04 0.09 0.04 0.00 0.01 0.00 0.00 0.00

5 1.062 (3,24) 0.00 1.06 0.02 0.17 0.03 0.03 0.06 0.09 0.01 0.01 0.02 0.03
Links 10+ 0.13 0.04 0.00 0.00 0.00 0.11 0.16 0.01 0.00 0.03
Links 20+ 0.03 0.00 0.03 0.02 0.02 0.00 0.01 0.00 0.00 0.00
6 1.051 (3,24) 0.00 1.05 0.02 0.14 0.03 0.03 0.05 0.12 0.02 0.01 0.02 0.03
Links 10+ 0.15 0.05 0.00 0.00 0.01 0.10 0.14 0.01 0.00 0.02
Links 20+ 0.04 0.00 0.04 0.02 0.02 0.00 0.01 0.00 0.00 0.00
7 2.222 (3,24) 0.00 2.22 0.02 0.51 0.03 0.06 0.06 0.34 0.02 0.01 0.02 0.04
Links 10+ 0.32 0.07 0.00 0.00 0.01 0.21 0.16 0.01 0.01 0.06
Links 20+ 0.05 0.00 0.04 0.11 0.05 0.01 0.01 0.00 0.00 0.00
8 2.089 (3,24) 0.00 2.09 0.02 0.12 0.02 0.03 0.04 0.81 0.02 0.01 0.02 0.06
Links 10+ 0.44 0.11 0.00 0.00 0.03 0.11 0.11 0.01 0.01 0.03
Links 20+ 0.05 0.00 0.00 0.01 0.03 0.01 0.01 0.00 0.00 0.00
9 2.031 (3,24) 0.00 2.03 0.02 0.06 0.01 0.01 0.03 0.85 0.03 0.01 0.03 0.08
Links 10+ 0.47 0.15 0.00 0.00 0.03 0.06 0.08 0.01 0.01 0.02
Links 20+ 0.04 0.00 0.00 0.00 0.02 0.00 0.01 0.00 0.00 0.00
10 2.017 (3,24) 0.00 2.02 0.01 0.03 0.01 0.01 0.02 0.89 0.06 0.01 0.04 0.17
Links 10+ 0.42 0.17 0.00 0.00 0.01 0.04 0.06 0.01 0.00 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
11 2.661 (3,24) 0.00 2.66 0.01 0.02 0.00 0.01 0.02 0.17 0.13 0.02 0.07 1.35
Links 10+ 0.27 0.46 0.00 0.00 0.00 0.02 0.05 0.01 0.00 0.01
Links 20+ 0.04 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
12 2.981 (3,24) 0.00 2.98 0.01 0.03 0.01 0.01 0.02 0.27 0.05 0.01 0.04 0.20
Links 10+ 1.63 0.47 0.00 0.00 0.01 0.04 0.06 0.01 0.01 0.02
Links 20+ 0.05 0.00 0.00 0.00 0.02 0.01 0.01 0.00 0.00 0.00
13 3.001 (3,24) 0.00 3.00 0.01 0.05 0.01 0.01 0.03 0.26 0.03 0.01 0.03 0.09
Links 10+ 1.65 0.42 0.00 0.00 0.04 0.07 0.09 0.02 0.01 0.04
Links 20+ 0.07 0.00 0.00 0.00 0.04 0.01 0.01 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 12
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 2.199 (3,24) 0.00 2.20 0.02 0.08 0.01 0.03 0.04 0.17 0.02 0.01 0.02 0.05
Links 10+ 0.83 0.15 0.00 0.00 0.02 0.15 0.12 0.02 0.02 0.10
Links 20+ 0.15 0.00 0.00 0.00 0.17 0.01 0.01 0.00 0.00 0.00
15 1.633 (3,24) 0.00 1.63 0.02 0.05 0.01 0.02 0.03 0.08 0.02 0.01 0.02 0.05
Links 10+ 0.24 0.07 0.00 0.00 0.01 0.08 0.10 0.03 0.05 0.11
Links 20+ 0.26 0.00 0.00 0.00 0.30 0.06 0.02 0.00 0.00 0.00
16 1.443 (3,24) 0.00 1.44 0.02 0.04 0.01 0.01 0.03 0.05 0.02 0.01 0.02 0.04
Links 10+ 0.14 0.06 0.00 0.00 0.00 0.05 0.09 0.05 0.11 0.05
Links 20+ 0.30 0.00 0.00 0.00 0.06 0.25 0.03 0.00 0.00 0.00
17 1.482 (3,24) 0.00 1.48 0.01 0.02 0.00 0.01 0.02 0.03 0.01 0.01 0.02 0.03
Links 10+ 0.06 0.04 0.00 0.00 0.00 0.03 0.06 0.20 0.03 0.02
Links 20+ 0.46 0.00 0.00 0.00 0.01 0.04 0.40 0.00 0.00 0.00
18 1.513 (3,24) 0.00 1.51 0.01 0.03 0.00 0.01 0.02 0.03 0.01 0.01 0.02 0.03
Links 10+ 0.06 0.03 0.00 0.00 0.00 0.03 0.08 0.35 0.07 0.02
Links 20+ 0.55 0.00 0.00 0.00 0.02 0.05 0.10 0.00 0.00 0.00
19 1.836 (3,24) 0.00 1.84 0.02 0.05 0.01 0.02 0.04 0.04 0.01 0.01 0.02 0.03
Links 10+ 0.13 0.04 0.00 0.00 0.00 0.08 0.13 0.04 0.23 0.21
Links 20+ 0.60 0.00 0.00 0.00 0.07 0.04 0.02 0.00 0.00 0.00
20 2.047 (3,24) 0.00 2.05 0.02 0.08 0.02 0.03 0.05 0.06 0.01 0.01 0.02 0.03
Links 10+ 0.19 0.05 0.00 0.00 0.00 0.18 0.18 0.02 0.04 0.39
Links 20+ 0.53 0.00 0.00 0.00 0.10 0.02 0.02 0.00 0.00 0.00
21 2.522 (3,24) 0.00 2.52 0.03 0.17 0.04 0.07 0.09 0.08 0.01 0.01 0.02 0.03
Links 10+ 0.25 0.05 0.00 0.00 0.01 0.84 0.29 0.02 0.02 0.24
Links 20+ 0.17 0.00 0.00 0.00 0.07 0.01 0.01 0.00 0.00 0.00
22 3.169 (3,24) 0.00 3.17 0.03 0.24 0.07 0.10 0.19 0.05 0.01 0.00 0.02 0.02
Links 10+ 0.11 0.04 0.00 0.00 0.00 0.53 1.59 0.01 0.01 0.05
Links 20+ 0.07 0.00 0.00 0.00 0.02 0.01 0.01 0.00 0.00 0.00
23 3.143 (3,24) 0.00 3.14 0.05 0.25 0.06 0.11 0.21 0.03 0.01 0.00 0.01 0.02
Links 10+ 0.07 0.03 0.00 0.00 0.00 0.14 2.05 0.01 0.01 0.03
Links 20+ 0.05 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
24 3.108 (3,24) 0.00 3.11 0.09 0.23 0.02 0.10 0.23 0.02 0.01 0.00 0.01 0.02
Links 10+ 0.04 0.02 0.00 0.00 0.00 0.05 2.22 0.01 0.00 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
25 0.776 (3,24) 0.00 0.78 0.07 0.06 0.01 0.02 0.08 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.02 0.00 0.00 0.00 0.02 0.39 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 13
TIME : 19:19: 5
JOB: Site 1 Opt 1/2 2014 1B1A1408.DA3 RUN: ACENAPHTHYLE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1409.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BENZOB' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0009
2 1606 .0009
3 120 57 2.0 1606 .0023 1679 1 3
4 527 .0009
5 120 107 2.0 527 .0023 1700 1 3
6 1830 .0009
7 1830 .0009
8 1830 .0009
9 3568 .0009
10 3568 .0009
11 3548 .0009
12 120 65 2.0 3548 .0023 1665 1 3
13 20 .0009
14 20 .0009
15 120 115 2.0 20 .0023 1752 1 3
16 4130 .0009
17 4130 .0009
18 958 .0009
19 958 .0009
20 958 .0009
21 120 94 2.0 958 .0023 1523 1 3
22 45 .0009
23 85 .0009
24 120 109 2.0 85 .0023 1694 1 3
25 739 .0009
26 739 .0009
27 739 .0009
```

```
1B1A1409.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 1
TIME : 19:53: 2
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*---------------------------------------*---------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 2
TIME : 19:53: 2
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*---------------------------------------*---------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
Page 1
1B1A1409.OUT
21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 3
TIME : 19:53: 2
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*---
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
WIND DIR* 275 275 270 270 290 285 270 280 305 290
JULIAN * 1 1 1 1 1 1 1 1 2 1
HOUR * 19 19 18 18 22 21 18 20 1 22
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*---
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
WIND DIR* 235 225 225 235 250 0 0 0 0 185
JULIAN * 1 1 1 1 1 0 0 0 0 1
HOUR * 11 9 9 11 14 0 0 0 0 1
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 0.2 0.3 0.3 0.2 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 0.2 0.3 0.3 0.2 0.1
WIND DIR* 230 255 255 185 220
JULIAN * 1 1 1 1 1
HOUR * 10 15 15 1 8
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 4
TIME : 19:53: 2
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
THE HIGHEST CONCENTRATION OF 0.30 UG/M**3 OCCURRED AT RECEPTOR REC22.
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 5
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.196*(2,24) C 0 0.054 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 0.183 (2,24) C 0 0.058 (1,24) C 0 0.021 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 0.175 (2,24) C 0 0.063 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 0.171 (2,24) C 0 0.067 (1,24) C 0 0.021 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 0.013 (1,24) C 0 0.004 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 0.013 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 0.154 (2,24) C 0 0.063 (1,24) C 0 0.029 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 0.183 (2,24) C 0 0.033 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 0.192 (2,24) C 0 0.033 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 0.179 (2,24) C 0 0.050 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 0.112 (3,24) C 0 0.104 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 0.121 (1,24) C 0 0.117 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 0.117 (3,24) C 0 0.112 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 0.088 (1,24) C 0 0.075 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 0.004 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 0.046 (1,24) C 0 0.021 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 0.100 (3,24) C 0 0.096 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 0.150 (1,24) C 0 0.150 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 0.163 (3,24) C 0 0.150 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 0.163 (3,24) C 0 0.154*(1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 0.013 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 0.092 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 6
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.087 (3,24) C 0
3 0.087 (3,24) C 0
4 0.086 (3,24) C 0
5 0.006 (3,24) C 0
6 0.004 (3,24) C 0
7 0.082 (3,24) C 0
8 0.081 (3,24) C 0
9 0.083 (3,24) C 0
10 0.085 (3,24) C 0
11 0.072 (3,24) C 0
12 0.079 (3,24) C 0
13 0.076 (3,24) C 0
14 0.054 (3,24) C 0
15 0.001 (3,24) C 0
16 0.000 (1, 0) C 0
17 0.000 (1, 0) C 0
18 0.000 (1, 0) C 0

```
19 0.000 ( 1, 0) C 0
20 0.022 ( 3,24) C 0
21 0.065 ( 3,24) C 0
22 0.100 ( 3,24) C 0
23 0.104 ( 3,24) C 0
24 0.106* ( 3,24) C 0
25 0.004 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.196 ( 2,24) 0.00 0.20 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.183 ( 2,24) 0.00 0.18 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.175 ( 2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 7
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.171 ( 2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.154 ( 2,24) 0.00 0.15 0.00 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.183 ( 2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.192 ( 2,24) 0.00 0.19 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Page 3
1B1A1409.OUT
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.179 ( 2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.02
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.112 ( 3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.11
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.121 ( 1,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.117 ( 3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.088 ( 1,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.004 ( 1,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 8
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.046 ( 1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.100 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 ( 1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.163 ( 3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.163 ( 3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```

Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.054 (1,24) 0.00 0.05 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 9
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.058 (1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.063 (1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.067 (1,24) 0.00 0.07 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.004 (2,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Page 4
1B1A1409.OUT
6 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
7 0.063 (1,24) 0.00 0.06 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.033 (1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.033 (1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.050 (1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.104 (1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.117 (3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.112 (1,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.075 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 10
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
16 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.021 (3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.096 (1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 (3,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.07 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.150 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.154 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 11
TIME : 19:53:18

JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

```
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.092 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.087 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.087 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.086 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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5 0.006 ( 3,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.004 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.082 ( 3,24) 0.00 0.08 0.00 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.081 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.083 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.085 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.072 ( 3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.079 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.076 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 12
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

```
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.054 ( 3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.001 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.022 ( 3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.065 ( 3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.04 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.100 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.104 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.106 ( 3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.004 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```

 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 13
TIME : 19:53:18
JOB: Site 1 Opt 1/2 2014 1B1A1409.DA3 RUN: BENZOB
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1410.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BENZOK' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0009
2 1606 .0009
3 120 57 2.0 1606 .0023 1679 1 3
4 527 .0009
5 120 107 2.0 527 .0023 1700 1 3
6 1830 .0009
7 1830 .0009
8 1830 .0009
9 3568 .0009
10 3568 .0009
11 3548 .0009
12 120 65 2.0 3548 .0023 1665 1 3
13 20 .0009
14 20 .0009
15 120 115 2.0 20 .0023 1752 1 3
16 4130 .0009
17 4130 .0009
18 958 .0009
19 958 .0009
20 958 .0009
21 120 94 2.0 958 .0023 1523 1 3
22 45 .0009
23 85 .0009
24 120 109 2.0 85 .0023 1694 1 3
25 739 .0009
26 739 .0009
27 739 .0009
```

```
1B1A1410.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 1
TIME : 20:24:35
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 2
TIME : 20:24:35
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
Page 1
1B1A1410.OUT
21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 3
TIME : 20:24:35
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

```
concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*------------------------------------------------------------------------------
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*------------------------------------------------------------------------------
MAX * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
WIND DIR* 275 275 270 270 290 285 270 280 305 290
JULIAN * 1 1 1 1 1 1 1 1 2 1
HOUR * 19 19 18 18 22 21 18 20 1 22
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*------------------------------------------------------------------------------
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*------------------------------------------------------------------------------
MAX * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
WIND DIR* 235 225 225 235 250 0 0 0 0 185
JULIAN * 1 1 1 1 1 0 0 0 0 1
HOUR * 11 9 9 11 14 0 0 0 0 1
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 0.2 0.3 0.3 0.2 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 0.2 0.3 0.3 0.2 0.1
WIND DIR* 230 255 255 185 220
JULIAN * 1 1 1 1 1
HOUR * 10 15 15 1 8
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 4
TIME : 20:24:35
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
THE HIGHEST CONCENTRATION OF 0.30 UG/M**3 OCCURRED AT RECEPTOR REC22.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 5
TIME : 20:24:49
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.196*( 2,24) C 0 0.054 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 0.183 ( 2,24) C 0 0.058 ( 1,24) C 0 0.021 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 0.175 ( 2,24) C 0 0.063 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 0.171 ( 2,24) C 0 0.067 ( 1,24) C 0 0.021 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 0.013 ( 1,24) C 0 0.004 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 0.013 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 0.154 ( 2,24) C 0 0.063 ( 1,24) C 0 0.029 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 0.183 ( 2,24) C 0 0.033 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
```


```
9 0.192 ( 2,24) C 0 0.033 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 0.179 ( 2,24) C 0 0.050 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 0.112 ( 3,24) C 0 0.104 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 0.121 ( 1,24) C 0 0.117 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 0.117 ( 3,24) C 0 0.112 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 0.088 ( 1,24) C 0 0.075 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 0.004 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 0.046 ( 1,24) C 0 0.021 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 0.100 ( 3,24) C 0 0.096 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 0.150 ( 1,24) C 0 0.150 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 0.163 ( 3,24) C 0 0.150 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 0.163 ( 3,24) C 0 0.154*( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 0.013 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 0.092 ( 3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 6
TIME : 20:24:49
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.087 ( 3,24) C 0
3 0.087 ( 3,24) C 0
4 0.086 ( 3,24) C 0
5 0.006 ( 3,24) C 0
6 0.004 ( 3,24) C 0
7 0.082 ( 3,24) C 0
8 0.081 ( 3,24) C 0
9 0.083 ( 3,24) C 0
10 0.085 ( 3,24) C 0
11 0.072 ( 3,24) C 0
12 0.079 ( 3,24) C 0
13 0.076 ( 3,24) C 0
14 0.054 ( 3,24) C 0
15 0.001 ( 3,24) C 0
16 0.000 ( 1, 0) C 0
17 0.000 ( 1, 0) C 0
18 0.000 ( 1, 0) C 0
```

```
19 0.000 ( 1, 0) C 0
20 0.022 ( 3,24) C 0
21 0.065 ( 3,24) C 0
22 0.100 ( 3,24) C 0
23 0.104 ( 3,24) C 0
24 0.106* ( 3,24) C 0
25 0.004 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.196 ( 2,24) 0.00 0.20 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.183 ( 2,24) 0.00 0.18 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.175 ( 2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 7
TIME : 20:24:49
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.171 ( 2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.154 ( 2,24) 0.00 0.15 0.00 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.183 ( 2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.192 ( 2,24) 0.00 0.19 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


```
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.179 ( 2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.02
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.112 ( 3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.11
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.121 ( 1,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.117 ( 3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.088 ( 1,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.004 ( 1,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 8
TIME : 20:24:49
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.046 ( 1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.100 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 ( 1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.163 ( 3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.163 ( 3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```

Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.054 (1,24) 0.00 0.05 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.058 (1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.063 (1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.067 (1,24) 0.00 0.07 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.004 (2,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
7 0.063 (1,24) 0.00 0.06 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.033 (1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.033 (1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.050 (1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.104 (1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.117 (3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.112 (1,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.075 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
16 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.021 (3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.096 (1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 (3,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.07 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.150 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.154 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00

```
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.092 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.087 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.087 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.086 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Page 5
1B1A1410.OUT
5 0.006 ( 3,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.004 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.082 ( 3,24) 0.00 0.08 0.00 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.081 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.083 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.085 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.072 ( 3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.079 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.076 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 12
TIME : 20:24:49
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.054 ( 3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.001 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.022 ( 3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.065 ( 3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.04 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.100 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.104 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.106 ( 3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.004 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 13
TIME : 20:24:49
JOB: Site 1 Opt 1/2 2014 1B1A1410.DA3 RUN: BENZOK
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
Page 6
```

```
'Site 1 Opt 1/2 2014 1B1A1411.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BENZA' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0017
2 1606 .0017
3 120 57 2.0 1606 .0043 1679 1 3
4 527 .0017
5 120 107 2.0 527 .0043 1700 1 3
6 1830 .0017
7 1830 .0017
8 1830 .0017
9 3568 .0017
10 3568 .0017
11 3548 .0017
12 120 65 2.0 3548 .0043 1665 1 3
13 20 .0017
14 20 .0017
15 120 115 2.0 20 .0043 1752 1 3
16 4130 .0017
17 4130 .0017
18 958 .0017
19 958 .0017
20 958 .0017
21 120 94 2.0 958 .0043 1523 1 3
22 45 .0017
23 85 .0017
24 120 109 2.0 85 .0043 1694 1 3
25 739 .0017
26 739 .0017
27 739 .0017
```

```
1B1A1411.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

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concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 0.4 0.4 0.4 0.4 0.2 0.2 0.4 0.4 0.5 0.4
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 0.4 0.4 0.4 0.4 0.2 0.2 0.4 0.4 0.5 0.4
WIND DIR* 285 280 280 280 290 290 290 280 290 280
JULIAN * 1 1 1 1 1 1 1 1 1 1
HOUR * 21 20 20 20 22 22 22 20 22 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 0.5 0.5 0.5 0.4 0.3 0.2 0.2 0.1 0.2 0.3
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 0.5 0.5 0.5 0.4 0.3 0.2 0.2 0.1 0.2 0.3
WIND DIR* 245 240 250 230 230 230 225 220 185 165
JULIAN * 1 1 1 1 1 1 1 1 1 3
HOUR * 13 12 14 10 10 10 9 8 1 21
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 0.5 0.6 0.6 0.6 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 0.5 0.6 0.6 0.6 0.1
WIND DIR* 240 245 115 245 185
JULIAN * 1 1 3 1 1
HOUR * 12 13 11 13 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
THE HIGHEST CONCENTRATION OF 0.60 UG/M**3 OCCURRED AT RECEPTOR REC22.
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 5
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.229 ( 2,24) C 0 0.117 ( 1,24) C 0 0.063 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 0.246 ( 2,24) C 0 0.117 ( 1,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 0.238 ( 2,24) C 0 0.121 ( 1,24) C 0 0.058 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 0.229 ( 2,24) C 0 0.121 ( 1,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 0.162 ( 2,24) C 0 0.037 ( 1,24) C 0 0.004 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 0.154 ( 2,24) C 0 0.037 ( 1,24) C 0 0.004 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 0.225 ( 2,24) C 0 0.121 ( 1,24) C 0 0.063 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 0.229 ( 2,24) C 0 0.121 ( 1,24) C 0 0.075 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
Page 2
1B1A1411.OUT
9 0.233 ( 2,24) C 0 0.129 ( 1,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 0.233 ( 2,24) C 0 0.117 ( 1,24) C 0 0.075 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 0.296 ( 3,24) C 0 0.288 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 0.338 ( 3,24) C 0 0.325 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 0.333 ( 3,24) C 0 0.317 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 0.225 ( 3,24) C 0 0.183 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 0.171 ( 1,24) C 0 0.054 ( 3,24) C 0 0.013 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 0.100 ( 1,24) C 0 0.042 ( 2,24) C 0 0.038 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 0.100 ( 1,24) C 0 0.088 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 0.083 ( 3,24) C 0 0.046 ( 2,24) C 0 0.021 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 0.121 ( 3,24) C 0 0.071 ( 1,24) C 0 0.046 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 0.171 ( 3,24) C 0 0.088 ( 1,24) C 0 0.033 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 0.287 ( 3,24) C 0 0.246 ( 1,24) C 0 0.029 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 0.383 ( 3,24) C 0 0.371 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 0.396*( 3,24) C 0 0.363 ( 1,24) C 0 0.004 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 0.379 ( 3,24) C 0 0.375*( 1,24) C 0 0.008 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 0.058 ( 1,24) C 0 0.058 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 0.136 ( 3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 6
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.144 ( 3,24) C 0
3 0.139 ( 3,24) C 0
4 0.140 ( 3,24) C 0
5 0.068 ( 3,24) C 0
6 0.065 ( 3,24) C 0
7 0.136 ( 3,24) C 0
8 0.142 ( 3,24) C 0
9 0.144 ( 3,24) C 0
10 0.142 ( 3,24) C 0
11 0.194 ( 3,24) C 0
12 0.221 ( 3,24) C 0
13 0.217 ( 3,24) C 0
14 0.136 ( 3,24) C 0
15 0.079 ( 3,24) C 0
16 0.060 ( 3,24) C 0
17 0.062 ( 3,24) C 0
18 0.050 ( 3,24) C 0
```

```
19 0.079 ( 3,24) C 0
20 0.097 ( 3,24) C 0
21 0.187 ( 3,24) C 0
22 0.251 ( 3,24) C 0
23 0.254 ( 3,24) C 0
24 0.254* ( 3,24) C 0
25 0.039 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.229 ( 2,24) 0.00 0.23 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.246 ( 2,24) 0.00 0.25 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.238 ( 2,24) 0.00 0.24 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.06 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 7
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.229 ( 2,24) 0.00 0.23 0.00 0.10 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.07 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.162 ( 2,24) 0.00 0.16 0.00 0.05 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.04 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.154 ( 2,24) 0.00 0.15 0.00 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.03 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.225 ( 2,24) 0.00 0.23 0.00 0.06 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.229 ( 2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.233 ( 2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00 0.01
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


```
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.233 ( 2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00 0.03
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.296 ( 3,24) 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.02 0.23
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.338 ( 3,24) 0.00 0.34 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.06
Links 10+ 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.333 ( 3,24) 0.00 0.33 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.03
Links 10+ 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.225 ( 3,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.01
Links 10+ 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.171 ( 1,24) 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.09 0.00 0.00 0.00 0.00 0.00
16 0.100 ( 1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 8
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.100 ( 1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.09 0.00 0.00 0.00
18 0.083 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
19 0.121 ( 3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.05
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.171 ( 3,24) 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.10
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.287 ( 3,24) 0.00 0.29 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.07
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.383 ( 3,24) 0.00 0.38 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.16 0.14 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.396 ( 3,24) 0.00 0.40 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.04 0.28 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.379 ( 3,24) 0.00 0.38 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.31 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.058 ( 1,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```

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Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.117 ( 1,24) 0.00 0.12 0.03 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 9
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.117 ( 1,24) 0.00 0.12 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.121 ( 1,24) 0.00 0.12 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.121 ( 1,24) 0.00 0.12 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.037 ( 1,24) 0.00 0.04 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


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6 0.037 ( 1,24) 0.00 0.04 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.121 ( 1,24) 0.00 0.12 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.121 ( 1,24) 0.00 0.12 0.00 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.129 ( 1,24) 0.00 0.13 0.00 0.01 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.117 ( 1,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.288 ( 1,24) 0.00 0.29 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.14
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.325 ( 1,24) 0.00 0.33 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.25 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.317 ( 1,24) 0.00 0.32 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.23 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.183 ( 1,24) 0.00 0.18 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 10
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.054 ( 3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.042 ( 2,24) 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
17 0.088 ( 2,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00
18 0.046 ( 2,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
19 0.071 ( 1,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.04 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.088 ( 1,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.246 ( 1,24) 0.00 0.25 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.11 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.371 ( 1,24) 0.00 0.37 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.363 ( 1,24) 0.00 0.36 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.375 ( 1,24) 0.00 0.38 0.03 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.058 ( 3,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 11
TIME : 12:32: 3
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JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.136 ( 3,24) 0.00 0.14 0.01 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.144 ( 3,24) 0.00 0.14 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.139 ( 3,24) 0.00 0.14 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.140 ( 3,24) 0.00 0.14 0.00 0.07 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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5 0.068 ( 3,24) 0.00 0.07 0.00 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.065 ( 3,24) 0.00 0.07 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.136 ( 3,24) 0.00 0.14 0.00 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.142 ( 3,24) 0.00 0.14 0.00 0.01 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.144 ( 3,24) 0.00 0.14 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.142 ( 3,24) 0.00 0.14 0.00 0.00 0.00 0.00 0.00 0.08 0.01 0.00 0.00 0.02
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.194 ( 3,24) 0.00 0.19 0.00 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.01 0.13
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.221 ( 3,24) 0.00 0.22 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.02
Links 10+ 0.16 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.217 ( 3,24) 0.00 0.22 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.16 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 12
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.136 ( 3,24) 0.00 0.14 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.079 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
16 0.060 ( 3,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
17 0.062 ( 3,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
18 0.050 ( 3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.04 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
19 0.079 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.03 0.02
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.097 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.05
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.187 ( 3,24) 0.00 0.19 0.00 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.03
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.251 ( 3,24) 0.00 0.25 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.05 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.254 ( 3,24) 0.00 0.25 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.20 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.254 ( 3,24) 0.00 0.25 0.01 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.21 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.039 ( 3,24) 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 13
TIME : 12:32: 3
JOB: Site 1 Opt 1/2 2014 1B1A1411.DA3 RUN: BENZA
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
```

```
'Site 1 Opt 1/2 2014 1B1A1412.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BENZOA' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0009
2 1606 .0009
3 120 57 2.0 1606 .0023 1679 1 3
4 527 .0009
5 120 107 2.0 527 .0023 1700 1 3
6 1830 .0009
7 1830 .0009
8 1830 .0009
9 3568 .0009
10 3568 .0009
11 3548 .0009
12 120 65 2.0 3548 .0023 1665 1 3
13 20 .0009
14 20 .0009
15 120 115 2.0 20 .0023 1752 1 3
16 4130 .0009
17 4130 .0009
18 958 .0009
19 958 .0009
20 958 .0009
21 120 94 2.0 958 .0023 1523 1 3
22 45 .0009
23 85 .0009
24 120 109 2.0 85 .0023 1694 1 3
25 739 .0009
26 739 .0009
27 739 .0009
```

```
1B1A1412.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 1
TIME : 21:17:21
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 2
TIME : 21:17:21
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 3
TIME : 21:17:21
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*---
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
WIND DIR* 275 275 270 270 290 285 270 280 305 290
JULIAN * 1 1 1 1 1 1 1 1 2 1
HOUR * 19 19 18 18 22 21 18 20 1 22
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*---
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
WIND DIR* 235 225 225 235 250 0 0 0 0 185
JULIAN * 1 1 1 1 1 0 0 0 0 1
HOUR * 11 9 9 11 14 0 0 0 0 1
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 0.2 0.3 0.3 0.2 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 0.2 0.3 0.3 0.2 0.1
WIND DIR* 230 255 255 185 220
JULIAN * 1 1 1 1 1
HOUR * 10 15 15 1 8
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 4
TIME : 21:17:21
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
THE HIGHEST CONCENTRATION OF 0.30 UG/M**3 OCCURRED AT RECEPTOR REC22.
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 5
TIME : 21:17:36
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.196*(2,24) C 0 0.054 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 0.183 (2,24) C 0 0.058 (1,24) C 0 0.021 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 0.175 (2,24) C 0 0.063 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 0.171 (2,24) C 0 0.067 (1,24) C 0 0.021 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 0.013 (1,24) C 0 0.004 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 0.013 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 0.154 (2,24) C 0 0.063 (1,24) C 0 0.029 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 0.183 (2,24) C 0 0.033 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 0.192 (2,24) C 0 0.033 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 0.179 (2,24) C 0 0.050 (1,24) C 0 0.025 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 0.112 (3,24) C 0 0.104 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 0.121 (1,24) C 0 0.117 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 0.117 (3,24) C 0 0.112 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 0.088 (1,24) C 0 0.075 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 0.004 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 0.046 (1,24) C 0 0.021 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 0.100 (3,24) C 0 0.096 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 0.150 (1,24) C 0 0.150 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 0.163 (3,24) C 0 0.150 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 0.163 (3,24) C 0 0.154*(1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 0.013 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 0.092 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 6
TIME : 21:17:36
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.087 (3,24) C 0
3 0.087 (3,24) C 0
4 0.086 (3,24) C 0
5 0.006 (3,24) C 0
6 0.004 (3,24) C 0
7 0.082 (3,24) C 0
8 0.081 (3,24) C 0
9 0.083 (3,24) C 0
10 0.085 (3,24) C 0
11 0.072 (3,24) C 0
12 0.079 (3,24) C 0
13 0.076 (3,24) C 0
14 0.054 (3,24) C 0
15 0.001 (3,24) C 0
16 0.000 (1, 0) C 0
17 0.000 (1, 0) C 0
18 0.000 (1, 0) C 0

```
19 0.000 ( 1, 0) C 0
20 0.022 ( 3,24) C 0
21 0.065 ( 3,24) C 0
22 0.100 ( 3,24) C 0
23 0.104 ( 3,24) C 0
24 0.106* ( 3,24) C 0
25 0.004 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.196 ( 2,24) 0.00 0.20 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.183 ( 2,24) 0.00 0.18 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.175 ( 2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.171 ( 2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.154 ( 2,24) 0.00 0.15 0.00 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.183 ( 2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.192 ( 2,24) 0.00 0.19 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


```
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.179 ( 2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.02
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.112 ( 3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.11
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.121 ( 1,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.117 ( 3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.088 ( 1,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.004 ( 1,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
```

```
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.046 ( 1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.100 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 ( 1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.163 ( 3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.163 ( 3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.013 ( 1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```

```
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.054 ( 1,24) 0.00 0.05 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 9
TIME : 21:17:36
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.058 ( 1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.063 ( 1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.067 ( 1,24) 0.00 0.07 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.004 ( 2,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


```
6 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
7 0.063 ( 1,24) 0.00 0.06 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.033 ( 1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.033 ( 1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.050 ( 1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.104 ( 1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.117 ( 3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.112 ( 1,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.075 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 10
TIME : 21:17:36
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.021 ( 3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.096 ( 1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 ( 3,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.07 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.150 ( 1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.154 ( 1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 11
TIME : 21:17:36
```

JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.092 (3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.087 (3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.087 (3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.086 (3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

5 0.006 (3,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.004 (3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.082 (3,24) 0.00 0.08 0.00 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.081 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.083 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.085 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.072 (3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.079 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.076 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 12
TIME : 21:17:36
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.054 (3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.001 (3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.022 (3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.065 (3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.04 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.100 (3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.104 (3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.106 (3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.004 (3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 13
TIME : 21:17:36
JOB: Site 1 Opt 1/2 2014 1B1A1412.DA3 RUN: BENZOA
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1413.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'BENZOGHI' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0015
2 1606 .0015
3 120 57 2.0 1606 .0037 1679 1 3
4 527 .0015
5 120 107 2.0 527 .0037 1700 1 3
6 1830 .0015
7 1830 .0015
8 1830 .0015
9 3568 .0015
10 3568 .0015
11 3548 .0015
12 120 65 2.0 3548 .0037 1665 1 3
13 20 .0015
14 20 .0015
15 120 115 2.0 20 .0037 1752 1 3
16 4130 .0015
17 4130 .0015
18 958 .0015
19 958 .0015
20 958 .0015
21 120 94 2.0 958 .0037 1523 1 3
22 45 .0015
23 85 .0015
24 120 109 2.0 85 .0037 1694 1 3
25 739 .0015
26 739 .0015
27 739 .0015
```

```
1B1A1413.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 1
TIME : 21:52: 0
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 2
TIME : 21:52: 0
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 3
TIME : 21:52: 0
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*--
MAX+BKG * 0.4 0.4 0.4 0.4 0.2 0.2 0.4 0.4 0.5 0.4
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 0.4 0.4 0.4 0.4 0.2 0.2 0.4 0.4 0.5 0.4
WIND DIR* 285 280 280 280 290 290 290 280 290 280
JULIAN * 1 1 1 1 1 1 1 1 1 1
HOUR * 21 20 20 20 22 22 22 20 22 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*--
MAX+BKG * 0.5 0.5 0.5 0.4 0.3 0.2 0.2 0.1 0.2 0.3
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 0.5 0.5 0.5 0.4 0.3 0.2 0.2 0.1 0.2 0.3
WIND DIR* 245 240 250 230 230 230 225 220 185 165
JULIAN * 1 1 1 1 1 1 1 1 1 3
HOUR * 13 12 14 10 10 10 9 8 1 21
* REC21 REC22 REC23 REC24 REC25
--------*--
MAX+BKG * 0.5 0.6 0.6 0.6 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 0.5 0.6 0.6 0.6 0.1
WIND DIR* 240 245 115 245 185
JULIAN * 1 1 3 1 1
HOUR * 12 13 11 13 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 4
TIME : 21:52: 0
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
THE HIGHEST CONCENTRATION OF 0.60 UG/M**3 OCCURRED AT RECEPTOR REC22.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 5
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.229 (2,24) C 0 0.117 (1,24) C 0 0.063 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 0.246 (2,24) C 0 0.117 (1,24) C 0 0.071 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 0.238 (2,24) C 0 0.121 (1,24) C 0 0.058 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 0.229 (2,24) C 0 0.121 (1,24) C 0 0.071 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 0.162 (2,24) C 0 0.037 (1,24) C 0 0.004 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 0.154 (2,24) C 0 0.037 (1,24) C 0 0.004 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 0.225 (2,24) C 0 0.121 (1,24) C 0 0.063 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 0.229 (2,24) C 0 0.121 (1,24) C 0 0.075 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 0.233 (2,24) C 0 0.129 (1,24) C 0 0.071 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 0.233 (2,24) C 0 0.117 (1,24) C 0 0.075 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 0.296 (3,24) C 0 0.288 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 0.338 (3,24) C 0 0.325 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 0.333 (3,24) C 0 0.317 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 0.225 (3,24) C 0 0.183 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 0.171 (1,24) C 0 0.054 (3,24) C 0 0.013 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 0.100 (1,24) C 0 0.042 (2,24) C 0 0.038 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 0.100 (1,24) C 0 0.088 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 0.083 (3,24) C 0 0.046 (2,24) C 0 0.021 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 0.121 (3,24) C 0 0.071 (1,24) C 0 0.046 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 0.171 (3,24) C 0 0.088 (1,24) C 0 0.033 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 0.287 (3,24) C 0 0.246 (1,24) C 0 0.029 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 0.383 (3,24) C 0 0.371 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 0.396*(3,24) C 0 0.363 (1,24) C 0 0.004 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 0.379 (3,24) C 0 0.375*(1,24) C 0 0.008 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 0.058 (1,24) C 0 0.058 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 0.136 (3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 6
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.144 (3,24) C 0
3 0.139 (3,24) C 0
4 0.140 (3,24) C 0
5 0.068 (3,24) C 0
6 0.065 (3,24) C 0
7 0.136 (3,24) C 0
8 0.142 (3,24) C 0
9 0.144 (3,24) C 0
10 0.142 (3,24) C 0
11 0.194 (3,24) C 0
12 0.221 (3,24) C 0
13 0.217 (3,24) C 0
14 0.136 (3,24) C 0
15 0.079 (3,24) C 0
16 0.060 (3,24) C 0
17 0.062 (3,24) C 0
18 0.050 (3,24) C 0

```
19 0.079 ( 3,24) C 0
20 0.097 ( 3,24) C 0
21 0.187 ( 3,24) C 0
22 0.251 ( 3,24) C 0
23 0.254 ( 3,24) C 0
24 0.254* ( 3,24) C 0
25 0.039 ( 3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.229 ( 2,24) 0.00 0.23 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.246 ( 2,24) 0.00 0.25 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.238 ( 2,24) 0.00 0.24 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.06 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 7
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.229 ( 2,24) 0.00 0.23 0.00 0.10 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.07 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.162 ( 2,24) 0.00 0.16 0.00 0.05 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.04 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.154 ( 2,24) 0.00 0.15 0.00 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.03 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.225 ( 2,24) 0.00 0.23 0.00 0.06 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.229 ( 2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.233 ( 2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00 0.01
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


```
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.233 ( 2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00 0.03
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.296 ( 3,24) 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.02 0.23
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.338 ( 3,24) 0.00 0.34 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.06
Links 10+ 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.333 ( 3,24) 0.00 0.33 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.03
Links 10+ 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.225 ( 3,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.01
Links 10+ 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.171 ( 1,24) 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.09 0.00 0.00 0.00 0.00 0.00
16 0.100 ( 1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 8
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.100 ( 1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.09 0.00 0.00 0.00
18 0.083 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
19 0.121 ( 3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.05
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.171 ( 3,24) 0.00 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.10
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.287 ( 3,24) 0.00 0.29 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.07
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.383 ( 3,24) 0.00 0.38 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.16 0.14 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.396 ( 3,24) 0.00 0.40 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.04 0.28 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.379 ( 3,24) 0.00 0.38 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.31 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.058 ( 1,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```

Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.117 (1,24) 0.00 0.12 0.03 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 9
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.117 (1,24) 0.00 0.12 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.121 (1,24) 0.00 0.12 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.121 (1,24) 0.00 0.12 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.037 (1,24) 0.00 0.04 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.037 (1,24) 0.00 0.04 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.121 (1,24) 0.00 0.12 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.121 (1,24) 0.00 0.12 0.00 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.129 (1,24) 0.00 0.13 0.00 0.01 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.117 (1,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.288 (1,24) 0.00 0.29 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.14
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.325 (1,24) 0.00 0.33 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.25 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.317 (1,24) 0.00 0.32 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.23 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.183 (1,24) 0.00 0.18 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 10
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.054 (3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.042 (2,24) 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
17 0.088 (2,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00
18 0.046 (2,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
19 0.071 (1,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.04 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.088 (1,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.246 (1,24) 0.00 0.25 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.11 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.371 (1,24) 0.00 0.37 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.363 (1,24) 0.00 0.36 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.375 (1,24) 0.00 0.38 0.03 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.058 (3,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 11
TIME : 21:52:14

JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.136 (3,24) 0.00 0.14 0.01 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.144 (3,24) 0.00 0.14 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.139 (3,24) 0.00 0.14 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.140 (3,24) 0.00 0.14 0.00 0.07 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

5 0.068 (3,24) 0.00 0.07 0.00 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.065 (3,24) 0.00 0.07 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.136 (3,24) 0.00 0.14 0.00 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.142 (3,24) 0.00 0.14 0.00 0.01 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.144 (3,24) 0.00 0.14 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.142 (3,24) 0.00 0.14 0.00 0.00 0.00 0.00 0.00 0.08 0.01 0.00 0.00 0.02
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.194 (3,24) 0.00 0.19 0.00 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.01 0.13
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.221 (3,24) 0.00 0.22 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.02
Links 10+ 0.16 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.217 (3,24) 0.00 0.22 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.16 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 12
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.136 (3,24) 0.00 0.14 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.079 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
16 0.060 (3,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
17 0.062 (3,24) 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
18 0.050 (3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.04 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
19 0.079 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.03 0.02
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
20 0.097 (3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.05
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.187 (3,24) 0.00 0.19 0.00 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.03
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.251 (3,24) 0.00 0.25 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.05 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.254 (3,24) 0.00 0.25 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.20 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.254 (3,24) 0.00 0.25 0.01 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.21 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.039 (3,24) 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 6/10 PAGE: 13
TIME : 21:52:14
JOB: Site 1 Opt 1/2 2014 1B1A1413.DA3 RUN: BENZOGHI
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1414.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'CHRYSENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0007
2 1606 .0007
3 120 57 2.0 1606 .0018 1679 1 3
4 527 .0007
5 120 107 2.0 527 .0018 1700 1 3
6 1830 .0007
7 1830 .0007
8 1830 .0007
9 3568 .0007
10 3568 .0007
11 3548 .0007
12 120 65 2.0 3548 .0018 1665 1 3
13 20 .0007
14 20 .0007
15 120 115 2.0 20 .0018 1752 1 3
16 4130 .0007
17 4130 .0007
18 958 .0007
19 958 .0007
20 958 .0007
21 120 94 2.0 958 .0018 1523 1 3
22 45 .0007
23 85 .0007
24 120 109 2.0 85 .0018 1694 1 3
25 739 .0007
26 739 .0007
27 739 .0007
```

```
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 1
TIME : 21:12: 6
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 2
TIME : 21:12: 6
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 3
TIME : 21:12: 6
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

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concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 0.2 0.2 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.2
WIND DIR* 275 275 270 270 290 285 270 280 305 290
JULIAN * 1 1 1 1 1 1 1 1 2 1
HOUR * 19 19 18 18 22 21 18 20 1 22
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 0.2 0.2 0.2 0.2 0.1 0.0 0.0 0.0 0.0 0.1
WIND DIR* 235 225 225 235 250 0 0 0 0 185
JULIAN * 1 1 1 1 1 0 0 0 0 1
HOUR * 11 9 9 11 14 0 0 0 0 1
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 0.2 0.3 0.3 0.2 0.1
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 0.2 0.3 0.3 0.2 0.1
WIND DIR* 230 255 255 185 220
JULIAN * 1 1 1 1 1
HOUR * 10 15 15 1 8
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 4
TIME : 21:12: 6
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
THE HIGHEST CONCENTRATION OF 0.30 UG/M**3 OCCURRED AT RECEPTOR REC22.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 5
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.196*( 2,24) C 0 0.054 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 0.183 ( 2,24) C 0 0.058 ( 1,24) C 0 0.021 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 0.175 ( 2,24) C 0 0.063 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 0.171 ( 2,24) C 0 0.067 ( 1,24) C 0 0.021 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 0.013 ( 1,24) C 0 0.004 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 0.013 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 0.154 ( 2,24) C 0 0.063 ( 1,24) C 0 0.029 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 0.183 ( 2,24) C 0 0.033 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
```


```
9 0.192 ( 2,24) C 0 0.033 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 0.179 ( 2,24) C 0 0.050 ( 1,24) C 0 0.025 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 0.112 ( 3,24) C 0 0.104 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 0.121 ( 1,24) C 0 0.117 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 0.117 ( 3,24) C 0 0.112 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 0.088 ( 1,24) C 0 0.075 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 0.004 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 0.046 ( 1,24) C 0 0.021 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 0.100 ( 3,24) C 0 0.096 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 0.150 ( 1,24) C 0 0.150 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 0.163 ( 3,24) C 0 0.150 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 0.163 ( 3,24) C 0 0.154*( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 0.013 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 0.092 ( 3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 6
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.087 ( 3,24) C 0
3 0.087 ( 3,24) C 0
4 0.086 ( 3,24) C 0
5 0.006 ( 3,24) C 0
6 0.004 ( 3,24) C 0
7 0.082 ( 3,24) C 0
8 0.081 ( 3,24) C 0
9 0.083 ( 3,24) C 0
10 0.085 ( 3,24) C 0
11 0.072 ( 3,24) C 0
12 0.079 ( 3,24) C 0
13 0.076 ( 3,24) C 0
14 0.054 ( 3,24) C 0
15 0.001 ( 3,24) C 0
16 0.000 ( 1, 0) C 0
17 0.000 ( 1, 0) C 0
18 0.000 ( 1, 0) C 0
```

19 0.000 (1, 0) C 0
20 0.022 (3,24) C 0
21 0.065 (3,24) C 0
22 0.100 (3,24) C 0
23 0.104 (3,24) C 0
24 0.106* (3,24) C 0
25 0.004 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.196 (2,24) 0.00 0.20 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.183 (2,24) 0.00 0.18 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.175 (2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 7
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.171 (2,24) 0.00 0.17 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.013 (1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.013 (1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.154 (2,24) 0.00 0.15 0.00 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.183 (2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.192 (2,24) 0.00 0.19 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.179 (2,24) 0.00 0.18 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00 0.02
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.112 (3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.11
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.121 (1,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.117 (3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.088 (1,24) 0.00 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.004 (1,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 8
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.046 (1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.100 (3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.163 (3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.163 (3,24) 0.00 0.16 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.013 (1,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.054 (1,24) 0.00 0.05 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 9
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.058 (1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.063 (1,24) 0.00 0.06 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.067 (1,24) 0.00 0.07 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.004 (2,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
7 0.063 (1,24) 0.00 0.06 0.00 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.033 (1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.033 (1,24) 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.050 (1,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.104 (1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.117 (3,24) 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.112 (1,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.075 (3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 10
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
16 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.021 (3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.096 (1,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.05 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.150 (3,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.07 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.150 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.154 (1,24) 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.000 (1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 11
TIME : 21:12:22

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JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.092 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.087 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.087 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.086 ( 3,24) 0.00 0.09 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
```


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5 0.006 ( 3,24) 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.004 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.082 ( 3,24) 0.00 0.08 0.00 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
8 0.081 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.083 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.085 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.072 ( 3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.079 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.076 ( 3,24) 0.00 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 12
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.054 ( 3,24) 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
15 0.001 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
17 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
18 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
19 0.000 ( 1, 0) 0.00 NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 10+ NaN NaN NaN NaN NaN NaN NaN NaN NaN NaN
Links 20+ NaN NaN NaN NaN NaN NaN NaN 0.00 0.00 0.00
20 0.022 ( 3,24) 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.065 ( 3,24) 0.00 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.04 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 0.100 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.104 ( 3,24) 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.106 ( 3,24) 0.00 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.004 ( 3,24) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 13
TIME : 21:12:22
JOB: Site 1 Opt 1/2 2014 1B1A1414.DA3 RUN: CHRYSENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
```


'Site 1 Opt 1/2 2014 1B1A1415.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1

```
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'DIBENZO' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
```

```
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0000
2 1606 .0000
3 120 57 2.0 1606 .0000 1679 1 3
4 527 .0000
5 120 107 2.0 527 .0000 1700 1 3
6 1830 .0000
7 1830 .0000
8 1830 .0000
9 3568 .0000
10 3568 .0000
11 3548 .0000
12 120 65 2.0 3548 .0000 1665 1 3
13 20 .0000
14 20 .0000
15 120 115 2.0 20 .0000 1752 1 3
16 4130 .0000
17 4130 .0000
18 958 .0000
19 958 .0000
20 958 .0000
21 120 94 2.0 958 .0000 1523 1 3
22 45 .0000
23 85 .0000
24 120 109 2.0 85 .0000 1694 1 3
25 739 .0000
26 739 .0000
27 739 .0000
'Site 1 Opt 1/2 2014 1B1A1416.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
```

```
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'FLUORANTHENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
```

```
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0050
2 1606 .0050
3 120 57 2.0 1606 .0126 1679 1 3
4 527 .0050
5 120 107 2.0 527 .0126 1700 1 3
6 1830 .0050
7 1830 .0050
8 1830 .0050
9 3568 .0050
10 3568 .0050
11 3548 .0050
12 120 65 2.0 3548 .0126 1665 1 3
13 20 .0050
14 20 .0050
15 120 115 2.0 20 .0126 1752 1 3
16 4130 .0050
17 4130 .0050
18 958 .0050
19 958 .0050
20 958 .0050
21 120 94 2.0 958 .0126 1523 1 3
22 45 .0050
23 85 .0050
24 120 109 2.0 85 .0126 1694 1 3
25 739 .0050
26 739 .0050
27 739 .0050
```

```
1B1A1416.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 1
TIME : 22:15:31
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*---------------------------------------*---------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 2
TIME : 22:15:31
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*---------------------------------------*---------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


```
21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 3
TIME : 22:15:31
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

```
concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*-------------------------------------------------------------------------------
MAX+BKG * 1.1 1.2 1.2 1.2 0.6 0.6 1.4 1.2 1.1 1.1
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 1.1 1.2 1.2 1.2 0.6 0.6 1.4 1.2 1.1 1.1
WIND DIR* 65 50 280 275 5 0 280 285 70 280
JULIAN * 3 2 1 1 2 2 1 1 3 1
HOUR * 1 22 20 19 13 12 20 21 2 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*-------------------------------------------------------------------------------
MAX+BKG * 1.5 1.5 1.5 1.2 0.9 0.7 0.8 0.7 0.8 1.0
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*-------------------------------------------------------------------------------
MAX * 1.5 1.5 1.5 1.2 0.9 0.7 0.8 0.7 0.8 1.0
WIND DIR* 255 245 255 250 220 205 210 135 110 110
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 13 15 14 8 5 6 15 10 10
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 1.2 1.6 1.6 1.7 0.4
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 1.2 1.6 1.6 1.7 0.4
WIND DIR* 100 250 245 100 220
JULIAN * 3 1 1 3 1
HOUR * 8 14 13 8 8
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 4
TIME : 22:15:31
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
THE HIGHEST CONCENTRATION OF 1.70 UG/M**3 OCCURRED AT RECEPTOR REC24.
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 5
TIME : 22:15:50
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 0.912 ( 2,24) C 0 0.346 ( 1,24) C 0 0.242 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
2 1.021 ( 2,24) C 0 0.362 ( 1,24) C 0 0.250 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
3 1.013 ( 2,24) C 0 0.388 ( 1,24) C 0 0.233 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
4 0.883 ( 2,24) C 0 0.417 ( 1,24) C 0 0.296 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
5 0.404 ( 2,24) C 0 0.138 ( 1,24) C 0 0.062 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
6 0.404 ( 2,24) C 0 0.133 ( 1,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
7 0.812 ( 2,24) C 0 0.463 ( 1,24) C 0 0.225 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
8 0.787 ( 2,24) C 0 0.358 ( 1,24) C 0 0.246 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
```



```
9 0.762 ( 2,24) C 0 0.321 ( 1,24) C 0 0.254 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
10 0.767 ( 2,24) C 0 0.350 ( 1,24) C 0 0.229 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
11 0.921 ( 3,24) C 0 0.883 ( 1,24) C 0 0.004 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
12 1.004 ( 3,24) C 0 0.963 ( 1,24) C 0 0.054 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
13 0.996 ( 3,24) C 0 0.933 ( 1,24) C 0 0.083 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
14 0.717 ( 1,24) C 0 0.600 ( 3,24) C 0 0.142 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
15 0.542 ( 1,24) C 0 0.275 ( 3,24) C 0 0.229 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
16 0.467 ( 1,24) C 0 0.225 ( 2,24) C 0 0.183 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
17 0.521 ( 1,24) C 0 0.304 ( 2,24) C 0 0.071 ( 3,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
18 0.562 ( 3,24) C 0 0.233 ( 2,24) C 0 0.125 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
19 0.633 ( 3,24) C 0 0.292 ( 2,24) C 0 0.233 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
20 0.775 ( 3,24) C 0 0.354 ( 1,24) C 0 0.254 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
21 0.829 ( 3,24) C 0 0.708 ( 1,24) C 0 0.158 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
22 1.146*( 3,24) C 0 1.050*( 1,24) C 0 0.075 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
23 1.129 ( 3,24) C 0 1.021 ( 1,24) C 0 0.079 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
24 1.121 ( 3,24) C 0 1.025 ( 1,24) C 0 0.063 ( 2,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
25 0.212 ( 3,24) C 0 0.188 ( 1,24) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0 0.000 ( 1, 0) C 0
1 0.500 ( 3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 6
TIME : 22:15:50
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.544 ( 3,24) C 0
3 0.544 ( 3,24) C 0
4 0.532 ( 3,24) C 0
5 0.201 ( 3,24) C 0
6 0.203 ( 3,24) C 0
7 0.500 ( 3,24) C 0
8 0.464 ( 3,24) C 0
9 0.446 ( 3,24) C 0
10 0.449 ( 3,24) C 0
11 0.603 ( 3,24) C 0
12 0.674 ( 3,24) C 0
13 0.671 ( 3,24) C 0
14 0.486 ( 3,24) C 0
15 0.349 ( 3,24) C 0
16 0.292 ( 3,24) C 0
17 0.299 ( 3,24) C 0
18 0.307 ( 3,24) C 0
```

19 0.386 (3,24) C 0
20 0.461 (3,24) C 0
21 0.565 (3,24) C 0
22 0.757* (3,24) C 0
23 0.743 (3,24) C 0
24 0.736 (3,24) C 0
25 0.133 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.912 (2,24) 0.00 0.91 0.00 0.31 0.00 0.10 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.38 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 1.021 (2,24) 0.00 1.02 0.00 0.32 0.10 0.10 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.08 0.30 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 1.013 (2,24) 0.00 1.01 0.00 0.31 0.10 0.09 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.19 0.15 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 7
TIME : 22:15:50
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 0.883 (2,24) 0.00 0.88 0.00 0.30 0.01 0.07 0.02 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.22 0.04 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
5 0.404 (2,24) 0.00 0.40 0.00 0.08 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.08 0.00 0.00 0.00 0.00 0.08 0.05 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.404 (2,24) 0.00 0.40 0.00 0.05 0.00 0.00 0.07 0.00 0.00 0.00 0.01
Links 10+ 0.11 0.01 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.812 (2,24) 0.00 0.81 0.00 0.21 0.00 0.03 0.00 0.13 0.00 0.00 0.00 0.00
Links 10+ 0.19 0.02 0.00 0.00 0.00 0.13 0.01 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
8 0.787 (2,24) 0.00 0.79 0.00 0.00 0.00 0.00 0.00 0.33 0.00 0.00 0.00 0.01
Links 10+ 0.28 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
9 0.762 (2,24) 0.00 0.76 0.00 0.00 0.00 0.00 0.00 0.34 0.00 0.00 0.00 0.02
Links 10+ 0.29 0.08 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00

Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.767 (2,24) 0.00 0.77 0.00 0.00 0.00 0.00 0.00 0.35 0.00 0.00 0.00 0.09
Links 10+ 0.22 0.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.921 (3,24) 0.00 0.92 0.00 0.00 0.00 0.00 0.00 0.02 0.10 0.01 0.05 0.59
Links 10+ 0.00 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.004 (3,24) 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.10 0.03 0.00 0.03 0.15
Links 10+ 0.55 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.996 (3,24) 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.13 0.02 0.00 0.02 0.07
Links 10+ 0.62 0.15 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.717 (1,24) 0.00 0.72 0.01 0.05 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.25 0.00 0.00 0.00 0.00 0.11 0.09 0.00 0.00 0.06
Links 20+ 0.03 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
15 0.542 (1,24) 0.00 0.54 0.00 0.04 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.06 0.08 0.00 0.00 0.08
Links 20+ 0.07 0.00 0.00 0.00 0.14 0.00 0.00 0.00 0.00 0.00
16 0.467 (1,24) 0.00 0.47 0.00 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.07 0.00 0.06 0.04
Links 20+ 0.09 0.00 0.00 0.00 0.04 0.10 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 8
TIME : 22:15:50
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.521 (1,24) 0.00 0.52 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.02 0.04 0.08 0.02 0.00
Links 20+ 0.19 0.00 0.00 0.00 0.00 0.03 0.15 0.00 0.00 0.00
18 0.562 (3,24) 0.00 0.56 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.02
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.18 0.03 0.00
Links 20+ 0.20 0.00 0.00 0.00 0.00 0.04 0.04 0.00 0.00 0.00
19 0.633 (3,24) 0.00 0.63 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.01 0.02
Links 10+ 0.10 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.06 0.11
Links 20+ 0.20 0.00 0.00 0.00 0.05 0.02 0.00 0.00 0.00 0.00
20 0.775 (3,24) 0.00 0.77 0.00 0.01 0.00 0.00 0.00 0.05 0.00 0.00 0.01 0.03
Links 10+ 0.14 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.20
Links 20+ 0.19 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
21 0.829 (3,24) 0.00 0.83 0.00 0.04 0.00 0.00 0.00 0.05 0.00 0.00 0.01 0.03
Links 10+ 0.18 0.03 0.00 0.00 0.00 0.33 0.00 0.00 0.00 0.10
Links 20+ 0.02 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
22 1.146 (3,24) 0.00 1.15 0.00 0.07 0.03 0.06 0.05 0.03 0.00 0.00 0.00 0.02
Links 10+ 0.08 0.02 0.00 0.00 0.00 0.39 0.37 0.00 0.00 0.03
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 1.129 (3,24) 0.00 1.13 0.00 0.08 0.03 0.06 0.06 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.10 0.69 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.121 (3,24) 0.00 1.12 0.00 0.10 0.00 0.07 0.08 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.03 0.79 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.212 (3,24) 0.00 0.21 0.00 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Links 10+ 0.02 0.00 0.00 0.00 0.00 0.02 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.346 (1,24) 0.00 0.35 0.06 0.13 0.00 0.01 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.362 (1,24) 0.00 0.36 0.03 0.15 0.01 0.02 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.388 (1,24) 0.00 0.39 0.02 0.16 0.03 0.02 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.417 (1,24) 0.00 0.42 0.02 0.17 0.03 0.03 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.01 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.138 (1,24) 0.00 0.14 0.02 0.03 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.133 (1,24) 0.00 0.13 0.01 0.03 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.463 (1,24) 0.00 0.46 0.01 0.18 0.02 0.03 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00 0.00
8 0.358 (1,24) 0.00 0.36 0.01 0.08 0.00 0.02 0.02 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.05 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.321 (1,24) 0.00 0.32 0.00 0.03 0.00 0.00 0.02 0.15 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.03 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.350 (1,24) 0.00 0.35 0.00 0.03 0.00 0.00 0.00 0.18 0.00 0.00 0.00 0.00
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.883 (1,24) 0.00 0.88 0.00 0.02 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.39
Links 10+ 0.19 0.12 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.963 (1,24) 0.00 0.96 0.00 0.03 0.00 0.00 0.01 0.11 0.00 0.00 0.00 0.00
Links 10+ 0.62 0.12 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.933 (1,24) 0.00 0.93 0.00 0.03 0.00 0.00 0.01 0.09 0.00 0.00 0.00 0.00
Links 10+ 0.57 0.10 0.00 0.00 0.00 0.05 0.06 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.600 (3,24) 0.00 0.60 0.00 0.00 0.00 0.00 0.00 0.07 0.01 0.00 0.02 0.03
Links 10+ 0.39 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.275 (3,24) 0.00 0.28 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.02 0.03
Links 10+ 0.12 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
16 0.225 (2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.04 0.03 0.00
Links 20+ 0.06 0.00 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.00
17 0.304 (2,24) 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.00 0.00
Links 20+ 0.11 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00
18 0.233 (2,24) 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00
Links 20+ 0.10 0.00 0.00 0.00 0.00 0.00 0.04 0.00 0.00 0.00
19 0.292 (2,24) 0.00 0.29 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.10 0.00
Links 20+ 0.12 0.00 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
20 0.354 (1,24) 0.00 0.35 0.01 0.05 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.10 0.13 0.00 0.00 0.03
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 0.708 (1,24) 0.00 0.71 0.02 0.07 0.00 0.03 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.31 0.22 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 1.050 (1,24) 0.00 1.05 0.03 0.08 0.02 0.06 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.79 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 1.021 (1,24) 0.00 1.02 0.03 0.07 0.00 0.05 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.79 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.025 (1,24) 0.00 1.03 0.06 0.05 0.00 0.04 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.80 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.188 (1,24) 0.00 0.19 0.05 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.500 (3,24) 0.00 0.50 0.02 0.19 0.01 0.04 0.05 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.17 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.544 (3,24) 0.00 0.54 0.01 0.19 0.04 0.04 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.03 0.14 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.544 (3,24) 0.00 0.54 0.01 0.19 0.05 0.04 0.04 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.07 0.09 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.532 (3,24) 0.00 0.53 0.01 0.18 0.01 0.03 0.02 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.08 0.05 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00

5 0.201 (3,24) 0.00 0.20 0.01 0.03 0.00 0.00 0.01 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.03 0.04 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
6 0.203 (3,24) 0.00 0.20 0.00 0.03 0.00 0.00 0.01 0.03 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.01 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.500 (3,24) 0.00 0.50 0.00 0.13 0.01 0.02 0.01 0.08 0.00 0.00 0.00 0.01
Links 10+ 0.07 0.01 0.00 0.00 0.00 0.05 0.04 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00
8 0.464 (3,24) 0.00 0.46 0.00 0.03 0.00 0.01 0.01 0.19 0.01 0.00 0.01 0.01
Links 10+ 0.10 0.03 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
9 0.446 (3,24) 0.00 0.45 0.00 0.01 0.00 0.00 0.01 0.21 0.01 0.00 0.01 0.02
Links 10+ 0.11 0.04 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.449 (3,24) 0.00 0.45 0.00 0.01 0.00 0.00 0.00 0.21 0.01 0.00 0.01 0.04
Links 10+ 0.10 0.04 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.603 (3,24) 0.00 0.60 0.00 0.01 0.00 0.00 0.00 0.04 0.03 0.00 0.02 0.33
Links 10+ 0.06 0.09 0.00 0.00 0.00 0.01 0.01 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 0.674 (3,24) 0.00 0.67 0.00 0.01 0.00 0.00 0.00 0.07 0.01 0.00 0.01 0.05
Links 10+ 0.41 0.09 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 0.671 (3,24) 0.00 0.67 0.00 0.01 0.00 0.00 0.00 0.07 0.01 0.00 0.01 0.02
Links 10+ 0.41 0.08 0.00 0.00 0.00 0.02 0.02 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 12
TIME : 22:15:50
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.486 (3,24) 0.00 0.49 0.00 0.02 0.00 0.00 0.01 0.03 0.00 0.00 0.01 0.01
Links 10+ 0.21 0.03 0.00 0.00 0.00 0.04 0.03 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
15 0.349 (3,24) 0.00 0.35 0.00 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.06 0.02 0.00 0.00 0.00 0.02 0.03 0.01 0.01 0.03
Links 20+ 0.04 0.00 0.00 0.00 0.07 0.01 0.00 0.00 0.00 0.00
16 0.292 (3,24) 0.00 0.29 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.01 0.02 0.01 0.03 0.01
Links 20+ 0.05 0.00 0.00 0.00 0.01 0.06 0.01 0.00 0.00 0.00
17 0.299 (3,24) 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.01 0.05 0.01 0.00
Links 20+ 0.10 0.00 0.00 0.00 0.00 0.01 0.09 0.00 0.00 0.00
18 0.307 (3,24) 0.00 0.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.01 0.02 0.09 0.02 0.00
Links 20+ 0.11 0.00 0.00 0.00 0.00 0.01 0.03 0.00 0.00 0.00
19 0.386 (3,24) 0.00 0.39 0.00 0.01 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.02 0.03 0.01 0.05 0.05
Links 20+ 0.11 0.00 0.00 0.00 0.02 0.01 0.01 0.00 0.00 0.00
20 0.461 (3,24) 0.00 0.46 0.00 0.02 0.00 0.00 0.01 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.05 0.04 0.01 0.01 0.10
Links 20+ 0.11 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
21 0.565 (3,24) 0.00 0.57 0.01 0.04 0.00 0.01 0.02 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.06 0.01 0.00 0.00 0.00 0.21 0.07 0.00 0.00 0.05
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
22 0.757 (3,24) 0.00 0.76 0.01 0.05 0.02 0.04 0.04 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.13 0.39 0.00 0.00 0.02
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 0.743 (3,24) 0.00 0.74 0.01 0.05 0.01 0.04 0.05 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.03 0.51 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 0.736 (3,24) 0.00 0.74 0.02 0.05 0.00 0.04 0.05 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.55 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.133 (3,24) 0.00 0.13 0.02 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.01 0.09 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 7/10 PAGE: 13
TIME : 22:15:50
JOB: Site 1 Opt 1/2 2014 1B1A1416.DA3 RUN: FLUORANTHENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1417.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'FLUORENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0086
2 1606 .0086
3 120 57 2.0 1606 .0215 1679 1 3
4 527 .0086
5 120 107 2.0 527 .0215 1700 1 3
6 1830 .0086
7 1830 .0086
8 1830 .0086
9 3568 .0086
10 3568 .0086
11 3548 .0086
12 120 65 2.0 3548 .0215 1665 1 3
13 20 .0086
14 20 .0086
15 120 115 2.0 20 .0215 1752 1 3
16 4130 .0086
17 4130 .0086
18 958 .0086
19 958 .0086
20 958 .0086
21 120 94 2.0 958 .0215 1523 1 3
22 45 .0086
23 85 .0086
24 120 109 2.0 85 .0215 1694 1 3
25 739 .0086
26 739 .0086
27 739 .0086
```

```
1B1A1417.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 13: 4:51
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 13: 4:51
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```


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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 13: 4:51
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*--
MAX+BKG * 2.1 2.3 2.3 2.2 1.2 1.1 2.2 2.1 1.9 2.0
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 2.1 2.3 2.3 2.2 1.2 1.1 2.2 2.1 1.9 2.0
WIND DIR* 55 55 285 285 10 290 275 280 275 285
JULIAN * 2 2 1 1 2 1 1 1 1 1
HOUR * 23 23 21 21 14 22 19 20 19 21
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*--
MAX+BKG * 2.7 2.9 2.9 2.1 1.7 1.5 1.4 1.6 1.5 1.8
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 2.7 2.9 2.9 2.1 1.7 1.5 1.4 1.6 1.5 1.8
WIND DIR* 255 250 260 245 225 225 210 175 145 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 15 14 16 13 9 9 6 23 17 9
* REC21 REC22 REC23 REC24 REC25
--------*--
MAX+BKG * 2.2 3.0 2.9 3.1 0.8
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 2.2 3.0 2.9 3.1 0.8
WIND DIR* 110 95 255 100 220
JULIAN * 3 3 1 3 1
HOUR * 10 7 15 8 8
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 13: 4:51
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
THE HIGHEST CONCENTRATION OF 3.10 UG/M**3 OCCURRED AT RECEPTOR REC24.
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 5
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 1.617 (2,24) C 0 0.654 (1,24) C 0 0.508 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 1.875 (2,24) C 0 0.692 (1,24) C 0 0.513 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 1.850 (2,24) C 0 0.746 (1,24) C 0 0.471 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 1.579 (2,24) C 0 0.771 (1,24) C 0 0.583 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 0.921 (2,24) C 0 0.262 (1,24) C 0 0.146 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 0.887 (2,24) C 0 0.275 (1,24) C 0 0.146 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 1.521 (2,24) C 0 0.846 (1,24) C 0 0.450 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 1.517 (2,24) C 0 0.725 (1,24) C 0 0.475 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 1.504 (2,24) C 0 0.679 (1,24) C 0 0.467 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 1.400 (2,24) C 0 0.696 (1,24) C 0 0.471 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 1.729 (3,24) C 0 1.663 (1,24) C 0 0.038 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 1.892 (3,24) C 0 1.842 (1,24) C 0 0.142 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 1.871 (1,24) C 0 1.842 (3,24) C 0 0.179 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 1.346 (1,24) C 0 1.204 (3,24) C 0 0.338 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 1.054 (1,24) C 0 0.525 (3,24) C 0 0.450 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 1.025 (1,24) C 0 0.467 (2,24) C 0 0.383 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 1.046 (1,24) C 0 0.588 (2,24) C 0 0.250 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 1.129 (3,24) C 0 0.467 (2,24) C 0 0.333 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 1.246 (3,24) C 0 0.554 (2,24) C 0 0.483 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 1.375 (3,24) C 0 0.696 (1,24) C 0 0.525 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 1.600 (3,24) C 0 1.337 (1,24) C 0 0.358 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 2.117 (3,24) C 0 1.904*(1,24) C 0 0.158 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 2.133*(3,24) C 0 1.871 (1,24) C 0 0.150 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 2.117 (3,24) C 0 1.879 (1,24) C 0 0.133 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 0.521 (3,24) C 0 0.413 (1,24) C 0 0.008 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 0.926 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 6
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 1.026 (3,24) C 0
3 1.022 (3,24) C 0
4 0.978 (3,24) C 0
5 0.443 (3,24) C 0
6 0.436 (3,24) C 0
7 0.939 (3,24) C 0
8 0.906 (3,24) C 0
9 0.883 (3,24) C 0
10 0.856 (3,24) C 0
11 1.143 (3,24) C 0
12 1.292 (3,24) C 0
13 1.297 (3,24) C 0
14 0.962 (3,24) C 0
15 0.676 (3,24) C 0
16 0.625 (3,24) C 0
17 0.628 (3,24) C 0
18 0.643 (3,24) C 0

19 0.761 (3,24) C 0
20 0.865 (3,24) C 0
21 1.099 (3,24) C 0
22 1.393* (3,24) C 0
23 1.385 (3,24) C 0
24 1.376 (3,24) C 0
25 0.314 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 1.617 (2,24) 0.00 1.62 0.00 0.55 0.01 0.10 0.20 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.03 0.67 0.00 0.00 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 1.875 (2,24) 0.00 1.88 0.00 0.55 0.24 0.10 0.19 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.14 0.53 0.01 0.00 0.03
Links 20+ 0.04 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
3 1.850 (2,24) 0.00 1.85 0.00 0.54 0.23 0.10 0.15 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.01 0.00 0.00 0.00 0.34 0.26 0.01 0.00 0.05
Links 20+ 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 7
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 1.579 (2,24) 0.00 1.58 0.00 0.53 0.02 0.08 0.04 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.20 0.02 0.00 0.00 0.00 0.39 0.07 0.01 0.00 0.08
Links 20+ 0.06 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
5 0.921 (2,24) 0.00 0.92 0.00 0.16 0.03 0.05 0.03 0.08 0.00 0.00 0.00 0.01
Links 10+ 0.15 0.02 0.00 0.00 0.00 0.15 0.10 0.00 0.00 0.03
Links 20+ 0.04 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.00 0.00
6 0.887 (2,24) 0.00 0.89 0.00 0.12 0.01 0.03 0.02 0.13 0.00 0.00 0.00 0.02
Links 10+ 0.20 0.03 0.00 0.00 0.00 0.13 0.06 0.00 0.00 0.03
Links 20+ 0.04 0.00 0.00 0.02 0.03 0.00 0.00 0.00 0.00 0.00
7 1.521 (2,24) 0.00 1.52 0.00 0.36 0.00 0.04 0.01 0.22 0.00 0.00 0.00 0.01
Links 10+ 0.36 0.03 0.00 0.00 0.00 0.24 0.03 0.01 0.00 0.08
Links 20+ 0.06 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00 0.00
8 1.517 (2,24) 0.00 1.52 0.00 0.01 0.00 0.00 0.00 0.63 0.00 0.00 0.00 0.02
Links 10+ 0.53 0.08 0.00 0.00 0.03 0.06 0.01 0.01 0.00 0.04
Links 20+ 0.06 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
9 1.504 (2,24) 0.00 1.50 0.00 0.00 0.00 0.00 0.00 0.64 0.00 0.00 0.00 0.04
Links 10+ 0.55 0.11 0.00 0.00 0.03 0.01 0.00 0.01 0.00 0.02

Links 20+ 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
10 1.400 (2,24) 0.00 1.40 0.00 0.00 0.00 0.00 0.00 0.63 0.01 0.00 0.01 0.15
Links 10+ 0.44 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 1.729 (3,24) 0.00 1.73 0.00 0.00 0.00 0.00 0.00 0.04 0.18 0.03 0.09 1.09
Links 10+ 0.00 0.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.892 (3,24) 0.00 1.89 0.00 0.00 0.00 0.00 0.00 0.17 0.07 0.02 0.05 0.26
Links 10+ 0.99 0.33 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 1.871 (1,24) 0.00 1.87 0.02 0.06 0.00 0.02 0.03 0.15 0.00 0.00 0.00 0.00
Links 10+ 1.04 0.20 0.00 0.00 0.05 0.09 0.10 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
14 1.346 (1,24) 0.00 1.35 0.03 0.10 0.01 0.03 0.05 0.05 0.00 0.00 0.00 0.00
Links 10+ 0.42 0.00 0.00 0.00 0.00 0.20 0.16 0.00 0.00 0.10
Links 20+ 0.05 0.00 0.00 0.00 0.15 0.00 0.00 0.00 0.00 0.00
15 1.054 (1,24) 0.00 1.05 0.02 0.06 0.00 0.01 0.04 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.00 0.00 0.00 0.00 0.11 0.14 0.00 0.01 0.15
Links 20+ 0.15 0.00 0.00 0.00 0.27 0.00 0.00 0.00 0.00 0.00
16 1.025 (1,24) 0.00 1.03 0.02 0.05 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.07 0.12 0.00 0.11 0.08
Links 20+ 0.24 0.00 0.00 0.00 0.07 0.19 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 8
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 1.046 (1,24) 0.00 1.05 0.02 0.03 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.08 0.14 0.04 0.02
Links 20+ 0.32 0.00 0.00 0.00 0.01 0.03 0.28 0.00 0.00 0.00
18 1.129 (3,24) 0.00 1.13 0.00 0.00 0.00 0.00 0.00 0.04 0.01 0.00 0.03 0.03
Links 10+ 0.08 0.05 0.00 0.00 0.00 0.01 0.00 0.28 0.06 0.01
Links 20+ 0.42 0.00 0.00 0.00 0.02 0.05 0.05 0.00 0.00 0.00
19 1.246 (3,24) 0.00 1.25 0.00 0.01 0.00 0.00 0.00 0.05 0.02 0.00 0.02 0.04
Links 10+ 0.16 0.05 0.00 0.00 0.00 0.03 0.00 0.00 0.13 0.20
Links 20+ 0.43 0.00 0.00 0.00 0.08 0.03 0.00 0.00 0.00 0.00
20 1.375 (3,24) 0.00 1.38 0.00 0.02 0.00 0.00 0.00 0.09 0.02 0.00 0.02 0.05
Links 10+ 0.25 0.06 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.33
Links 20+ 0.38 0.00 0.00 0.00 0.09 0.00 0.00 0.00 0.00 0.00
21 1.600 (3,24) 0.00 1.60 0.00 0.08 0.00 0.04 0.00 0.10 0.02 0.00 0.02 0.04
Links 10+ 0.34 0.05 0.00 0.00 0.00 0.60 0.00 0.00 0.00 0.21
Links 20+ 0.04 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00 0.00
22 2.117 (3,24) 0.00 2.12 0.00 0.17 0.04 0.07 0.09 0.06 0.01 0.00 0.02 0.03
Links 10+ 0.14 0.04 0.00 0.00 0.00 0.70 0.66 0.00 0.00 0.04
Links 20+ 0.02 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
23 2.133 (3,24) 0.00 2.13 0.00 0.20 0.06 0.08 0.13 0.04 0.00 0.00 0.02 0.03
Links 10+ 0.09 0.03 0.00 0.00 0.00 0.18 1.24 0.00 0.00 0.03
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 2.117 (3,24) 0.00 2.12 0.00 0.22 0.03 0.08 0.15 0.03 0.00 0.00 0.01 0.02
Links 10+ 0.06 0.03 0.00 0.00 0.00 0.07 1.43 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.521 (3,24) 0.00 0.52 0.01 0.06 0.00 0.00 0.06 0.02 0.00 0.00 0.00 0.02

Links 10+ 0.03 0.02 0.00 0.00 0.00 0.03 0.25 0.00 0.00 0.00
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.654 (1,24) 0.00 0.65 0.10 0.24 0.00 0.02 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.22 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 9
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.692 (1,24) 0.00 0.69 0.06 0.28 0.03 0.03 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.23 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.746 (1,24) 0.00 0.75 0.03 0.30 0.08 0.03 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.23 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.771 (1,24) 0.00 0.77 0.03 0.33 0.07 0.03 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.22 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.262 (1,24) 0.00 0.26 0.03 0.05 0.01 0.01 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Page 4
1B1A1417.OUT
6 0.275 (1,24) 0.00 0.28 0.03 0.06 0.01 0.01 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.846 (1,24) 0.00 0.85 0.03 0.32 0.03 0.03 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.06 0.19 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00
8 0.725 (1,24) 0.00 0.72 0.02 0.14 0.02 0.03 0.05 0.21 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.09 0.14 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.679 (1,24) 0.00 0.68 0.02 0.08 0.00 0.02 0.03 0.28 0.00 0.00 0.00 0.00
Links 10+ 0.06 0.00 0.00 0.00 0.00 0.07 0.11 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.696 (1,24) 0.00 0.70 0.02 0.05 0.00 0.00 0.03 0.34 0.00 0.00 0.00 0.00
Links 10+ 0.11 0.02 0.00 0.00 0.00 0.04 0.08 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 1.663 (1,24) 0.00 1.66 0.01 0.03 0.00 0.00 0.02 0.19 0.00 0.00 0.00 0.71
Links 10+ 0.35 0.25 0.00 0.00 0.00 0.03 0.06 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.842 (1,24) 0.00 1.84 0.02 0.04 0.00 0.00 0.03 0.17 0.00 0.00 0.00 0.00
Links 10+ 1.12 0.25 0.00 0.00 0.00 0.05 0.09 0.00 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
13 1.842 (3,24) 0.00 1.84 0.00 0.00 0.00 0.00 0.00 0.20 0.03 0.01 0.04 0.12
Links 10+ 1.11 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 1.204 (3,24) 0.00 1.20 0.00 0.00 0.00 0.00 0.00 0.19 0.03 0.00 0.03 0.07
Links 10+ 0.69 0.18 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 10
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.525 (3,24) 0.00 0.53 0.00 0.00 0.00 0.00 0.00 0.09 0.03 0.00 0.03 0.06
Links 10+ 0.23 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
16 0.467 (2,24) 0.00 0.47 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.07 0.05 0.00
Links 20+ 0.17 0.00 0.00 0.00 0.00 0.15 0.04 0.00 0.00 0.00
17 0.588 (2,24) 0.00 0.59 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.13 0.00 0.00
Links 20+ 0.21 0.00 0.00 0.00 0.00 0.00 0.25 0.00 0.00 0.00
18 0.467 (2,24) 0.00 0.47 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.18 0.00 0.00
Links 20+ 0.21 0.00 0.00 0.00 0.00 0.00 0.08 0.00 0.00 0.00
19 0.554 (2,24) 0.00 0.55 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.06 0.18 0.00
Links 20+ 0.25 0.00 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.00
20 0.696 (1,24) 0.00 0.70 0.03 0.09 0.02 0.04 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.17 0.23 0.00 0.00 0.05
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 1.337 (1,24) 0.00 1.34 0.03 0.14 0.05 0.07 0.12 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.55 0.39 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 1.904 (1,24) 0.00 1.90 0.04 0.18 0.04 0.07 0.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 1.43 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 1.871 (1,24) 0.00 1.87 0.06 0.16 0.00 0.07 0.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 1.43 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.879 (1,24) 0.00 1.88 0.11 0.11 0.00 0.05 0.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 1.45 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.413 (1,24) 0.00 0.41 0.10 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.25 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 11
TIME : 13: 4:52

```
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.926 ( 3,24) 0.00 0.93 0.03 0.34 0.01 0.05 0.10 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.03 0.31 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 1.026 ( 3,24) 0.00 1.03 0.02 0.35 0.11 0.05 0.09 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.06 0.25 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 1.022 ( 3,24) 0.00 1.02 0.01 0.34 0.11 0.04 0.07 0.03 0.00 0.00 0.01 0.01
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.12 0.17 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
4 0.978 ( 3,24) 0.00 0.98 0.01 0.33 0.03 0.04 0.04 0.06 0.01 0.00 0.01 0.01
Links 10+ 0.10 0.02 0.00 0.00 0.00 0.14 0.10 0.00 0.00 0.03
Links 20+ 0.02 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00 0.00
```


```
5 0.443 ( 3,24) 0.00 0.44 0.01 0.07 0.01 0.02 0.02 0.04 0.01 0.00 0.01 0.01
Links 10+ 0.06 0.02 0.00 0.00 0.00 0.05 0.08 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00 0.00
6 0.436 ( 3,24) 0.00 0.44 0.01 0.06 0.01 0.01 0.02 0.05 0.01 0.00 0.01 0.02
Links 10+ 0.07 0.02 0.00 0.00 0.00 0.04 0.06 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00 0.00
7 0.939 ( 3,24) 0.00 0.94 0.01 0.23 0.01 0.03 0.02 0.15 0.01 0.00 0.01 0.02
Links 10+ 0.14 0.03 0.00 0.00 0.00 0.10 0.07 0.00 0.00 0.03
Links 20+ 0.02 0.00 0.00 0.04 0.02 0.00 0.00 0.00 0.00 0.00
8 0.906 ( 3,24) 0.00 0.91 0.01 0.05 0.01 0.01 0.02 0.37 0.01 0.00 0.01 0.03
Links 10+ 0.20 0.04 0.00 0.00 0.01 0.05 0.05 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
9 0.883 ( 3,24) 0.00 0.88 0.01 0.03 0.00 0.01 0.01 0.39 0.01 0.00 0.01 0.04
Links 10+ 0.21 0.05 0.00 0.00 0.01 0.03 0.04 0.00 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
10 0.856 ( 3,24) 0.00 0.86 0.01 0.02 0.00 0.00 0.01 0.40 0.03 0.01 0.02 0.07
Links 10+ 0.18 0.06 0.00 0.00 0.00 0.01 0.03 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 1.143 ( 3,24) 0.00 1.14 0.00 0.01 0.00 0.00 0.01 0.07 0.06 0.01 0.03 0.60
Links 10+ 0.12 0.19 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.292 ( 3,24) 0.00 1.29 0.01 0.01 0.00 0.00 0.01 0.11 0.02 0.01 0.02 0.09
Links 10+ 0.73 0.19 0.00 0.00 0.00 0.02 0.03 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
13 1.297 ( 3,24) 0.00 1.30 0.01 0.02 0.00 0.01 0.01 0.11 0.01 0.00 0.01 0.04
Links 10+ 0.74 0.17 0.00 0.00 0.02 0.03 0.03 0.01 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 12
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.962 ( 3,24) 0.00 0.96 0.01 0.03 0.00 0.01 0.02 0.08 0.01 0.00 0.01 0.02
Links 10+ 0.37 0.06 0.00 0.00 0.01 0.07 0.05 0.01 0.01 0.05
Links 20+ 0.06 0.00 0.00 0.00 0.08 0.01 0.01 0.00 0.00 0.00
15 0.676 ( 3,24) 0.00 0.68 0.01 0.02 0.00 0.00 0.01 0.04 0.01 0.00 0.01 0.02
Links 10+ 0.11 0.03 0.00 0.00 0.00 0.04 0.05 0.01 0.02 0.05
Links 20+ 0.10 0.00 0.00 0.00 0.13 0.03 0.01 0.00 0.00 0.00
16 0.625 ( 3,24) 0.00 0.63 0.01 0.02 0.00 0.00 0.01 0.02 0.01 0.00 0.01 0.02
Links 10+ 0.06 0.03 0.00 0.00 0.00 0.02 0.04 0.02 0.05 0.03
Links 20+ 0.13 0.00 0.00 0.00 0.03 0.11 0.01 0.00 0.00 0.00
17 0.628 ( 3,24) 0.00 0.63 0.01 0.01 0.00 0.00 0.01 0.01 0.01 0.00 0.01 0.01
Links 10+ 0.03 0.02 0.00 0.00 0.00 0.01 0.03 0.09 0.01 0.01
Links 20+ 0.18 0.00 0.00 0.00 0.00 0.01 0.18 0.00 0.00 0.00
18 0.643 ( 3,24) 0.00 0.64 0.01 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.02 0.00 0.00 0.00 0.01 0.04 0.16 0.03 0.01
Links 20+ 0.22 0.00 0.00 0.00 0.01 0.02 0.04 0.00 0.00 0.00
19 0.761 ( 3,24) 0.00 0.76 0.01 0.02 0.00 0.00 0.02 0.02 0.01 0.00 0.01 0.01
Links 10+ 0.06 0.02 0.00 0.00 0.00 0.04 0.06 0.02 0.10 0.09
Links 20+ 0.24 0.00 0.00 0.00 0.03 0.02 0.01 0.00 0.00 0.00
20 0.865 ( 3,24) 0.00 0.87 0.01 0.04 0.01 0.01 0.02 0.03 0.01 0.00 0.01 0.02
Links 10+ 0.08 0.02 0.00 0.00 0.00 0.08 0.08 0.01 0.02 0.17
Links 20+ 0.21 0.00 0.00 0.00 0.03 0.01 0.01 0.00 0.00 0.00
21 1.099 ( 3,24) 0.00 1.10 0.01 0.07 0.02 0.03 0.04 0.03 0.01 0.00 0.01 0.01
Links 10+ 0.11 0.02 0.00 0.00 0.00 0.38 0.13 0.01 0.01 0.11
Links 20+ 0.07 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
22 1.393 ( 3,24) 0.00 1.39 0.01 0.12 0.03 0.04 0.08 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.24 0.71 0.01 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
23 1.385 ( 3,24) 0.00 1.38 0.02 0.12 0.02 0.05 0.09 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.06 0.92 0.00 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.376 ( 3,24) 0.00 1.38 0.04 0.11 0.01 0.04 0.10 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.02 1.00 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.314 ( 3,24) 0.00 0.31 0.04 0.02 0.00 0.00 0.04 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.01 0.01 0.00 0.00 0.00 0.01 0.17 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 13
TIME : 13: 4:52
JOB: Site 1 Opt 1/2 2014 1B1A1417.DA3 RUN: FLUORENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
```

```
'Site 1 Opt 1/2 2014 1B1A1418.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'IDENO' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0004
2 1606 .0004
3 120 57 2.0 1606 .0010 1679 1 3
4 527 .0004
5 120 107 2.0 527 .0010 1700 1 3
6 1830 .0004
7 1830 .0004
8 1830 .0004
9 3568 .0004
10 3568 .0004
11 3548 .0004
12 120 65 2.0 3548 .0010 1665 1 3
13 20 .0004
14 20 .0004
15 120 115 2.0 20 .0010 1752 1 3
16 4130 .0004
17 4130 .0004
18 958 .0004
19 958 .0004
20 958 .0004
21 120 94 2.0 958 .0010 1523 1 3
22 45 .0004
23 85 .0004
24 120 109 2.0 85 .0010 1694 1 3
25 739 .0004
26 739 .0004
27 739 .0004
```

```
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 13:11:15
JOB: Site 1 Opt 1/2 2014 1B1A1418.DA3 RUN: IDENO
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 13:11:15
JOB: Site 1 Opt 1/2 2014 1B1A1418.DA3 RUN: IDENO
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```



```
21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 13:11:15
JOB: Site 1 Opt 1/2 2014 1B1A1418.DA3 RUN: IDENO
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*---
MAX+BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
WIND DIR* 0 0 0 0 0 0 0 0 0 0
JULIAN * 0 0 0 0 0 0 0 0 0 0
HOUR * 0 0 0 0 0 0 0 0 0 0
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*---
MAX+BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
WIND DIR* 0 0 0 0 0 0 0 0 0 0
JULIAN * 0 0 0 0 0 0 0 0 0 0
HOUR * 0 0 0 0 0 0 0 0 0 0
* REC21 REC22 REC23 REC24 REC25
--------*--
MAX+BKG * 0.0 0.0 0.0 0.0 0.0
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 0.0 0.0 0.0 0.0 0.0
WIND DIR* 0 0 0 0 0
JULIAN * 0 0 0 0 0
HOUR * 0 0 0 0 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 13:11:15
JOB: Site 1 Opt 1/2 2014 1B1A1418.DA3 RUN: IDENO

```
'Site 1 Opt 1/2 2014 1B1A1419.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'PHENANTHRENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0137
2 1606 .0137
3 120 57 2.0 1606 .0343 1679 1 3
4 527 .0137
5 120 107 2.0 527 .0343 1700 1 3
6 1830 .0137
7 1830 .0137
8 1830 .0137
9 3568 .0137
10 3568 .0137
11 3548 .0137
12 120 65 2.0 3548 .0343 1665 1 3
13 20 .0137
14 20 .0137
15 120 115 2.0 20 .0343 1752 1 3
16 4130 .0137
17 4130 .0137
18 958 .0137
19 958 .0137
20 958 .0137
21 120 94 2.0 958 .0343 1523 1 3
22 45 .0137
23 85 .0137
24 120 109 2.0 85 .0343 1694 1 3
25 739 .0137
26 739 .0137
27 739 .0137
```

```
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 13:16:25
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 13:16:25
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
```



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21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 13:16:25
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*---
MAX+BKG * 3.5 3.7 3.5 3.6 2.0 1.8 3.6 3.3 3.1 3.3
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 3.5 3.7 3.5 3.6 2.0 1.8 3.6 3.3 3.1 3.3
WIND DIR* 65 60 285 285 10 350 285 285 280 280
JULIAN * 3 2 1 1 2 2 1 1 1 1
HOUR * 1 24 21 21 14 10 21 21 20 20
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*---
MAX+BKG * 4.2 4.8 4.5 3.4 2.5 2.3 2.2 2.1 2.3 2.7
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*---
MAX * 4.2 4.8 4.5 3.4 2.5 2.3 2.2 2.1 2.3 2.7
WIND DIR* 250 255 250 245 235 230 210 135 145 110
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 14 15 14 13 11 10 6 15 17 10
* REC21 REC22 REC23 REC24 REC25
--------*---------------------------------------
MAX+BKG * 3.5 4.5 4.5 4.8 1.3
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*---------------------------------------
MAX * 3.5 4.5 4.5 4.8 1.3
WIND DIR* 105 95 95 100 115
JULIAN * 3 3 3 3 3
HOUR * 9 7 7 8 11
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 13:16:25
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
THE HIGHEST CONCENTRATION OF 4.80 UG/M**3 OCCURRED AT RECEPTOR REC24.
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 5
TIME : 13:16:26
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 2.525 (2,24) C 0 1.017 (1,24) C 0 0.846 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 2.962 (2,24) C 0 1.083 (1,24) C 0 0.842 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 2.967 (2,24) C 0 1.167 (1,24) C 0 0.763 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 2.537 (2,24) C 0 1.208 (1,24) C 0 0.900 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 1.467 (2,24) C 0 0.425 (1,24) C 0 0.233 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 1.413 (2,24) C 0 0.429 (1,24) C 0 0.238 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 2.421 (2,24) C 0 1.367 (1,24) C 0 0.725 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 2.400 (2,24) C 0 1.146 (1,24) C 0 0.758 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 2.342 (2,24) C 0 1.092 (1,24) C 0 0.725 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 2.237 (2,24) C 0 1.125 (1,24) C 0 0.729 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 2.662 (3,24) C 0 2.633 (1,24) C 0 0.112 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 2.904 (3,24) C 0 2.892 (1,24) C 0 0.262 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 2.875 (1,24) C 0 2.867 (3,24) C 0 0.350 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 2.079 (1,24) C 0 1.854 (3,24) C 0 0.508 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 1.700 (1,24) C 0 0.821 (3,24) C 0 0.721 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 1.604 (1,24) C 0 0.696 (2,24) C 0 0.600 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 1.629 (1,24) C 0 0.921 (2,24) C 0 0.392 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 1.737 (3,24) C 0 0.717 (2,24) C 0 0.504 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 1.954 (3,24) C 0 0.833 (2,24) C 0 0.808 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 2.183 (3,24) C 0 1.088 (1,24) C 0 0.813 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 2.513 (3,24) C 0 2.063 (1,24) C 0 0.550 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 3.304 (3,24) C 0 2.950*(1,24) C 0 0.292 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 3.333*(3,24) C 0 2.904 (1,24) C 0 0.287 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 3.312 (3,24) C 0 2.904 (1,24) C 0 0.225 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 0.892 (3,24) C 0 0.617 (1,24) C 0 0.029 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 1.462 (3,24) C 0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 6
TIME : 13:16:26
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 1.629 (3,24) C 0
3 1.632 (3,24) C 0
4 1.549 (3,24) C 0
5 0.708 (3,24) C 0
6 0.693 (3,24) C 0
7 1.504 (3,24) C 0
8 1.435 (3,24) C 0
9 1.386 (3,24) C 0
10 1.364 (3,24) C 0
11 1.803 (3,24) C 0
12 2.019 (3,24) C 0
13 2.031 (3,24) C 0
14 1.481 (3,24) C 0
15 1.081 (3,24) C 0
16 0.967 (3,24) C 0
17 0.981 (3,24) C 0
18 0.986 (3,24) C 0

19 1.199 (3,24) C 0
20 1.361 (3,24) C 0
21 1.708 (3,24) C 0
22 2.182* (3,24) C 0
23 2.175 (3,24) C 0
24 2.147 (3,24) C 0
25 0.513 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 2.525 (2,24) 0.00 2.52 0.00 0.87 0.02 0.20 0.30 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.05 1.00 0.02 0.00 0.02
Links 20+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 2.962 (2,24) 0.00 2.96 0.00 0.87 0.37 0.20 0.29 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.21 0.81 0.02 0.00 0.03
Links 20+ 0.06 0.00 0.00 0.00 0.02 0.00 0.01 0.00 0.00 0.00
3 2.967 (2,24) 0.00 2.97 0.00 0.86 0.38 0.19 0.22 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.12 0.01 0.00 0.00 0.00 0.53 0.42 0.03 0.00 0.07
Links 20+ 0.08 0.00 0.00 0.00 0.03 0.00 0.01 0.00 0.00 0.00

LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 2.537 (2,24) 0.00 2.54 0.00 0.83 0.03 0.15 0.05 0.07 0.00 0.00 0.00 0.01
Links 10+ 0.31 0.03 0.00 0.00 0.00 0.60 0.10 0.02 0.01 0.12
Links 20+ 0.10 0.00 0.00 0.01 0.08 0.00 0.02 0.00 0.00 0.00
5 1.467 (2,24) 0.00 1.47 0.00 0.28 0.04 0.06 0.06 0.12 0.00 0.00 0.00 0.02
Links 10+ 0.23 0.03 0.00 0.00 0.00 0.24 0.16 0.02 0.00 0.05
Links 20+ 0.06 0.00 0.00 0.03 0.03 0.00 0.01 0.00 0.00 0.00
6 1.413 (2,24) 0.00 1.41 0.00 0.20 0.02 0.04 0.03 0.20 0.00 0.00 0.00 0.03
Links 10+ 0.31 0.05 0.00 0.00 0.00 0.20 0.09 0.02 0.00 0.05
Links 20+ 0.06 0.00 0.03 0.04 0.03 0.00 0.01 0.00 0.00 0.00
7 2.421 (2,24) 0.00 2.42 0.00 0.55 0.00 0.07 0.01 0.36 0.00 0.00 0.00 0.02
Links 10+ 0.57 0.05 0.00 0.00 0.02 0.36 0.05 0.02 0.01 0.12
Links 20+ 0.10 0.00 0.00 0.00 0.11 0.00 0.02 0.00 0.00 0.00
8 2.400 (2,24) 0.00 2.40 0.00 0.02 0.00 0.01 0.00 0.98 0.00 0.00 0.00 0.03
Links 10+ 0.82 0.12 0.00 0.00 0.05 0.09 0.01 0.03 0.01 0.06
Links 20+ 0.08 0.00 0.00 0.00 0.07 0.00 0.02 0.00 0.00 0.00
9 2.342 (2,24) 0.00 2.34 0.00 0.00 0.00 0.00 0.00 0.98 0.00 0.00 0.00 0.07
Links 10+ 0.85 0.19 0.00 0.00 0.05 0.02 0.00 0.02 0.00 0.03

Links 20+ 0.08 0.00 0.00 0.00 0.03 0.00 0.01 0.00 0.00 0.00
10 2.237 (2,24) 0.00 2.24 0.00 0.00 0.00 0.00 0.00 0.99 0.02 0.00 0.01 0.23
Links 10+ 0.67 0.20 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.01
Links 20+ 0.04 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
11 2.662 (3,24) 0.00 2.66 0.00 0.00 0.00 0.00 0.00 0.05 0.28 0.04 0.15 1.68
Links 10+ 0.00 0.46 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 2.904 (3,24) 0.00 2.90 0.00 0.00 0.00 0.00 0.00 0.27 0.10 0.03 0.08 0.42
Links 10+ 1.55 0.47 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 2.875 (1,24) 0.00 2.87 0.03 0.10 0.01 0.03 0.05 0.23 0.00 0.00 0.00 0.00
Links 10+ 1.62 0.30 0.00 0.00 0.05 0.15 0.18 0.00 0.00 0.05
Links 20+ 0.04 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
14 2.079 (1,24) 0.00 2.08 0.03 0.17 0.03 0.05 0.06 0.07 0.00 0.00 0.00 0.00
Links 10+ 0.67 0.01 0.00 0.00 0.00 0.31 0.25 0.00 0.00 0.13
Links 20+ 0.08 0.00 0.00 0.00 0.23 0.00 0.00 0.00 0.00 0.00
15 1.700 (1,24) 0.00 1.70 0.03 0.10 0.01 0.03 0.05 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.14 0.00 0.00 0.00 0.00 0.17 0.22 0.00 0.02 0.22
Links 20+ 0.25 0.00 0.00 0.00 0.42 0.00 0.00 0.00 0.00 0.00
16 1.604 (1,24) 0.00 1.60 0.03 0.08 0.00 0.03 0.04 0.02 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.10 0.19 0.00 0.16 0.12
Links 20+ 0.33 0.00 0.00 0.00 0.10 0.35 0.00 0.00 0.00 0.00

LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 1.629 (1,24) 0.00 1.63 0.03 0.04 0.00 0.00 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.05 0.13 0.22 0.07 0.03
Links 20+ 0.50 0.00 0.00 0.00 0.02 0.06 0.40 0.00 0.00 0.00
18 1.737 (3,24) 0.00 1.74 0.00 0.01 0.00 0.00 0.00 0.05 0.02 0.01 0.03 0.06
Links 10+ 0.12 0.06 0.00 0.00 0.00 0.02 0.00 0.42 0.09 0.02
Links 20+ 0.62 0.00 0.00 0.00 0.03 0.10 0.09 0.00 0.00 0.00
19 1.954 (3,24) 0.00 1.95 0.00 0.02 0.00 0.00 0.00 0.10 0.03 0.01 0.03 0.06
Links 10+ 0.25 0.08 0.00 0.00 0.00 0.05 0.00 0.00 0.20 0.32
Links 20+ 0.63 0.00 0.00 0.00 0.13 0.05 0.00 0.00 0.00 0.00
20 2.183 (3,24) 0.00 2.18 0.00 0.04 0.00 0.01 0.00 0.13 0.03 0.01 0.03 0.07
Links 10+ 0.40 0.08 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.51
Links 20+ 0.56 0.00 0.00 0.00 0.18 0.00 0.00 0.00 0.00 0.00
21 2.513 (3,24) 0.00 2.51 0.00 0.12 0.00 0.04 0.00 0.16 0.03 0.01 0.03 0.06
Links 10+ 0.52 0.09 0.00 0.00 0.00 0.92 0.00 0.00 0.00 0.35
Links 20+ 0.05 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.00 0.00
22 3.304 (3,24) 0.00 3.30 0.00 0.25 0.08 0.13 0.12 0.09 0.02 0.00 0.03 0.05
Links 10+ 0.22 0.06 0.00 0.00 0.00 1.09 1.03 0.00 0.00 0.08
Links 20+ 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
23 3.333 (3,24) 0.00 3.33 0.00 0.28 0.10 0.14 0.18 0.06 0.02 0.00 0.03 0.04
Links 10+ 0.15 0.05 0.00 0.00 0.00 0.28 1.93 0.00 0.00 0.04
Links 20+ 0.02 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
24 3.312 (3,24) 0.00 3.31 0.00 0.31 0.03 0.15 0.22 0.04 0.01 0.00 0.03 0.03
Links 10+ 0.08 0.04 0.00 0.00 0.00 0.10 2.23 0.00 0.00 0.03
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.892 (3,24) 0.00 0.89 0.02 0.11 0.00 0.05 0.06 0.03 0.00 0.00 0.02 0.03

Links 10+ 0.05 0.03 0.00 0.00 0.00 0.05 0.41 0.00 0.00 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 1.017 (1,24) 0.00 1.02 0.16 0.39 0.00 0.03 0.11 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.33 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 1.083 (1,24) 0.00 1.08 0.09 0.45 0.04 0.05 0.11 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.35 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 1.167 (1,24) 0.00 1.17 0.06 0.47 0.11 0.05 0.11 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.36 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 1.208 (1,24) 0.00 1.21 0.05 0.51 0.10 0.05 0.12 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.03 0.34 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.425 (1,24) 0.00 0.43 0.05 0.09 0.01 0.02 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.20 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

6 0.429 (1,24) 0.00 0.43 0.05 0.09 0.02 0.02 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.19 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 1.367 (1,24) 0.00 1.37 0.05 0.51 0.06 0.06 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.10 0.29 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.02 0.18 0.00 0.00 0.00 0.00 0.00 0.00
8 1.146 (1,24) 0.00 1.15 0.03 0.23 0.03 0.05 0.06 0.33 0.00 0.00 0.00 0.00
Links 10+ 0.03 0.00 0.00 0.00 0.00 0.14 0.23 0.00 0.00 0.01
Links 20+ 0.00 0.00 0.00 0.02 0.01 0.00 0.00 0.00 0.00 0.00
9 1.092 (1,24) 0.00 1.09 0.03 0.12 0.02 0.03 0.05 0.43 0.00 0.00 0.00 0.00
Links 10+ 0.10 0.00 0.00 0.00 0.00 0.11 0.17 0.00 0.00 0.02
Links 20+ 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
10 1.125 (1,24) 0.00 1.13 0.03 0.06 0.00 0.02 0.03 0.53 0.00 0.00 0.00 0.00
Links 10+ 0.17 0.03 0.00 0.00 0.01 0.07 0.13 0.00 0.00 0.02
Links 20+ 0.01 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
11 2.633 (1,24) 0.00 2.63 0.02 0.04 0.00 0.00 0.03 0.30 0.00 0.00 0.00 1.10
Links 10+ 0.56 0.37 0.00 0.00 0.00 0.05 0.10 0.00 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
12 2.892 (1,24) 0.00 2.89 0.03 0.07 0.00 0.02 0.04 0.28 0.00 0.00 0.00 0.00
Links 10+ 1.75 0.35 0.00 0.00 0.03 0.08 0.14 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
13 2.867 (3,24) 0.00 2.87 0.00 0.00 0.00 0.00 0.00 0.32 0.06 0.02 0.06 0.20
Links 10+ 1.73 0.46 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 1.854 (3,24) 0.00 1.85 0.00 0.00 0.00 0.00 0.00 0.27 0.04 0.02 0.05 0.11
Links 10+ 1.07 0.27 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.821 (3,24) 0.00 0.82 0.00 0.00 0.00 0.00 0.00 0.13 0.03 0.01 0.05 0.10
Links 10+ 0.34 0.14 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
16 0.696 (2,24) 0.00 0.70 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.07 0.00
Links 20+ 0.23 0.00 0.00 0.00 0.00 0.20 0.07 0.00 0.00 0.00
17 0.921 (2,24) 0.00 0.92 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.21 0.00 0.00
Links 20+ 0.32 0.00 0.00 0.00 0.00 0.00 0.39 0.00 0.00 0.00
18 0.717 (2,24) 0.00 0.72 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.29 0.00 0.00
Links 20+ 0.32 0.00 0.00 0.00 0.00 0.00 0.11 0.00 0.00 0.00
19 0.833 (2,24) 0.00 0.83 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.08 0.28 0.00
Links 20+ 0.38 0.00 0.00 0.00 0.00 0.05 0.05 0.00 0.00 0.00
20 1.088 (1,24) 0.00 1.09 0.05 0.13 0.03 0.05 0.10 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.25 0.37 0.00 0.00 0.08
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 2.063 (1,24) 0.00 2.06 0.05 0.24 0.06 0.09 0.16 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.87 0.60 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 2.950 (1,24) 0.00 2.95 0.07 0.25 0.06 0.13 0.22 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 2.21 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 2.904 (1,24) 0.00 2.90 0.09 0.23 0.01 0.12 0.23 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 2.23 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 2.904 (1,24) 0.00 2.90 0.18 0.17 0.00 0.10 0.22 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 2.24 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.617 (1,24) 0.00 0.62 0.14 0.00 0.00 0.00 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.40 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 1.462 (3,24) 0.00 1.46 0.05 0.54 0.02 0.09 0.15 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.04 0.46 0.01 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 1.629 (3,24) 0.00 1.63 0.03 0.55 0.16 0.09 0.14 0.03 0.01 0.00 0.01 0.02
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.09 0.39 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
3 1.632 (3,24) 0.00 1.63 0.02 0.54 0.17 0.09 0.11 0.04 0.01 0.00 0.01 0.02
Links 10+ 0.08 0.02 0.00 0.00 0.00 0.18 0.26 0.01 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
4 1.549 (3,24) 0.00 1.55 0.02 0.52 0.04 0.07 0.06 0.09 0.01 0.00 0.01 0.02
Links 10+ 0.15 0.03 0.00 0.00 0.00 0.21 0.15 0.01 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.05 0.03 0.00 0.01 0.00 0.00 0.00

5 0.708 (3,24) 0.00 0.71 0.02 0.12 0.02 0.03 0.04 0.06 0.01 0.00 0.01 0.02
Links 10+ 0.09 0.03 0.00 0.00 0.00 0.08 0.12 0.01 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00 0.00
6 0.693 (3,24) 0.00 0.69 0.02 0.10 0.01 0.02 0.03 0.08 0.01 0.00 0.01 0.02
Links 10+ 0.11 0.03 0.00 0.00 0.00 0.07 0.09 0.01 0.00 0.02
Links 20+ 0.02 0.00 0.01 0.01 0.01 0.00 0.00 0.00 0.00 0.00
7 1.504 (3,24) 0.00 1.50 0.02 0.36 0.02 0.04 0.04 0.24 0.01 0.01 0.01 0.03
Links 10+ 0.23 0.04 0.00 0.00 0.01 0.15 0.11 0.01 0.00 0.04
Links 20+ 0.03 0.00 0.01 0.06 0.04 0.00 0.01 0.00 0.00 0.00
8 1.435 (3,24) 0.00 1.43 0.01 0.08 0.01 0.02 0.02 0.57 0.02 0.01 0.02 0.04
Links 10+ 0.31 0.07 0.00 0.00 0.02 0.08 0.08 0.01 0.00 0.03
Links 20+ 0.03 0.00 0.00 0.01 0.03 0.00 0.01 0.00 0.00 0.00
9 1.386 (3,24) 0.00 1.39 0.01 0.04 0.01 0.01 0.02 0.60 0.02 0.01 0.02 0.06
Links 10+ 0.33 0.09 0.00 0.00 0.02 0.04 0.06 0.01 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
10 1.364 (3,24) 0.00 1.36 0.01 0.02 0.00 0.01 0.01 0.62 0.04 0.01 0.03 0.12
Links 10+ 0.28 0.10 0.00 0.00 0.00 0.02 0.04 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
11 1.803 (3,24) 0.00 1.80 0.01 0.01 0.00 0.00 0.01 0.12 0.09 0.01 0.05 0.94
Links 10+ 0.19 0.28 0.00 0.00 0.00 0.02 0.03 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00
12 2.019 (3,24) 0.00 2.02 0.01 0.02 0.00 0.01 0.01 0.18 0.03 0.01 0.03 0.14
Links 10+ 1.14 0.27 0.00 0.00 0.01 0.03 0.05 0.01 0.01 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.01 0.00 0.00 0.00
13 2.031 (3,24) 0.00 2.03 0.01 0.03 0.00 0.01 0.02 0.18 0.02 0.01 0.02 0.07
Links 10+ 1.15 0.25 0.00 0.00 0.02 0.05 0.06 0.01 0.01 0.02
Links 20+ 0.05 0.00 0.00 0.00 0.02 0.01 0.01 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 12
TIME : 13:16:26
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 1.481 (3,24) 0.00 1.48 0.01 0.06 0.01 0.02 0.02 0.11 0.01 0.01 0.02 0.04
Links 10+ 0.58 0.09 0.00 0.00 0.01 0.10 0.08 0.01 0.01 0.07
Links 20+ 0.09 0.00 0.00 0.00 0.12 0.01 0.01 0.00 0.00 0.00
15 1.081 (3,24) 0.00 1.08 0.01 0.03 0.00 0.01 0.02 0.05 0.01 0.00 0.02 0.03
Links 10+ 0.16 0.05 0.00 0.00 0.00 0.06 0.07 0.02 0.03 0.08
Links 20+ 0.16 0.00 0.00 0.00 0.21 0.04 0.01 0.00 0.00 0.00
16 0.967 (3,24) 0.00 0.97 0.01 0.03 0.00 0.01 0.01 0.03 0.01 0.00 0.02 0.03
Links 10+ 0.09 0.03 0.00 0.00 0.00 0.03 0.06 0.04 0.08 0.04
Links 20+ 0.19 0.00 0.00 0.00 0.04 0.19 0.02 0.00 0.00 0.00
17 0.981 (3,24) 0.00 0.98 0.01 0.01 0.00 0.00 0.01 0.02 0.01 0.00 0.01 0.02
Links 10+ 0.04 0.03 0.00 0.00 0.00 0.02 0.04 0.14 0.02 0.01
Links 20+ 0.28 0.00 0.00 0.00 0.01 0.03 0.27 0.00 0.00 0.00
18 0.986 (3,24) 0.00 0.99 0.01 0.02 0.00 0.00 0.02 0.02 0.01 0.00 0.01 0.02
Links 10+ 0.04 0.02 0.00 0.00 0.00 0.02 0.05 0.24 0.04 0.01
Links 20+ 0.34 0.00 0.00 0.00 0.01 0.03 0.07 0.00 0.00 0.00
19 1.199 (3,24) 0.00 1.20 0.01 0.04 0.01 0.01 0.02 0.03 0.01 0.00 0.01 0.02
Links 10+ 0.09 0.03 0.00 0.00 0.00 0.06 0.09 0.03 0.16 0.14
Links 20+ 0.35 0.00 0.00 0.00 0.05 0.03 0.02 0.00 0.00 0.00
20 1.361 (3,24) 0.00 1.36 0.02 0.06 0.01 0.02 0.03 0.04 0.01 0.00 0.01 0.02
Links 10+ 0.13 0.03 0.00 0.00 0.00 0.12 0.12 0.02 0.03 0.27
Links 20+ 0.32 0.00 0.00 0.00 0.07 0.01 0.01 0.00 0.00 0.00
21 1.708 (3,24) 0.00 1.71 0.02 0.12 0.02 0.04 0.05 0.05 0.01 0.00 0.01 0.02
Links 10+ 0.17 0.03 0.00 0.00 0.00 0.60 0.20 0.01 0.01 0.17
Links 20+ 0.10 0.00 0.00 0.00 0.05 0.01 0.01 0.00 0.00 0.00
22 2.182 (3,24) 0.00 2.18 0.02 0.17 0.05 0.09 0.11 0.03 0.01 0.00 0.01 0.02
Links 10+ 0.07 0.02 0.00 0.00 0.00 0.37 1.10 0.01 0.01 0.04
Links 20+ 0.04 0.00 0.00 0.00 0.02 0.00 0.01 0.00 0.00 0.00
23 2.175 (3,24) 0.00 2.17 0.03 0.17 0.03 0.09 0.14 0.02 0.01 0.00 0.01 0.01
Links 10+ 0.05 0.02 0.00 0.00 0.00 0.10 1.44 0.01 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.01 0.00 0.00 0.00
24 2.147 (3,24) 0.00 2.15 0.06 0.16 0.01 0.08 0.15 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.03 1.55 0.01 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.513 (3,24) 0.00 0.51 0.05 0.04 0.00 0.02 0.04 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.02 0.27 0.01 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 13
TIME : 13:16:26
JOB: Site 1 Opt 1/2 2014 1B1A1419.DA3 RUN: PHENANTHRENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally

```
'Site 1 Opt 1/2 2014 1B1A1420.DA3' 60.0 321. 0.000 0.000 25 0.30480000 1
1 1 99 1 3 99
99999 99 99999 99
1 1 'u'
'REC E (MID S) ' 743. 1116. 5.0
'REC E (164 S) ' 857. 1123. 5.0
'REC E (82 S) ' 939. 1128. 5.0
'REC E (CNR) ' 1020. 1134. 5.0
'REC E (82 E) ' 1022. 1053. 5.0
'REC E (82 E) ' 1075. 1056. 5.0
'REC E (CNR) ' 1076. 1137. 5.0
'REC E (82 N) ' 1156. 1142. 5.0
'REC E (164 N) ' 1238. 1146. 5.0
'REC E (MID N) ' 1341. 1153. 5.0
'REC W (MID N) ' 1453. 1280. 5.0
'REC W (164 N) ' 1316. 1272. 5.0
'REC W (82 N) ' 1234. 1269. 5.0
'REC W (CNR) ' 1138. 1288. 5.0
'REC W (82 W) ' 1137. 1385. 5.0
'REC W (164 W) ' 1145. 1466. 5.0
'REC W (MID W) ' 1156. 1626. 5.0
'REC W (MID W) ' 1072. 1597. 5.0
'REC W (164 W) ' 1043. 1434. 5.0
'REC W (82 W) ' 1026. 1354. 5.0
'REC W (CNR) ' 995. 1273. 5.0
'REC W (82 S) ' 900. 1248. 5.0
'REC W (164 S) ' 819. 1243. 5.0
'REC W (MID S) ' 692. 1235. 5.0
'REC W (church) ' 568. 1376. 5.0
1 'p'
1 1 1 1 1 1 1
'PYRENE' 27
1 1
'NB Rt1 aprch ' 'AG' 58. 1109. 581. 1136. 0. 56
2 1
'NB Rt1 thru ' 'AG' 582. 1136. 1083. 1166. 0. 56
3 2
'NB Rt1 thru ' 'AG' 984. 1160. 818. 1150. 0. 36 3
4 1
'NB Rt1 left ' 'AG' 572. 1167. 1065. 1195. 0. 44
5 2
'NB Rt1 left ' 'AG' 983. 1190. -621. 1101. 0. 24 2
6 1
'NB Rt1 depart' 'AG' 1085. 1167. 1470. 1188. 0. 56
7 1
'NB Rt1 depart' 'AG' 1470. 1188. 1784. 1227. 0. 44
8 1
'NB Rt1 depart' 'AG' 1784. 1227. 2072. 1272. 0. 44
9 1
'SB Rt1 aprch ' 'AG' 2069. 1311. 1694. 1264. 0. 44
10 1
'SB Rt1 aprch ' 'AG' 1694. 1264. 1395. 1248. 0. 44
11 1
'SB Rt1 th+rt ' 'AG' 1395. 1248. 1057. 1231. 0. 56
12 2
'SB Rt1th+rt ' 'AG' 1144. 1236. 6449. 1497. 0. 36 3
13 1
```

```
'SB Rt1 left ' 'AG' 1378. 1236. 1241. 1217. 0. 32
14 1
'SB Rt1 left ' 'AG' 1240. 1217. 1058. 1208. 0. 32
15 2
'SB Rt1 left ' 'AG' 1147. 1212. 1245. 1216. 0. 12 1
16 1
'SB Rt1 depart' 'AG' 1056. 1231. 921. 1221. 0. 56
17 1
'SB Rt1 depart' 'AG' 921. 1221. 58. 1172. 0. 56
18 1
'EB Rt28 aprch' 'AG' 1226. 2185. 1087. 1547. 0. 32
19 1
'EB Rt28 aprch' 'AG' 1088. 1547. 1072. 1425. 0. 56
20 1
'EB Rt28 aprch' 'AG' 1072. 1425. 1025. 1202. 0. 56
21 2
'EB Rt28 aprch' 'AG' 1043. 1287. 1174. 1924. 0. 36 3
22 1
'EB Rt28 depar' 'AG' 1039. 1194. 1043. 1015. 0. 32
23 1
'WB Rt28 aprch' 'AG' 1052. 1015. 1049. 1190. 0. 44
24 2
'WB Rt28 aprch' 'AG' 1050. 1141. 1050. 1116. 0. 24 2
25 1
'WB Rt28 depar' 'AG' 1069. 1197. 1121. 1424. 0. 44
26 1
'WB Rt28 depar' 'AG' 1121. 1424. 1126. 1570. 0. 32
27 1
'WB Rt28 depar' 'AG' 1126. 1570. 1257. 2180. 0. 32
9 0.0
1 2133 .0071
2 1606 .0071
3 120 57 2.0 1606 .0178 1679 1 3
4 527 .0071
5 120 107 2.0 527 .0178 1700 1 3
6 1830 .0071
7 1830 .0071
8 1830 .0071
9 3568 .0071
10 3568 .0071
11 3548 .0071
12 120 65 2.0 3548 .0178 1665 1 3
13 20 .0071
14 20 .0071
15 120 115 2.0 20 .0178 1752 1 3
16 4130 .0071
17 4130 .0071
18 958 .0071
19 958 .0071
20 958 .0071
21 120 94 2.0 958 .0178 1523 1 3
22 45 .0071
23 85 .0071
24 120 109 2.0 85 .0178 1694 1 3
25 739 .0071
26 739 .0071
27 739 .0071
```

```
1B1A1420.OUT
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 1
TIME : 13:30:17
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
===================
General Information
===================
Run start date: 1/ 1/99 Julian: 1
end date: 1/ 3/99 Julian: 3
A Tier 1 approach was used for input data preparation.
The MODE flag has been set to p for calculating PM averages.
Ambient background concentrations are included in the averages below.
Site & Meteorological Constants
-------------------------------
VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 321. CM ATIM = 60.
Met. Sfc. Sta. Id & Yr = 99999 99
Upper Air Sta. Id & Yr = 99999 99
Urban mixing heights were processed.
In 1999, Julian day 1 is a Friday.
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
1. NB Rt1 aprch * 58.0 1109.0 581.0 1136.0 * 524. 87. AG 0.0 56.0
2. NB Rt1 thru * 582.0 1136.0 1083.0 1166.0 * 502. 87. AG 0.0 56.0
3. NB Rt1 thru * 984.0 1160.0 818.0 1150.0 * 166. 267. AG 0.0 36.0 3
4. NB Rt1 left * 572.0 1167.0 1065.0 1195.0 * 494. 87. AG 0.0 44.0
5. NB Rt1 left * 983.0 1190.0 -621.0 1101.0 * 1606. 267. AG 0.0 24.0 2
6. NB Rt1 depart* 1085.0 1167.0 1470.0 1188.0 * 386. 87. AG 0.0 56.0
7. NB Rt1 depart* 1470.0 1188.0 1784.0 1227.0 * 316. 83. AG 0.0 44.0
8. NB Rt1 depart* 1784.0 1227.0 2072.0 1272.0 * 291. 81. AG 0.0 44.0
9. SB Rt1 aprch * 2069.0 1311.0 1694.0 1264.0 * 378. 263. AG 0.0 44.0
10. SB Rt1 aprch * 1694.0 1264.0 1395.0 1248.0 * 299. 267. AG 0.0 44.0
11. SB Rt1 th+rt * 1395.0 1248.0 1057.0 1231.0 * 338. 267. AG 0.0 56.0
12. SB Rt1th+rt * 1144.0 1236.0 6449.0 1497.0 * 5311. 87. AG 0.0 36.0 3
13. SB Rt1 left * 1378.0 1236.0 1241.0 1217.0 * 138. 262. AG 0.0 32.0
14. SB Rt1 left * 1240.0 1217.0 1058.0 1208.0 * 182. 267. AG 0.0 32.0
15. SB Rt1 left * 1147.0 1212.0 1245.0 1216.0 * 98. 88. AG 0.0 12.0 1
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 2
TIME : 13:30:17
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
Link Data Constants - (Variable data in *.LNK file)
-------------------
LINK DESCRIPTION * LINK COORDINATES (FT) * LENGTH BRG TYPE H W NLANES
* X1 Y1 X2 Y2 * (FT) (DEG) (FT) (FT)
------------------------*----------------------------------------*----------------------------------------
16. SB Rt1 depart* 1056.0 1231.0 921.0 1221.0 * 135. 266. AG 0.0 56.0
17. SB Rt1 depart* 921.0 1221.0 58.0 1172.0 * 864. 267. AG 0.0 56.0
18. EB Rt28 aprch* 1226.0 2185.0 1087.0 1547.0 * 653. 192. AG 0.0 32.0
19. EB Rt28 aprch* 1088.0 1547.0 1072.0 1425.0 * 123. 187. AG 0.0 56.0
20. EB Rt28 aprch* 1072.0 1425.0 1025.0 1202.0 * 228. 192. AG 0.0 56.0
21. EB Rt28 aprch* 1043.0 1287.0 1174.0 1924.0 * 650. 12. AG 0.0 36.0 3
22. EB Rt28 depar* 1039.0 1194.0 1043.0 1015.0 * 179. 179. AG 0.0 32.0
23. WB Rt28 aprch* 1052.0 1015.0 1049.0 1190.0 * 175. 359. AG 0.0 44.0
24. WB Rt28 aprch* 1050.0 1141.0 1050.0 1116.0 * 25. 180. AG 0.0 24.0 2
25. WB Rt28 depar* 1069.0 1197.0 1121.0 1424.0 * 233. 13. AG 0.0 44.0
26. WB Rt28 depar* 1121.0 1424.0 1126.0 1570.0 * 146. 2. AG 0.0 32.0
27. WB Rt28 depar* 1126.0 1570.0 1257.0 2180.0 * 624. 12. AG 0.0 32.0
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
1. REC E (MID S) * 743.0 1116.0 5.0
2. REC E (164 S) * 857.0 1123.0 5.0
3. REC E (82 S) * 939.0 1128.0 5.0
4. REC E (CNR) * 1020.0 1134.0 5.0
5. REC E (82 E) * 1022.0 1053.0 5.0
6. REC E (82 E) * 1075.0 1056.0 5.0
7. REC E (CNR) * 1076.0 1137.0 5.0
8. REC E (82 N) * 1156.0 1142.0 5.0
9. REC E (164 N) * 1238.0 1146.0 5.0
10. REC E (MID N) * 1341.0 1153.0 5.0
11. REC W (MID N) * 1453.0 1280.0 5.0
12. REC W (164 N) * 1316.0 1272.0 5.0
13. REC W (82 N) * 1234.0 1269.0 5.0
14. REC W (CNR) * 1138.0 1288.0 5.0
15. REC W (82 W) * 1137.0 1385.0 5.0
16. REC W (164 W) * 1145.0 1466.0 5.0
17. REC W (MID W) * 1156.0 1626.0 5.0
18. REC W (MID W) * 1072.0 1597.0 5.0
19. REC W (164 W) * 1043.0 1434.0 5.0
20. REC W (82 W) * 1026.0 1354.0 5.0
Page 1
1B1A1420.OUT
21. REC W (CNR) * 995.0 1273.0 5.0
22. REC W (82 S) * 900.0 1248.0 5.0
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 3
TIME : 13:30:17
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
Receptor Data
-------------
* COORDINATES (FT)
RECEPTOR * X Y Z
-------------------------*------------------------------------
23. REC W (164 S) * 819.0 1243.0 5.0
24. REC W (MID S) * 692.0 1235.0 5.0
25. REC W (church) * 568.0 1376.0 5.0
Model Results
-------------
Remarks : In search of the wind direction corresponding
to the maximum concentration, only the first
direction, of the directions with the same maximum
```

concentrations, is indicated as the maximum.
* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED
* (MICROGRAMS/M**3)
* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10
--------*--
MAX+BKG * 1.7 2.0 1.9 1.8 1.0 0.9 1.8 1.7 1.5 1.6
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 1.7 2.0 1.9 1.8 1.0 0.9 1.8 1.7 1.5 1.6
WIND DIR* 70 45 285 280 10 355 275 280 65 285
JULIAN * 3 2 1 1 2 2 1 1 3 1
HOUR * 2 21 21 20 14 11 19 20 1 21
* REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
--------*--
MAX+BKG * 2.2 2.3 2.3 1.7 1.3 1.3 1.2 1.2 1.3 1.5
- BKG * 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 2.2 2.3 2.3 1.7 1.3 1.3 1.2 1.2 1.3 1.5
WIND DIR* 250 260 255 235 250 235 205 155 120 105
JULIAN * 1 1 1 1 1 1 1 3 3 3
HOUR * 14 16 15 11 14 11 5 19 12 9
* REC21 REC22 REC23 REC24 REC25
--------*--
MAX+BKG * 1.7 2.3 2.4 2.4 0.6
- BKG * 0.0 0.0 0.0 0.0 0.0
--------*--
MAX * 1.7 2.3 2.4 2.4 0.6
WIND DIR* 100 255 255 105 220
JULIAN * 3 1 1 3 1
HOUR * 8 15 15 9 8
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 4
TIME : 13:30:17
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
THE HIGHEST CONCENTRATION OF 2.40 UG/M**3 OCCURRED AT RECEPTOR REC23.
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 5
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
==============
Output Section
==============
NOTES PERTAINING TO THE REPORT
1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (*).
FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.
PRIMARY AND SECONDARY AVERAGES.
FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Highest Second Highest Third Highest Fourth Highest Fifth Highest
Rcptr Ending Ending Ending Ending Ending
No. Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm Conc Day Hr Calm
1 1.308 (2,24) C 0 0.512 (1,24) C 0 0.408 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
2 1.567 (2,24) C 0 0.550 (1,24) C 0 0.400 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
3 1.575 (2,24) C 0 0.613 (1,24) C 0 0.358 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
4 1.271 (2,24) C 0 0.637 (1,24) C 0 0.463 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
5 0.733 (2,24) C 0 0.204 (1,24) C 0 0.121 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
6 0.696 (2,24) C 0 0.213 (1,24) C 0 0.113 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
7 1.167 (2,24) C 0 0.704 (1,24) C 0 0.354 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
8 1.204 (2,24) C 0 0.562 (1,24) C 0 0.392 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0

9 1.138 (2,24) C 0 0.517 (1,24) C 0 0.354 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
10 1.138 (2,24) C 0 0.542 (1,24) C 0 0.375 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
11 1.396 (3,24) C 0 1.358 (1,24) C 0 0.033 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
12 1.504 (3,24) C 0 1.454 (1,24) C 0 0.100 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
13 1.517 (1,24) C 0 1.475 (3,24) C 0 0.137 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
14 1.029 (1,24) C 0 0.992 (3,24) C 0 0.246 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
15 0.842 (1,24) C 0 0.413 (3,24) C 0 0.379 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
16 0.854 (1,24) C 0 0.383 (2,24) C 0 0.300 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
17 0.863 (1,24) C 0 0.517 (2,24) C 0 0.192 (3,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
18 0.954 (3,24) C 0 0.404 (2,24) C 0 0.263 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
19 1.083 (3,24) C 0 0.483 (2,24) C 0 0.388 (1,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
20 1.154 (3,24) C 0 0.517 (1,24) C 0 0.467 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
21 1.271 (3,24) C 0 1.100 (1,24) C 0 0.292 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
22 1.700*(3,24) C 0 1.517*(1,24) C 0 0.129 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
23 1.700 (3,24) C 0 1.492 (1,24) C 0 0.108 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
24 1.658 (3,24) C 0 1.492 (1,24) C 0 0.108 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
25 0.412 (3,24) C 0 0.308 (1,24) C 0 0.008 (2,24) C 0 0.000 (1, 0) C 0 0.000 (1, 0) C 0
1 0.743 (3,24) C 0
 CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 6
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
THE HIGHEST 3 - DAY AVERAGE CONCENTRATIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Receptor Maximum Ending
Number Conc Day Hr Calm
2 0.839 (3,24) C 0
3 0.849 (3,24) C 0
4 0.790 (3,24) C 0
5 0.353 (3,24) C 0
6 0.340 (3,24) C 0
7 0.742 (3,24) C 0
8 0.719 (3,24) C 0
9 0.669 (3,24) C 0
10 0.685 (3,24) C 0
11 0.929 (3,24) C 0
12 1.019 (3,24) C 0
13 1.043 (3,24) C 0
14 0.756 (3,24) C 0
15 0.544 (3,24) C 0
16 0.513 (3,24) C 0
17 0.524 (3,24) C 0
18 0.540 (3,24) C 0

19 0.651 (3,24) C 0
20 0.712 (3,24) C 0
21 0.888 (3,24) C 0
22 1.115* (3,24) C 0
23 1.100 (3,24) C 0
24 1.086 (3,24) C 0
25 0.243 (3,24) C 0
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 1.308 (2,24) 0.00 1.31 0.00 0.43 0.01 0.10 0.20 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.03 0.50 0.00 0.00 0.00
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 1.567 (2,24) 0.00 1.57 0.00 0.43 0.24 0.10 0.19 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.11 0.41 0.00 0.00 0.03
Links 20+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 1.575 (2,24) 0.00 1.58 0.00 0.43 0.23 0.10 0.15 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.01 0.00 0.00 0.00 0.27 0.21 0.00 0.00 0.04
Links 20+ 0.05 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 7
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
4 1.271 (2,24) 0.00 1.27 0.00 0.41 0.02 0.08 0.04 0.03 0.00 0.00 0.00 0.00
Links 10+ 0.16 0.02 0.00 0.00 0.00 0.30 0.05 0.00 0.00 0.07
Links 20+ 0.06 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
5 0.733 (2,24) 0.00 0.73 0.00 0.14 0.03 0.01 0.03 0.06 0.00 0.00 0.00 0.01
Links 10+ 0.12 0.02 0.00 0.00 0.00 0.12 0.08 0.00 0.00 0.03
Links 20+ 0.04 0.00 0.00 0.02 0.02 0.00 0.00 0.00 0.00 0.00
6 0.696 (2,24) 0.00 0.70 0.00 0.10 0.01 0.01 0.02 0.10 0.00 0.00 0.00 0.01
Links 10+ 0.16 0.03 0.00 0.00 0.00 0.10 0.04 0.00 0.00 0.03
Links 20+ 0.04 0.00 0.00 0.02 0.02 0.00 0.00 0.00 0.00 0.00
7 1.167 (2,24) 0.00 1.17 0.00 0.27 0.00 0.04 0.01 0.17 0.00 0.00 0.00 0.00
Links 10+ 0.28 0.03 0.00 0.00 0.00 0.18 0.02 0.00 0.00 0.05
Links 20+ 0.06 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
8 1.204 (2,24) 0.00 1.20 0.00 0.01 0.00 0.00 0.00 0.49 0.00 0.00 0.00 0.01
Links 10+ 0.40 0.08 0.00 0.00 0.03 0.05 0.00 0.00 0.00 0.04
Links 20+ 0.06 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
9 1.138 (2,24) 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.49 0.00 0.00 0.00 0.03
Links 10+ 0.39 0.11 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.02

Links 20+ 0.05 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
10 1.138 (2,24) 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.50 0.01 0.00 0.00 0.12
Links 10+ 0.35 0.12 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 1.396 (3,24) 0.00 1.40 0.00 0.00 0.00 0.00 0.00 0.03 0.14 0.02 0.06 0.84
Links 10+ 0.00 0.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.504 (3,24) 0.00 1.50 0.00 0.00 0.00 0.00 0.00 0.12 0.05 0.01 0.04 0.20
Links 10+ 0.76 0.33 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 1.517 (1,24) 0.00 1.52 0.01 0.05 0.00 0.01 0.03 0.10 0.00 0.00 0.00 0.00
Links 10+ 0.82 0.20 0.00 0.00 0.05 0.07 0.08 0.00 0.00 0.04
Links 20+ 0.03 0.00 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
14 1.029 (1,24) 0.00 1.03 0.02 0.09 0.01 0.03 0.05 0.04 0.00 0.00 0.00 0.00
Links 10+ 0.32 0.00 0.00 0.00 0.00 0.16 0.12 0.00 0.00 0.06
Links 20+ 0.05 0.00 0.00 0.00 0.08 0.00 0.00 0.00 0.00 0.00
15 0.842 (1,24) 0.00 0.84 0.02 0.05 0.00 0.00 0.04 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.07 0.00 0.00 0.00 0.00 0.08 0.11 0.00 0.01 0.10
Links 20+ 0.15 0.00 0.00 0.00 0.21 0.00 0.00 0.00 0.00 0.00
16 0.854 (1,24) 0.00 0.85 0.01 0.04 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.04 0.00 0.00 0.00 0.00 0.05 0.09 0.00 0.07 0.05
Links 20+ 0.24 0.00 0.00 0.00 0.05 0.18 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 8
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
LINK CONTRIBUTION TABLES
MAXIMUM 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
17 0.863 (1,24) 0.00 0.86 0.00 0.02 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.00 0.00 0.00 0.00 0.03 0.07 0.12 0.03 0.01
Links 20+ 0.32 0.00 0.00 0.00 0.00 0.03 0.19 0.00 0.00 0.00
18 0.954 (3,24) 0.00 0.95 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.02 0.03
Links 10+ 0.06 0.05 0.00 0.00 0.00 0.01 0.00 0.19 0.05 0.01
Links 20+ 0.42 0.00 0.00 0.00 0.01 0.05 0.05 0.00 0.00 0.00
19 1.083 (3,24) 0.00 1.08 0.00 0.01 0.00 0.00 0.00 0.05 0.01 0.00 0.02 0.03
Links 10+ 0.13 0.05 0.00 0.00 0.00 0.02 0.00 0.00 0.09 0.16
Links 20+ 0.43 0.00 0.00 0.00 0.07 0.03 0.00 0.00 0.00 0.00
20 1.154 (3,24) 0.00 1.15 0.00 0.02 0.00 0.00 0.00 0.05 0.01 0.00 0.02 0.03
Links 10+ 0.20 0.06 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.24
Links 20+ 0.38 0.00 0.00 0.00 0.09 0.00 0.00 0.00 0.00 0.00
21 1.271 (3,24) 0.00 1.27 0.00 0.07 0.00 0.03 0.00 0.08 0.01 0.00 0.02 0.03
Links 10+ 0.26 0.05 0.00 0.00 0.00 0.45 0.00 0.00 0.00 0.18
Links 20+ 0.04 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00
22 1.700 (3,24) 0.00 1.70 0.00 0.13 0.04 0.06 0.09 0.05 0.00 0.00 0.02 0.03
Links 10+ 0.12 0.04 0.00 0.00 0.00 0.55 0.52 0.00 0.00 0.04
Links 20+ 0.02 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
23 1.700 (3,24) 0.00 1.70 0.00 0.14 0.06 0.07 0.13 0.03 0.00 0.00 0.01 0.02
Links 10+ 0.07 0.03 0.00 0.00 0.00 0.15 0.96 0.00 0.00 0.03
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.658 (3,24) 0.00 1.66 0.00 0.15 0.03 0.08 0.15 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.03 0.00 0.00 0.00 0.05 1.11 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.412 (3,24) 0.00 0.41 0.01 0.06 0.00 0.00 0.06 0.01 0.00 0.00 0.00 0.00

Links 10+ 0.03 0.02 0.00 0.00 0.00 0.02 0.19 0.00 0.00 0.00
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.512 (1,24) 0.00 0.51 0.08 0.18 0.00 0.02 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.17 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 9
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
2 0.550 (1,24) 0.00 0.55 0.04 0.22 0.03 0.03 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.17 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.613 (1,24) 0.00 0.61 0.03 0.22 0.08 0.03 0.07 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.18 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
4 0.637 (1,24) 0.00 0.64 0.03 0.25 0.07 0.03 0.08 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.02 0.17 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
5 0.204 (1,24) 0.00 0.20 0.03 0.05 0.01 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.09 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Page 4
1B1A1420.OUT
6 0.213 (1,24) 0.00 0.21 0.02 0.05 0.01 0.00 0.03 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
7 0.704 (1,24) 0.00 0.70 0.02 0.25 0.03 0.03 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.04 0.15 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.12 0.00 0.00 0.00 0.00 0.00 0.00
8 0.562 (1,24) 0.00 0.56 0.02 0.11 0.02 0.03 0.05 0.15 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.00 0.00 0.00 0.00 0.06 0.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
9 0.517 (1,24) 0.00 0.52 0.01 0.06 0.00 0.01 0.03 0.22 0.00 0.00 0.00 0.00
Links 10+ 0.05 0.00 0.00 0.00 0.00 0.05 0.08 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.542 (1,24) 0.00 0.54 0.01 0.03 0.00 0.00 0.03 0.27 0.00 0.00 0.00 0.00
Links 10+ 0.09 0.02 0.00 0.00 0.00 0.03 0.06 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 1.358 (1,24) 0.00 1.36 0.00 0.03 0.00 0.00 0.02 0.15 0.00 0.00 0.00 0.54
Links 10+ 0.28 0.25 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.454 (1,24) 0.00 1.45 0.01 0.03 0.00 0.00 0.03 0.12 0.00 0.00 0.00 0.00
Links 10+ 0.88 0.25 0.00 0.00 0.00 0.03 0.07 0.00 0.00 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 1.475 (3,24) 0.00 1.48 0.00 0.00 0.00 0.00 0.00 0.14 0.03 0.00 0.03 0.10
Links 10+ 0.86 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
14 0.992 (3,24) 0.00 0.99 0.00 0.00 0.00 0.00 0.00 0.14 0.02 0.00 0.02 0.06
Links 10+ 0.55 0.18 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 10
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
LINK CONTRIBUTION TABLES
SECOND HIGHEST 24-HOUR AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
15 0.413 (3,24) 0.00 0.41 0.00 0.00 0.00 0.00 0.00 0.06 0.02 0.00 0.03 0.05
Links 10+ 0.17 0.08 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
16 0.383 (2,24) 0.00 0.38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.05 0.03 0.00
Links 20+ 0.17 0.00 0.00 0.00 0.00 0.10 0.03 0.00 0.00 0.00
17 0.517 (2,24) 0.00 0.52 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.00 0.00
Links 20+ 0.21 0.00 0.00 0.00 0.00 0.00 0.19 0.00 0.00 0.00
18 0.404 (2,24) 0.00 0.40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.15 0.00 0.00
Links 20+ 0.21 0.00 0.00 0.00 0.00 0.00 0.05 0.00 0.00 0.00
19 0.483 (2,24) 0.00 0.48 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.14 0.00
Links 20+ 0.25 0.00 0.00 0.00 0.00 0.03 0.03 0.00 0.00 0.00
20 0.517 (1,24) 0.00 0.52 0.02 0.06 0.02 0.00 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.13 0.18 0.00 0.00 0.04
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
21 1.100 (1,24) 0.00 1.10 0.03 0.12 0.05 0.06 0.12 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.43 0.30 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
22 1.517 (1,24) 0.00 1.52 0.03 0.12 0.04 0.07 0.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 1.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
23 1.492 (1,24) 0.00 1.49 0.05 0.12 0.00 0.06 0.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 1.11 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.492 (1,24) 0.00 1.49 0.09 0.08 0.00 0.05 0.15 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 1.12 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.308 (1,24) 0.00 0.31 0.05 0.00 0.00 0.00 0.06 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.00 0.00 0.00 0.00 0.00 0.00 0.19 0.00 0.00 0.00
Links 20+ 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 11
TIME : 13:30:18

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JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
1 0.743 ( 3,24) 0.00 0.74 0.03 0.26 0.01 0.04 0.10 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.02 0.23 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2 0.839 ( 3,24) 0.00 0.84 0.01 0.27 0.11 0.04 0.09 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.03 0.01 0.00 0.00 0.00 0.05 0.19 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
3 0.849 ( 3,24) 0.00 0.85 0.01 0.27 0.11 0.04 0.07 0.02 0.00 0.00 0.00 0.01
Links 10+ 0.04 0.02 0.00 0.00 0.00 0.09 0.13 0.00 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
4 0.790 ( 3,24) 0.00 0.79 0.01 0.25 0.03 0.04 0.04 0.04 0.00 0.00 0.01 0.01
Links 10+ 0.07 0.02 0.00 0.00 0.00 0.10 0.08 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00 0.00
Page 5
1B1A1420.OUT
5 0.353 ( 3,24) 0.00 0.35 0.01 0.06 0.01 0.00 0.02 0.03 0.00 0.00 0.01 0.01
Links 10+ 0.04 0.02 0.00 0.00 0.00 0.04 0.06 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00 0.00
6 0.340 ( 3,24) 0.00 0.34 0.01 0.05 0.01 0.01 0.02 0.04 0.00 0.00 0.01 0.01
Links 10+ 0.06 0.02 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.01
Links 20+ 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.00 0.00
7 0.742 ( 3,24) 0.00 0.74 0.01 0.18 0.01 0.02 0.02 0.12 0.01 0.00 0.01 0.01
Links 10+ 0.11 0.03 0.00 0.00 0.00 0.07 0.06 0.00 0.00 0.02
Links 20+ 0.02 0.00 0.00 0.04 0.01 0.00 0.00 0.00 0.00 0.00
8 0.719 ( 3,24) 0.00 0.72 0.01 0.04 0.01 0.01 0.02 0.28 0.01 0.00 0.01 0.02
Links 10+ 0.15 0.04 0.00 0.00 0.01 0.04 0.04 0.00 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
9 0.669 ( 3,24) 0.00 0.67 0.00 0.02 0.00 0.00 0.01 0.29 0.01 0.00 0.01 0.03
Links 10+ 0.15 0.05 0.00 0.00 0.01 0.02 0.03 0.00 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 0.685 ( 3,24) 0.00 0.68 0.00 0.01 0.00 0.00 0.01 0.31 0.02 0.00 0.01 0.06
Links 10+ 0.15 0.06 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
11 0.929 ( 3,24) 0.00 0.93 0.00 0.01 0.00 0.00 0.01 0.06 0.05 0.01 0.02 0.46
Links 10+ 0.09 0.19 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
12 1.019 ( 3,24) 0.00 1.02 0.00 0.01 0.00 0.00 0.01 0.08 0.02 0.00 0.01 0.07
Links 10+ 0.57 0.19 0.00 0.00 0.00 0.01 0.02 0.00 0.00 0.00
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
13 1.043 ( 3,24) 0.00 1.04 0.00 0.02 0.00 0.00 0.01 0.08 0.01 0.00 0.01 0.03
Links 10+ 0.58 0.17 0.00 0.00 0.02 0.02 0.03 0.00 0.00 0.01
Links 20+ 0.03 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 12
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
LINK CONTRIBUTION TABLES
MAXIMUM 3 - DAY AVERAGED LINK CONTRIBUTIONS
IN MICROGRAMS/M**3
INCLUDING AMBIENT BACKGROUND CONCENTRATIONS.
Rcptr Total Ending Ambient Total Link Link Link Link Link Link Link Link Link Link
No. Conc Day Hr Backgnd Link +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
14 0.756 ( 3,24) 0.00 0.76 0.01 0.03 0.00 0.01 0.02 0.06 0.01 0.00 0.01 0.02
Links 10+ 0.29 0.06 0.00 0.00 0.01 0.05 0.04 0.01 0.01 0.03
Links 20+ 0.06 0.00 0.00 0.00 0.05 0.00 0.00 0.00 0.00 0.00
15 0.544 ( 3,24) 0.00 0.54 0.01 0.02 0.00 0.00 0.01 0.02 0.01 0.00 0.01 0.02
Links 10+ 0.08 0.03 0.00 0.00 0.00 0.03 0.04 0.01 0.02 0.03
Links 20+ 0.10 0.00 0.00 0.00 0.10 0.02 0.01 0.00 0.00 0.00
16 0.513 ( 3,24) 0.00 0.51 0.00 0.01 0.00 0.00 0.01 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.04 0.03 0.00 0.00 0.00 0.02 0.03 0.02 0.03 0.02
Links 20+ 0.13 0.00 0.00 0.00 0.02 0.09 0.01 0.00 0.00 0.00
17 0.524 ( 3,24) 0.00 0.52 0.00 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.02 0.02 0.00 0.00 0.00 0.01 0.02 0.08 0.01 0.00
Links 20+ 0.18 0.00 0.00 0.00 0.00 0.01 0.13 0.00 0.00 0.00
18 0.540 ( 3,24) 0.00 0.54 0.00 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.01 0.01
Links 10+ 0.02 0.02 0.00 0.00 0.00 0.01 0.03 0.11 0.02 0.01
Links 20+ 0.22 0.00 0.00 0.00 0.00 0.02 0.03 0.00 0.00 0.00
19 0.651 ( 3,24) 0.00 0.65 0.01 0.02 0.00 0.00 0.02 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.04 0.02 0.00 0.00 0.00 0.03 0.04 0.01 0.08 0.07
Links 20+ 0.24 0.00 0.00 0.00 0.02 0.02 0.01 0.00 0.00 0.00
20 0.712 ( 3,24) 0.00 0.71 0.01 0.03 0.01 0.00 0.02 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.07 0.02 0.00 0.00 0.00 0.06 0.06 0.01 0.01 0.13
Links 20+ 0.21 0.00 0.00 0.00 0.03 0.01 0.00 0.00 0.00 0.00
21 0.888 ( 3,24) 0.00 0.89 0.01 0.06 0.02 0.03 0.04 0.03 0.00 0.00 0.01 0.01
Links 10+ 0.09 0.02 0.00 0.00 0.00 0.29 0.10 0.01 0.00 0.08
Links 20+ 0.07 0.00 0.00 0.00 0.03 0.00 0.00 0.00 0.00 0.00
22 1.115 ( 3,24) 0.00 1.12 0.01 0.08 0.03 0.04 0.08 0.02 0.00 0.00 0.01 0.01
Links 10+ 0.04 0.01 0.00 0.00 0.00 0.18 0.55 0.00 0.00 0.02
Links 20+ 0.03 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00
23 1.100 ( 3,24) 0.00 1.10 0.02 0.08 0.02 0.04 0.09 0.01 0.00 0.00 0.00 0.01
Links 10+ 0.02 0.01 0.00 0.00 0.00 0.05 0.72 0.00 0.00 0.01
Links 20+ 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
24 1.086 ( 3,24) 0.00 1.09 0.03 0.08 0.01 0.04 0.10 0.01 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.01 0.00 0.00 0.00 0.02 0.77 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
25 0.243 ( 3,24) 0.00 0.24 0.02 0.02 0.00 0.00 0.04 0.00 0.00 0.00 0.00 0.00
Links 10+ 0.01 0.01 0.00 0.00 0.00 0.01 0.13 0.00 0.00 0.00
Links 20+ 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL3QHCR (Dated: 95221)
DATE : 3/ 8/10 PAGE: 13
TIME : 13:30:18
JOB: Site 1 Opt 1/2 2014 1B1A1420.DA3 RUN: PYRENE
CALM DURATION FREQUENCY
Hours of Frequency
Consecutive of
Calm Winds Occurrence (Julian day/hour ending) of Significant Occurrences
No calm wind hours were encountered during this processing period.
Program terminated normally
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