

**EXPOSURE ASSESSMENT  
UNDERTAKEN TO SUPPORT THE EVALUATION  
OF THE HAP DEFINITION "GLYCOL ETHERS"**

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## EXECUTIVE SUMMARY

This document describes an exposure assessment for surfactant alcohol ethoxylates and their derivatives (AED) to address U.S. Environmental Protection Agency's (U.S. EPA's) classification of "glycol ethers" as a single class of hazardous air pollutants (HAPs) in Section 112 of the Federal Clean Air Act (CAA) of 1990, as amended. Section 112 (b)(3) of the CAA allows for the removal of substances from the list of regulated HAPs if there is a showing that there is sufficient data on the health and environmental effects of the substance to determine that emissions, ambient concentrations, bioaccumulation, or deposition of the substance may reasonably be anticipated to not cause adverse effects to human health or the environment.

Horizon Environmental Corporation (Horizon), on behalf of the Soap and Detergent Association (SDA), has compiled this information for the U.S. EPA, consistent with the requirements of the CAA, relevant to SDA's request for EPA to redefine the HAP "glycol ethers" category to remove surfactant AED compounds. After a similar demonstration of facts by SDA, the U.S. EPA removed these same constituents from regulation under the Emergency Planning and Community Right-to-Know Act (EPCRA) in 1994.

In order to reduce the level of effort associated with preparation, review and interpretation of this information, conservative assumptions were used in development of all methods presented in the document, including data review, formula derivation, and air dispersion modeling. This conservative approach to the development of information was expected to result in emission estimates and toxicological values in excess of those expected as a result of normal production and use of surfactant AED. Although the methods are technically valid and appropriate for the purposes of this effort, the methods employed herein should in no way be a recommended method for calculating site-specific emission values from chemical facilities.

A summary of the conservative assumptions employed during the course of development of this information, as enumerated in this document, are as follows:

- The U.S. EPA's Toxic Release Inventory (TRI) database was used as a basis for estimating the quantity of surfactant AED emitted from manufacturers, formulators and end users of these compounds. Estimates of source emissions of surfactant AED developed using this method are anticipated to be greater than actual emissions due to the grouping of these compounds with other (low- and medium-weight) glycol ethers,

and the conservative estimation techniques typically used by industry in developing and reporting these emissions estimates.

- Emissions estimates were developed based on a single facility using up to 600,000,000 pounds per year of surfactant AED, the total annual domestic production of Shell Chemical Company. No other domestic manufacturer or any formulator or end user can reasonably be expected to use volumes of AED approaching this amount.
- Emissions estimates were based on release of AED-saturated air from these facilities in a volume equal to the quantity of surfactant AED mentioned above. No technically valid calculation procedures could generate greater emissions of these constituents.
- Physical property data used for estimating vapor emissions were based on the lowest molecular weight surfactant AED in this classification, which has the greatest vapor pressure and, therefore, results in the greatest quantity of emissions. The vast majority of compounds classified as surfactant AED have much greater molecular weights and much lower vapor pressures.
- For the purposes of this exercise, fugitive emissions are assumed to be 41 percent of point-source emissions, since an examination of the use and emission data in the 1992 TRI database for the 284\_ category support this number. Facilities which are considered to utilize the majority of surfactant AED compounds report under the 284\_ category.
- A chronic key exposure index (KEI) range of 0.2 to 2.0 mg/m<sup>3</sup> has been estimated for surfactant AED based on a review of published toxicity assessments. This conservative KEI range, used in the course of this assessment, was developed using an uncertainty factor of 1,000- to 10,000-fold below the minimum reported acute effect level.
- Conservative dispersion modeling assumptions were utilized in the representative and hypothetical scenarios for configuration and placement of each facility (e.g., terrain conditions surrounding the facility, stack height and configuration, distance between stack and facility fence line).

Due to the compounded nature of conservative assumptions utilized throughout the development of methods presented in this document, emission estimates are extremely conservative in nature. Even the use of these extraordinarily conservative assumptions and emission modeling scenarios result in exposure estimates of 0.00003 mg/m<sup>3</sup> (0.03 µg/m<sup>3</sup>) for a representative facility and 0.0973 mg/m<sup>3</sup> (97.3 µg/m<sup>3</sup>) for a hypothetical worst case

facility. These exposure estimates are well below the estimated chronic KEI range of 0.2 mg/m<sup>3</sup> to 2.0 mg/m<sup>3</sup> for surfactant AED.

This assessment clearly demonstrates that sufficient data exist to determine that emissions, ambient concentrations, bioaccumulation, or deposition of AED may reasonably be anticipated to not cause adverse effects to human health or the environment. Therefore, U.S. EPA should move to revise the current CAA Section 112 (b)(1) definition of HAP "glycol ethers" and appropriately incorporate the revised Emergency Planning and Community Right-to-Know Act (EPCRA) definition.

## 1.0 INTRODUCTION

This document has been prepared to address U.S. Environmental Protection Agency's (U.S. EPA's) classification of "glycol ethers" as a single class of hazardous air pollutants (HAPs) in Section 112 of the Federal Clean Air Act (CAA) of 1990, as amended. Section 112 (b)(3) of the CAA allows for the removal of substances from the list of regulated HAPs if there is a showing that there is sufficient data on the health and environmental effects of the substance to determine that emissions, ambient concentrations, bioaccumulation, or deposition of the substance may reasonably be anticipated to not cause adverse effects to human health or the environment.

The current definition of "glycol ethers" under Section 112 (b)(1) of the CAA includes a wide range of compounds exhibiting very diverse toxicological effects. For example, although the methyl and ethyl ethers of ethylene glycol, and their acetate derivatives, have been shown to cause reproductive and developmental toxicity (Clayton, 1984), not all molecules containing the relatively common ethylene glycol moiety are similarly toxic. There is convincing evidence from animal studies that increasing the alkyl chain length, for example, to four carbon atoms, as in the butyl ethers of ethylene and diethylene glycols, greatly reduces the potential for causing reproductive and developmental effects (ECETOC, 1994).

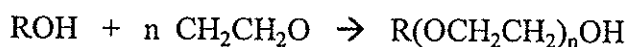
Extrapolating from these data, high molecular weight compounds which predominately have alkyl chain lengths in the C<sub>8</sub> to C<sub>18</sub> range [surfactant alcohol ethoxylates and their derivatives (AED)], would also not be expected to exhibit the same toxicity as the methyl and ethyl ethers of ethylene glycol. Several representative ethoxylates have been tested in animals and show no evidence of reproductive or developmental toxicity (Talmadge, 1994). In addition, the physical properties of surfactant AED (e.g., solid-phase with extremely low vapor pressures at moderate temperatures) and the nature of their use as surfactants (i.e., they are not pulverized and, therefore, do not pose a particulate emissions threat) are such that air emissions of these compounds are insignificant.

Horizon Environmental Corporation (Horizon), on behalf of the Soap and Detergent Association (SDA), has compiled information for the U.S. EPA, consistent with the requirements of the CAA, that is relevant to SDA's request that EPA redefine the HAP "glycol ethers" category to remove surfactant AED compounds. After a similar demonstration of facts by SDA, the U.S. EPA removed these same constituents from regulation under the Emergency Planning and Community Right-to-Know Act (EPCRA) in 1994.

In order to reduce the level of effort associated with preparation, review and interpretation of this information, conservative assumptions were used in development of all methods presented in the document, including data review, formula derivation, and air dispersion modeling. This conservative approach to the development of information was expected to result in emission estimates and toxicological values in excess of those expected as a result of normal production and use of surfactant AED. Although the methods are technically valid and appropriate for the purposes of this effort, the methods employed herein should in no way be considered a recommended method for calculating site-specific emission values from chemical facilities.

## 2.0 GLYCOL ETHER CHEMISTRY AND CATEGORIES

Production of glycol ethers is accomplished by the chemical reaction of an alcohol with ethylene oxide to form the glycol ether according to the equation:



where:

n = an integer representing the number of ethylene oxide molecules; and

R = alkyl group

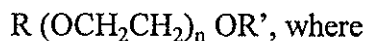
For the purposes of this project, glycol ethers are subdivided into three classes; high molecular weight, mid-molecular weight and low molecular weight, based on the alkyl group of the alcohol.

Low molecular weight glycol ethers are defined as those compounds formed with one- and two-carbon alcohols. Mid-molecular weight glycol ethers are defined as those compounds formed with three- to seven-carbon alcohols. Both classes of glycol ethers are currently regulated under EPCRA 313, and would continue to be regulated under CAA Section 112 after the proposed category redefinition.

High molecular weight glycol ethers, more appropriately referred to as surfactant AED, are defined as compounds formed with alcohols comprised of eight or more carbon molecules. These compounds are the subject of this effort. Exposure to surfactant AED has been shown to cause no significant health effects (Talmadge, 1994).

The initial 1988 definition of glycol ethers under EPCRA 313 included all three classes of

compounds described above. In 1994, EPA recognized the inappropriate application of the EPCRA statutory criteria and redefined the glycol ether category as follows:



n = 1, 2 or 3

R = alkyl C<sub>7</sub> or lower; or phenyl or substituted phenyl

R' = H or alkyl C<sub>7</sub> or lower; or OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate or sulfonate

The "n = 1, 2 or 3" term comes from human health concerns with certain subsets of mono-, di- and tri-ethers of ethylene glycol under Toxic Substances Control Act (TSCA) Section 4 (USEPA 1986, 1988, 1989).

In issuing the redefinition<sup>1</sup>, EPA stated:

"EPA has evaluated the current scope of the Section 313 glycol ethers category and believes that it is overly broad. The existing category included substances that traditionally have not been considered glycol ethers. Also, it is apparent that this category contains members that do not meet the EPCRA Section 313 (d)(2) criteria for listing. EPA has reviewed the current glycol ethers category and is redefining it to exclude the surfactant glycol ethers."

It is SDA's intent to submit technical information to U.S. EPA which will provide sufficient basis for U.S. EPA to evaluate the current CAA Section 112 (b)(1) definition of the HAP "glycol ethers" and appropriately consider the revised EPCRA definition.

### 3.0 ESTIMATE OF SURFACTANT AED EMISSIONS

In order to estimate the annual emissions of surfactant AED, a list of standard industrial classification (SIC) codes was developed that is intended to identify high quantity emitters of surfactant AED representative of each of three categories (manufacturer, formulator, end user). This selection was designed to allow the estimation of annual emissions based on the entities producing or using the majority of the surfactant AED in each industrial category. In addition, mathematical and empirical calculations were developed to quantify emissions of surfactant AED from a hypothetical "worst case" emitter.

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<sup>1</sup> 59 FR 34387 (July 5, 1994)

### **3.1 ANNUAL EMISSIONS OF SURFACTANT AED**

The subsequent sections describe the procedures used to develop an estimate of the annual emissions of surfactant AED. As stated previously, conservative techniques were used throughout the estimate.

#### **3.1.1 QUERY OF TRI DATABASE**

A query was made of U.S. EPA's Toxic Release Inventory (TRI) database<sup>2</sup>. The query results established the quantity of glycol ethers used and released as either stack or fugitive air emissions for specific standard industrial classification (SIC) codes for the year 1992. Selection of appropriate SIC codes to identify applicable, large-scale manufacturers, formulators, and end users of surfactant AED was conducted with the input of SDA and in consultation with the U.S. EPA's Office of Air Quality Planning and Standards (OAQPS).

While emission reports are available for the 1993 calendar year, 1992 data (June, 1993 TRI reporting) were utilized since these were the last data available in which the emissions reported reflect the entire spectrum of glycol ether compounds covered by the original definition. U.S. EPA redefined the EPCRA "glycol ether" category in June, 1994 as discussed previously, and allowed reporting sources to revise their 1993 TRI emission reports to reflect this redefinition.

Emissions identified during the database search were, therefore, inclusive of both the surfactant AED in question and all other classes of glycol ethers (i.e., mid- and low molecular weight glycol ethers). Verification of sources identified (or obviously absent), and estimation of the proportion of total emissions due to surfactant AED for each SIC code were completed with the help of SDA, as outlined in the following sections.

#### **3.1.2 CORRELATION WITH SDA**

SDA reviewed a list of SIC codes to establish, based on experience, which SIC codes were the most plausible sources of surfactant AED emissions. Based on SDA knowledge of member facilities, similar non-member facilities, and industries with which SDA members do business (e.g., suppliers, distributors, customers), SDA was asked to add or delete SIC codes from the preliminary list as appropriate. Following this review, U.S. EPA, OAQPS personnel were requested to verify the list and identify any missed industrial classifications as a final review.

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<sup>2</sup> Established on the "Right to Know Net" (<http://www.rtk.net>), a database jointly operated by OMB Watch and The Unison Institute.

The final list of SIC codes used for query of the TRI database is presented in Table 3.1. This listing is anticipated to be inclusive of sources responsible for the majority of surfactant AED emissions. As noted previously, the emissions estimated in the database are inclusive of all classes of glycol ethers.

### **3.1.3 PROPORTIONALITY OF GLYCOL ETHER SPECIES**

In order to estimate emissions of surfactant AED apart from low and mid-molecular weight glycol ethers, theoretical proportionality factors were developed based on physical property data and SDA industry knowledge. Specifically, a proportionality between surfactant AED and the combined low and mid-molecular weight glycol ethers was established for each SIC code category queried. The ratio was applied to the TRI database query results to estimate usage and emissions of surfactant AED apart from low and mid-molecular weight glycol ethers. A listing of the proportionality factors applied to each SIC code category also is presented in Table 3.1.

### **3.1.4 ESTIMATION OF ANNUAL SURFACTANT AED EMISSIONS**

Query of the TRI database captured only those sources which belong to specific industry classifications that manufacture, formulate and/or use sufficient quantities of materials in their processes so as to be required to report under the Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III. From the list of applicable SIC codes presented in Table 3.1, only those industries included under SIC code classes 26 (Paper and Allied Products) and 28 (Chemicals and Applied Products) were required to report annual emissions. The total annual surfactant AED emissions from those SIC codes which are not required to report under SARA Title III, but which may be identified as potential sources and are included in Table 3.1, are considered to be negligible compared to those industries which were required to report. Since the intent of the database search was to identify sources which produce or utilize significant quantities of surfactant AED, the absence of the other SIC code classes in the TRI database is not considered to have a significant impact on the results of the query.

The emission rates reported in the TRI database are considered to be greater than actual emission rates due to the conservative nature of techniques generally utilized in generating SARA Title III emission reports. For example, the use of emission ranges (e.g., emissions between 0 and 500 pounds per year) tend to overestimate overall emission rates. This overestimation is due to the fact that the when a range is utilized to quantify a facility

emission rate, the maximum value of the specified range is used in totaling the emissions from the reporting SIC code, while the actual rate from the facility may be nearer the lower end of the range.

Subsequent to query of the database, the emitters were separated into their appropriate categories (manufacturers, formulators, and end users) by a review of available process descriptions and with the assistance of SDA. Total estimated annual surfactant AED use and emissions from each of the three industry categories were calculated by the summation of the values from the compiled database, following application of the appropriate SIC code proportionality factors, as presented in Table 3.1. The estimated annual surfactant AED emissions from each of the three industry categories are summarized in Table 3.2<sup>3</sup>. Since facilities from only SIC code categories 26 and 28 are required to report to the TRI database, the values presented in Table 3.2 represent 50 percent of the total glycol ether usage and emissions reported by the TRI database.

A full listing of all applicable emission sources identified by the TRI database query is presented in Appendix A. The information presented in Appendix A includes facility name, location, U.S. EPA ID number, annual quantity of glycol ethers used, and the estimate of annual stack and fugitive air emissions of glycol ethers. The proportionality factor developed for each SIC code category was not applied to the information included in Appendix A, so the values presented therein represent use and emission of all classes of glycol ethers.

### **3.2 DEVELOPMENT OF EMISSION SCENARIOS**

To dimension the upper bound worst case emissions value for use in the exposure assessments, a hypothetical facility utilizing significant quantities of surfactant AED was developed. Due to the conservative assumptions used during estimation of surfactant AED emissions and air dispersion modeling, the estimated exposure to surfactant AED from this hypothetical facility is expected to be greater than those for any individual manufacturer, formulator, or end user.

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<sup>3</sup> The sum of surfactant glycol ether emissions calculated is intended to act as a basis of comparison or “reality check” to the emission rates calculated using other, more conservative methods, as presented in Section 3.2 of this document.

### 3.2.1 CONSERVATIVE EMISSION ESTIMATE

The total annual domestic production of surfactant AED is estimated from U.S. Department of Commerce data to be two billion pounds. Shell Chemical Company, considered to be the largest producer of surfactant AED in the U.S., reported production of approximately six hundred million pounds of the compound in 1995, or 30 percent of the total domestic production.

Based on this information, a hypothetical facility was developed that was assumed to utilize Shell's total annual domestic production of 600 million pounds of surfactant AED as a conservative basis for estimating emissions. This hypothetical facility was assumed to model a major manufacturer of surfactant AED, albeit at the high end of the production scale. As a result of the conservative assumptions utilized, the use of this hypothetical facility predicts emission and exposure levels that would reasonably be expected to exceed any other manufacturing facility, including Shell. Emission estimates and exposure levels calculated for this facility are also in excess of any existing formulator or end user of surfactant AED.

### 3.2.2 EMISSIONS ESTIMATION

The U.S. EPA publication, Toxic Release Inventory Reporting Form R and Instructions provides industry with guidance on calculation of reportable emissions. Section 5.1 (page 25) of that publication states the following:

“Report the total of all releases of the toxic chemical to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments and spills; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions. Engineering estimates and mass balance calculations (using purchase records, inventories, engineering knowledge or process specifications of the quantity of the toxic chemical entering product, hazardous waste manifests, or monitoring records) may be useful in estimating fugitive emissions.”

This language guided Horizon to establish the following expedient and conservative criteria for making estimated surfactant AED emission calculations from a hypothetical facility. As

stated previously, these calculations are not considered valid for precise estimation of emission levels for all facilities, but rather represent a conservative estimate.

The hypothetical usage rate developed, and the corresponding emissions estimated, are intended to simulate a facility either manufacturing surfactant AED or formulating products from a surfactant AED precursor. The assumptions utilized to calculate surfactant AED emissions during storage, transfer, manufacture and/or formulation, presented subsequently, are sufficiently conservative that results obtained are considered equally applicable to both the manufacturing and formulating industries.

Since concentrations and quantities of surfactant AED utilized by end user processes are significantly lower than those utilized in manufacturing and formulating processes, the potential emission and human exposure levels from end user processes will be significantly less. Therefore, end user process emissions of surfactant AED will not be individually addressed (but are nonetheless embraced) in this evaluation and exposure assessment.

In summary, the following conservative assumptions were used in developing the subsequent emission estimation calculations:

- Emissions estimates were developed based on a single facility using up to 600,000,000 pounds per year of surfactant AED, the total annual domestic production of Shell Chemical Company. No other domestic manufacturer or any formulator or end user can reasonably be expected to use quantities of these compounds approaching this amount.
- Emissions estimates were based on release of AED-saturated air from these facilities in a volume equal to the quantity of surfactant AED mentioned above, although the low vapor pressures of these compounds would likely result in significantly lower concentrations of surfactant AED in the air spaces. No technically valid calculation procedures could generate greater emissions of these constituents than the assumption of air saturation.
- The physical properties of the compound used in emission estimation and exposure modeling differ substantially from the those of the majority of compounds subject to this reclassification. Typical molecular weights of surfactant AED with chain lengths of  $C_{12} - 16$  range from 290 to 370 g/g-mole. At typical processing temperatures between 24 and 49 degrees Celsius, average vapor pressures of the compounds range from 0.00016 to 0.0013 mm Hg (Gunderson, 1997). The  $C_8 -$

EO<sub>1</sub> compound used for emission modeling, at a molecular weight of 174 g/g-mole and a vapor pressure of 0.005 mm Hg, is more volatile and has a lower molecular weight than greater than 90 percent of the AED encountered in typical surfactant processes (Jacobs, 1997). As such, the emissions estimated will be considerably greater than actual emissions.

- Fugitive emissions are considered to be on the order of 1 percent due to the fact that the vapor pressure of the lowest molecular weight surfactant AED in this classification is 0.005 mm Hg (Casterton, 1997). However, for the purposes of this exercise, estimates of fugitive emissions were assumed to be equivalent to 41 percent of point-source emissions, since an examination of the use and emission data in the 1992 TRI database for the 284\_ category support this number. Facilities which are considered to utilize the majority of surfactant AED compounds report under the 284\_ category.

*Raw Material Emissions (RME)* are emissions estimated to occur due to releases during the storage and transmission of surfactant AED. The formula for calculation of RME is derived from the ideal gas law and takes the form of a typical tank venting equation. While this method accounts only for “working losses”, SDA experience with member facilities indicates that “standing storage losses” are negligible due to the use of enclosed tanks located in a stable environment.

Based on industry standards, it is assumed that most surfactant AED storage tanks are atmospheric tanks equipped with open vents or conservation vacuum vents. These devices allow the tanks to operate essentially at atmospheric pressure, and vent to atmosphere only when the internal pressure of the tank rises above atmospheric pressure, or 760 mm Hg. Since the vapor pressure of surfactant AED results in the addition of a maximum partial pressure of no greater than 0.005 mm Hg above atmospheric pressure, vapor losses during standing storage are negligible.

This tank venting equation is based on the premise that all available vapor spaces contain air saturated with surfactant AED. Therefore, since the vented air is likely to exhibit significantly lower AED concentrations, the resulting emission estimate is considered to be a conservative estimate of the amount of surfactant AED vapors released. The form of the equation obtained is:

$$\text{RME} = (\text{VP}/760)(\text{lb}/\text{yr})(1/8.33)(1/\text{SG})(1/7.481)(1/359)(\text{MW})(\text{air transmission factor})$$

where:

RME = the amount of surfactant AED vapor released in pounds per year

lb/yr = pounds of liquid surfactant AED usage per year

MW = molecular weight of the surfactant AED in grams per gram mole

SG = specific gravity of the liquid surfactant AED

VP = vapor pressure of the liquid surfactant AED in mm Hg at 20 degrees Celsius

The following assumptions are made in developing the preceding equation:

- (1) Surfactant AED-saturated air behaves as if it were an ideal gas.
- (2) All vapor spaces (e.g., pipes, drums, storage vessels, mix tanks) contain air saturated with surfactant AED.
- (3) Total volume of saturated air is equal to the total volume of liquid displaced.
- (4) All vapors in the system are lost to the atmosphere.

Formula Derivation:

$$P_1 V_1 / n_1 = P_2 V_2 / n_2 \quad (1)$$

Subscript 1 is a reference to the AED vapors and subscript 2 is a reference comparison to air. Setting  $V_1$  equal to  $V_2$ , (assuming equal volumes), equation (1) reduces to:

$$(P_1/P_2)n_2 = n_1 \quad (2)$$

Based on a volume of 359 standard cubic feet (scf) per 1 mole air,  $n_2 = V_1(1/359)$ , and equation (2) becomes:

$$(P_1/P_2)V_1(1/359) = n_1 \quad (3)$$

where:

- $V_1$  = volume of AED vapor per year = volume of liquid AED usage per year
- $V_1 = [\text{lb/yr of liquid AED usage}] \times [(1/8.33)(1/\text{S.G.}) \text{ in gal/lb}] \times [1/7.481 \text{ in ft}^3/\text{gal}] = \text{ft}^3/\text{yr}$

since:

- $(\text{SG})(\text{the reference density of water, i.e. } 8.33 \text{ lb/gal}) = \text{density of AED in lb/gal}; 1/\text{SG}$

and 1/8.33 converts the units to gal/lb

- 7.481 = the number of gallons in a cubic foot of water; 1/7.481 converts the units to ft<sup>3</sup>/gal

Therefore, the equation becomes:

$$(P_1/P_2)(\text{lb/yr})(1/8.33)(1/\text{SG})(1/7.481)(1/359) = n_1 \quad (4)$$

where:

- $n_1$  = lb of AED vapor per year/MW of AED.

Equation (4) becomes:

$$(P_1/P_2)(\text{lb/yr})(1/8.33)(1/\text{SG})(1/7.481)(1/359)(\text{MW}) = \text{lb of AED vapor/year} \quad (5)$$

Now, assume:

- $P_1$  = vapor pressure of AED
- $P_2$  = vapor pressure of air = 760 mm Hg

and equation (5) becomes:

$$(P_1/760)(\text{lb/yr})(1/8.33)(1/\text{SG})(1/7.481)(1/359)(\text{MW}) = \text{lb of AED vapor/year} \quad (6)$$

As an additional assumption, an extra factor is included; *the Air Transmission Factor or ATF*. [Vapor emissions during raw material transfer are assumed to be equal in volume (at 20 degrees Celsius) to the liquid being transferred plus an additional 30 percent for line blowdown. The vapors are assumed to be at equilibrium with the liquid (i.e. saturated at 20 degrees Celsius).] Therefore, the final equation becomes:

$$\text{RME} = (\text{VP}/760)(\text{lb/yr})(1/8.33)(1/\text{S.G.})(1/7.481)(1/359)(\text{MW})(1.3) \quad (7)$$

Surfactant AED emissions modeled from the hypothetical facility possessed the physical properties (i.e., VP, SG and MW) of the most volatile compound in the surfactant AED class previously excluded in the EPCRA redefinition. More specifically, calculations were based on the physical properties of the C<sub>8</sub> - EO<sub>1</sub> alcohol ethoxylate. All other surfactant AED in the category have lower vapor pressures and higher specific gravities (Gunderson, 1997). The following values describing the physical constants for the C<sub>8</sub> - EO<sub>1</sub> alcohol

ethoxylate were supplied by the Quality Assurance Department of Shell Chemical Company:

- VP = 0.005 mm Hg (at 20 degrees Celsius)
- MW = 174 g/g-mole
- SG = 0.86

It should be noted that the physical properties of this compound differ substantially from the majority of compounds subject to this reclassification. Typical molecular weights of surfactant AED with chain lengths of C<sub>12</sub> - C<sub>16</sub> range from 290 to 370 g/g mole. At typical processing temperatures between 24 and 49 degrees Celsius, average vapor pressures of the compounds range from 0.00016 to 0.0013 mm Hg (Gunderson, 1997). As stated previously, C<sub>8</sub> - EO<sub>1</sub> is the lowest weight species that would be affected by the proposed redefinition. As such, it is more volatile and has a lower molecular weight than over 90 percent of the AED encountered in typical surfactant processes (Jacobs, 1997). Therefore, the emissions estimated will be considerably greater than actual emissions.

**Process Emissions (PE)** are emissions estimated to occur during processing of surfactant AED, either in production of the compounds themselves, or in formulation of products containing the surfactant AED. The formula for calculation of PE is based on the formula for calculation of RME, but includes additional empirical factors to take process conditions into account. The form of the equation obtained is:

$$\text{PE} = \text{RME} \times \text{Process Factor} \times \text{Concentration Factor}$$

Definitions:

- Process factor - A factor related to the relative increase in apparent emissions during the manufacture of, or formulation from, surfactant AED compounds. Processing typically occurs at elevated temperatures (i.e., above standard room temperature) and under conditions of increased ventilation. This increased exposure to air is mainly due to mixing operations and the transfer of the surfactant AED through multiple process vessels. For purposes of estimating process emissions, this factor is assumed to be three (3). This factor, derived from industry experience, is based on operations at elevated temperatures, and the transfer of materials through an average of 2 to 3 individual processing vessels, resulting in an estimated potential for emissions three times greater than during storage and initial transfer of

surfactant AED (RME).

- Concentration factor - A factor representing the approximate weight percent of 1, 2 and 3 mole surfactant AED (i.e., n =1, 2 or 3 per Section 2.0) in both raw materials and finished products. For purposes of estimating process emissions, this factor is assumed to be 20 percent (0.20) for all raw materials and finished products. Although this percentage may actually be slightly higher in a few raw materials and theoretically in fewer formulations, industry knowledge indicates that 20 percent is conservative when chosen to represent all raw materials and finished products.

*Fugitive Emissions (FE)* estimates are based on a review of the use and emission data compiled in the 1992 TRI database. Of the total point-source emissions previously calculated for surfactant AED, (i.e., raw material emissions + process emissions), a certain additional percentage is expected to occur as fugitive emissions. In the case of chemicals with vapor pressures below 760 mm Hg, as the vapor pressure decreases toward zero, less and less of the chemical will be released as fugitive. Therefore, it could easily be envisioned that a material with VP = 0.005 mm Hg would contribute no more than 1 percent of the sum of raw material and process emissions to the overall emissions.

However, for the purposes of this exercise, estimates of fugitive emissions were assumed to be equal to 41 percent of point-source emissions, since an examination of the use and emission data in the 1992 TRI database for the 284\_ category support this number. The sum of all fugitive emissions reported for all facilities reporting under the 284\_ category represent 41 percent of the sum of all emissions reported for the same category. Facilities which are considered to utilize the majority of surfactant AED compounds report under the 284\_ category. Therefore, the form of the equation obtained is:

$$FE = (RME + PE) \times 0.41$$

The total emission (TE) estimate for surfactant AED from a facility is, therefore, the sum of the raw material emissions, process emissions, and fugitive emissions:

$$TE = RME + PE + FE$$

### 3.2.3 RESULTS OF EMISSION SCENARIOS

The results of the calculation of RME, PE and FE from the hypothetical facility described in the preceding sections is presented in Table 3.3. It can be seen that the emissions from the

conservative hypothetical facility are extremely small in comparison to usage rates. The total annual surfactant AED emissions from the hypothetical facility is less than 0.00002 percent of the amount utilized by the facility. It is apparent that while conservative methods were developed to estimate the surfactant AED emissions, the intrinsic high molecular weight and low vapor pressure of the compounds minimize the possible emissions.

The emission quantity estimated by this exercise was utilized in the dispersion modeling presented in Section 4.2 of this document. The levels of receptor exposure assessed as a result of the modeling effort will be compared with the key exposure index concentration developed in Section 4.1.

#### **4.0 SURFACTANT AED EXPOSURE ASSESSMENT**

In addition to establishing annual emissions of surfactant AED, an assessment of potential exposure from hypothetical facilities to a key exposure index (KEI) for the compounds in question is also presented herein. Potential exposures were calculated using simple air dispersion modeling techniques, and emission estimates from the hypothetical conservative facility described previously. The KEI value was developed through a conservative toxicity assessment, as described in the following section.

#### **4.1 TOXICOLOGICAL DATA**

Using the limited inhalation toxicological data available for surfactant AED, a chronic KEI was estimated for surfactant AED for use in this exposure assessment. There have been few acute and no subchronic inhalation toxicity studies of surfactant AED on which to base a KEI. This is presumably due to the low vapor pressure of these materials and the unlikelihood of inhalation as a route of human exposure.

Published and proprietary toxicity studies with surfactant AED have recently been reviewed by Talmage (1994). For surfactant AED, "the alcohols used are typically linear primary with a mixture of carbon chain lengths in the range 8 to 18 carbons. Ethoxylate chains typically range from an average of 1 to 12 ethylene oxide units." A comparison of the relative toxicity of glycol ether classes is presented in Appendix B.

##### **4.1.1 ANIMAL STUDIES**

Several animal studies of surfactant AED toxicity are documented in the literature. The studies indicate that "alcohol ethoxylate surfactants were not acutely toxic to rats at

concentrations less than or equal to their saturated vapor concentrations in air. Acute toxic thresholds were reached only when animals were exposed to the undiluted test chemical in the form of a respirable mist or aerosol” (Talmage, 1994). One estimate of the saturated vapor concentration was  $220 \text{ mg/m}^3$ , where no deaths or other toxic effects were reported after four hours of exposure. When higher aerosol concentrations were used, one hour  $\text{LC}_{50}$ 's (lethal concentration for 50 percent of the study population) ranged from 3,400 to  $20,700 \text{ mg/m}^3$ , and four hour  $\text{LC}_{50}$ 's ranged from 1,500 to  $>6,600 \text{ mg/m}^3$ . The lowest range for a four hour  $\text{LC}_{50}$  in a specific study was 1,500 to  $3,000 \text{ mg/m}^3$  (Benke, 1977). The exposed rats showed signs of eye and respiratory tract irritation, but “necropsy findings in survivors (through 14 days after exposure) were unremarkable.”

Only one repeated inhalation study in animals was reported (Grubb, 1960, as cited in Talmage, 1994); 2 of 9 rats had evidence of laryngeal irritation, and 1 of these 2 had diffuse pulmonary hemorrhages, after 10 days of repeated two hour exposures to a steam generated from a 20 percent aqueous solution of ethoxylated lauryl alcohol (a  $\text{C}_{12}\text{-EO}_7$  surfactant AED), but the concentration of AED was not determined. This study was performed to evaluate an inhalation therapy for respiratory infections, which was judged by these authors to be safe for human use.

Talmage concluded from the animal studies that “chronic oral and dermal exposures to AE surfactants produced no significant treatment-related effects. AE surfactants were not skin sensitizers, not reproductive/developmental toxicants, not genotoxic, and not carcinogenic.”

#### 4.1.2 HUMAN STUDIES

There is only one report of a human inhalation study. Adults, infants and children were continuously exposed for 8 hours to a steam from a water vaporizer containing a 20 percent aqueous solution of ethoxylated lauryl alcohol and other materials being evaluated as a therapy for respiratory infections (Larkin, 1957 cited in Talmage, 1994). “No harmful effects were noted.” Human studies indicate that dermal exposure to high concentrations of surfactant AED can cause reversible local anesthesia, but this is unlikely to be a significant effect from inhalation exposures.

Although there are no suitable repeated exposure studies with quantitative dose-response data on which to base a chronic inhalation KEI, the acute toxicity data suggest that a concentration on the order of a saturated vapor ( $220 \text{ mg/m}^3$ ) would not cause acute toxic nor respiratory irritant effects. Animal and human repeated exposure studies suggest that no cumulative systemic toxicity would occur from repeated exposure to such a vapor

concentration.

#### 4.1.3 PROPOSED INHALATION KEI FOR SURFACTANT AED

A key exposure index for surfactant AED can be estimated by comparison with structural analogs or similar materials for which reference exposure concentrations (RfCs) have been developed. Table 4.1 lists some of these materials.

A *subchronic* KEI for surfactant AED, based on a review of the available toxicity in comparison with similar materials for which RfCs have been derived, would appear to be of the same order of magnitude as the subchronic RfC for 2-methoxy-1-propanol (MP) (i.e., 20 mg/m<sup>3</sup>). Structurally, MP is similar to AED in that both are alkyl ethers with a functional hydroxyl group. Toxicologically, neither material exhibits systemic toxicity by inhalation; MP causes CNS depression - possibly by anoxia, while AED may cause respiratory tract irritation.

When compared by molecular weight, however, MP and AED differ significantly. The molecular weight of MP is approximately 90 g/g mole, while that of the C<sub>8</sub>-EO<sub>1</sub> AED surfactant, the lowest molecular weight compound excluded previously in the EPCRA redefinition, is approximately 174 g/g mole. As discussed in Appendix B, an increase in the molecular weight of surfactant AED, and the corresponding decrease in vapor pressure, results in a significant decrease in the likelihood of both systemic and inhalation toxicity.

No chronic RfC has been derived for MP, but a chronic RfC is usually derived by applying a default uncertainty factor of 10 to the subchronic value. This default uncertainty factor of 10 would, therefore, also be applied to the subchronic KEI of 20 mg/m<sup>3</sup> for surfactant AED. In addition, when using the known toxicological activity of one compound (MP) to estimate the toxicological activity of another structurally related compound (AED), accepted practice calls for the application of a separate uncertainty factor, ranging from 1 to 10. Selection of a sufficiently conservative value in the 1 to 10 range is typically dependent upon the overall quality of the data.

While a strong argument could be made for utilizing an uncertainty factor of 1 in generating a chronic KEI, due to the apparent low toxicity of surfactant AED, the chronic KEI estimated as a result of this effort will be presented as a range of exposure concentration based on the application of the range of uncertainty factors. Therefore, the low levels of acute toxicity by inhalation and the low levels of subchronic toxicity in oral and dermal studies, coupled with a comparison of subchronic RfCs for structurally and toxicologically

similar materials, suggests a chronic KEI for AED ranging from 0.2 mg/m<sup>3</sup> to 2.0 mg/m<sup>3</sup>. This proposed concentration range is approximately 1,000 to 10,000 fold below the lowest reported acute four hour LC<sub>50</sub> in rats, and 100 to 1,000 fold below the estimated saturated vapor concentration of 220 mg/m<sup>3</sup>.

## **4.2 DISPERSION MODELING**

Finally, mathematical dispersion modeling analyses were conducted to assess the potential impact of surfactant AED emissions from hypothetical facilities on ambient air quality. Considering the conservative emissions developed in Section 3.2, model simulations were conducted for two types of emitting facilities:

- Surfactant AED formulating facility with representative emission characteristics; and
- Hypothetical facility designs with conservative emission characteristics.

All model simulations were conducted utilizing U.S. EPA's SCREEN3 dispersion model. Numerical inputs to the SCREEN3 model were adjusted to create the two dispersion scenarios introduced above. A technical description of the SCREEN3 model, the methodology for predicting impacts from the two dispersion scenarios, and an assessment of the resultant impacts are provided below.

### **4.2.1 DESCRIPTION OF DISPERSION MODEL**

SCREEN3 is a gaussian-based dispersion model designed to conservatively estimate the maximum air quality impact from stationary sources of air toxics (USEPA, 1992) and is incorporated by reference into U.S. EPA's Guideline on Air Quality Models (40 CFR Part 51, Appendix W). Technical assumptions of the SCREEN3 model applicable to this air quality impact analysis are as follows:

- Simulation of point source emissions utilizing gaussian dispersion equation;
- Assessment of the influence of varying meteorological conditions;
- Estimation of maximum ground-level concentrations at varying distances;
- Incorporation of stack-tip downwash effects;
- Utilization of urban and rural dispersion coefficients;
- Assessment of building downwash effects, including cavity regions; and
- Evaluation of the influence of varying terrain features on dispersion.

An assessment of terrain features exceeding stack heights was conducted by exercising the VALLEY complex terrain algorithm incorporated into SCREEN3. When processing utilizing the VALLEY algorithm, SCREEN3 defaults the stack height wind speed to 2.5 m/s and the stability class to F (E for urban mode).

Considering its flexibility and conservative dispersion assumptions, SCREEN3 is an appropriate model for estimating maximum surfactant AED concentrations from both representative and hypothetical facilities. The output of all model runs performed as a part of this effort are presented in Appendix C.

#### 4.2.2 METHODOLOGY FOR ESTIMATING IMPACTS

Initial model simulations focused on conservative emissions from a surfactant AED formulating facility with representative exhaust characteristics. A vapor ventilation system was identified as “representative”. The following exhaust characteristics from a single stack associated with this type of facility were input to SCREEN3:

Emission Rate (conservative):	0.0015 grams/sec (105 lb/yr)
Stack Height:	36'
Stack Diameter:	26.7"
Stack Flow Rate:	14,300 acfm
Stack Exit Temperature:	293 K
Influencing Building Height:	25'
Influencing Building Width:	400' x 400'
Nearest Distance to Fenceline:	750'

Emissions from the representative facility were modeled over flat terrain utilizing both urban and rural dispersion coefficients. Predicted impacts are summarized in Table 4.2.

Additional model simulations focused on conservative emissions from a hypothetical facility with conservative exhaust characteristics (“hypothetical facility”). In contrast to the representative facility, conservatively-based exhaust characteristics not usually associated with a surfactant AED emitting facility were input. The following exhaust characteristics from a single stack associated with this type of facility were input to SCREEN3 and held constant throughout all hypothetical facility design model simulations:

Emission Rate (conservative):	0.0015 grams/sec (105 lb/yr)
Stack Diameter:	48"
Stack Flow Rate:	1,000 acfm
Stack Exit Temperature:	293 K
Nearest Distance to Fenceline:	50'

Conservative assumptions already inherent in SCREEN3 include assessing impacts across the full range of potential meteorological conditions, as well as assuming that the emissions are not depleted either by chemical transformation processes or deposition effects. Additional factors affecting downwind impacts from a single point source include the exhaust characteristics of the stack, distance to public receptors, urban/rural setting, building downwash, and terrain.

To insure identification of the maximum potential surfactant AED impact, variables were input to the model over a full range of hypothetical values. A summary of the matrix of values is presented below:

Stack Height ( $H_s$ ):	15' , 30' , 50' , 100' (maximum creditable height)
Building Height:	$H_s/1.51$ , $H_s/1.21$ , $H_s$ , 0' (no downwash)
Terrain Height:	0' , $H_s$ , 500' , 1000'
Dispersion Coefficient:	rural, urban

Emissions from the hypothetical facility were modeled over flat, simple, and complex terrain utilizing both urban and rural dispersion coefficients.

A facility with the shortest stack height, greatest potential building downwash, shortest distance to a public receptor, and terrain height equal to stack height can be expected to provide the highest predicted impact; however, the full matrix of values were simulated to insure that the maximum concentration was identified. As shown in Section 4.2.3, the maximum impact occurs at the shortest stack height with no building downwash effects.

Modeling inputs associated with the hypothetical facility designs are summarized in Table 4.3 (flat terrain simulations) and Table 4.4 (elevated terrain simulations), while predicted impacts are summarized in Table 4.5 (flat terrain simulations) and Table 4.6 (elevated terrain simulations).

Complex terrain effects (terrain height exceeding stack height) from the hypothetical facility were assessed by exercising the VALLEY terrain algorithm incorporated into SCREEN3. Building downwash effects are not simulated when employing VALLEY. Predicted impacts are summarized in Table 4.2.

#### **4.2.3 AIR QUALITY IMPACTS**

Utilizing SCREEN3, dispersion modeling analyses were conducted to identify maximum surfactant AED impacts from a facility with representative and hypothetical emission characteristics. Considering conservative emission rates, predicted impacts from each facility type were compared against the acceptable chronic KEI range of 0.2 mg/m<sup>3</sup> to 2.0 mg/m<sup>3</sup> (200 µg/m<sup>3</sup> to 2,000 µg/m<sup>3</sup>), based on an annual average.

With the exception of model simulations conducted in VALLEY mode, which provides a predicted 24-hour average concentration, SCREEN3 concentrations are predicted in 1-hour averages. Since the key exposure index is defined in terms of annual average, U.S. EPA's recommended methodology (U.S. EPA, 1992) for converting short-term averaging period impacts into annual averages was employed. Predicted 1-hour average SCREEN3 impacts were converted to an annual average concentration using a factor of 0.08, while 24-hour average predicted impacts were converted to an annual average concentration using a factor of 0.2.

A summary of the maximum air quality impacts due to the two facilities is provided below.

##### **Representative Facility**

The ambient air quality impact assessment for the representative facility with conservative emission rates consisted of two model simulations. Predicted concentrations are summarized in Table 4.2. Utilizing SCREEN3 in a flat terrain mode, considering both urban and rural dispersion coefficients, the maximum predicted annual average surfactant AED concentration from the representative facility is 0.03 µg/m<sup>3</sup> (0.00003 mg/m<sup>3</sup>) at a 105 lb/yr emission rate.

##### **Hypothetical Facility**

The ambient air quality impact assessment for the hypothetical facility with conservative emission rates consisted of 72 model simulations. Predicted concentrations are

summarized in Table 4.2 (complex terrain simulations), Table 4.5 (flat terrain simulations) and Table 4.6 (elevated terrain simulations). Utilizing SCREEN3 in a flat, elevated, and complex terrain mode, considering both urban and rural dispersion coefficients, the maximum predicted annual average surfactant AED concentration from the hypothetical facility is  $97.3 \mu\text{g}/\text{m}^3$  ( $0.0973 \text{ mg}/\text{m}^3$ ) at a 105 lb/yr emission rate.

## **5.0 CONCLUSIONS**

Consistent with the requirements of the CAA, Horizon, on behalf of SDA, is submitting this informational report to U.S. EPA to support SDA's request to modify the definition of the HAP "glycol ethers" category under the CAA to delete surfactant alcohol ethoxylates and their derivatives. The physical properties and toxicity of these compounds are such that Horizon has been able to make extraordinarily conservative assumptions regarding the rate of emissions of these compounds and the exposure setting, and still effectively demonstrate that emissions of these compounds do not cause adverse health or environmental effects.

A summary of the conservative assumptions employed during the course of development of this information, as enumerated in this document, are as follows:

- The U.S. EPA's Toxic Release Inventory (TRI) database was used as a basis for estimating the quantity of surfactant AED emitted from manufacturers, formulators and end users of these compounds. Estimates of source emissions of surfactant AED developed using this method are anticipated to be greater than actual emissions due to the grouping of these compounds with other (low- and medium-weight) glycol ethers, and the conservative estimation techniques typically used by industry in developing and reporting these emissions estimates.
- Due to the homologous nature of surfactant AEDs and the presence of low- and medium-weight "glycol ethers" compounds in these mixtures, a proportionality between the two classes of compounds was developed for each SIC category and applied to the TRI data. This proportionality was developed based on the physical properties of the surfactant AED and mid-molecular weight glycol ethers, and was applied to all other types of industry in which these constituents are used.
- Emissions estimates were developed based on a single facility using up to 600,000,000 pounds per year of surfactant AED, the total annual domestic production of Shell Chemical Company. No other domestic manufacturer or any formulator or end user can reasonably be expected to use volumes of AED approaching this amount.

- Emissions estimates were based on release of AED-saturated air from these facilities in a volume equal to the quantity of surfactant AED mentioned above. No technically valid calculation procedures could generate greater emissions of these constituents.
- For the purposes of this exercise, fugitive emissions are assumed to be 41 percent of point-source emissions, since an examination of the use and emission data in the 1992 TRI database for the 284\_ category support this number. Facilities which are considered to utilize the majority of surfactant AED compounds report under the 284\_ category.
- The physical properties of the compound used in emission estimation and exposure modeling differ substantially from the those of the majority of compounds subject to this reclassification. Typical molecular weights of surfactant AED with chain lengths of C<sub>12-16</sub> range from 290 to 370 g/g-mole. At typical processing temperatures between 24 and 49 degrees Celsius, average vapor pressures of the compounds range from 0.00016 to 0.0013 mm Hg (Gunderson, 1997). The C<sub>8</sub> - EO<sub>1</sub> compound used for emission modeling, at a molecular weight of 174 g/g-mole and a vapor pressure of 0.005 mm Hg, is more volatile and has a lower molecular weight than greater than 90 percent of the AED encountered in typical surfactant processes (Jacobs, 1997). As such, the emissions estimated will be considerably greater than actual emissions.
- A chronic key exposure index (KEI) range of 0.2 to 2 mg/m<sup>3</sup> has been estimated for surfactant AED based on a review of published toxicity assessments. This conservative KEI range, used in the course of this assessment, was developed using an uncertainty factor of 1,000- to 10,000-fold below the minimum reported acute effect level. In addition, surfactant AED were consistently negative during *in vitro* genotoxicity assays and chronic animal feeding studies, indicating there is little concern for chronic toxicity (Talmage, 1994).
- Conservative dispersion modeling assumptions were utilized in the representative and hypothetical scenarios for configuration and placement of each facility (e.g., terrain conditions surrounding the facility, stack height and configuration, distance between stack and facility fence line). Dispersion modeling conditions at actual facilities are anticipated to be more favorable.

Due to the compounded nature of conservative assumptions utilized throughout the development of methods presented in this document, emission estimates are extremely

conservative in nature. Even the use of these extraordinarily conservative assumptions and emission modeling scenarios result in exposure estimates of  $0.00003 \text{ mg/m}^3$  ( $0.03 \text{ }\mu\text{g/m}^3$ ) for a representative facility and  $0.0973 \text{ mg/m}^3$  ( $97.3 \text{ }\mu\text{g/m}^3$ ) for a hypothetical worst case facility. These exposure estimates are well below the estimated chronic KEI range of  $0.2 \text{ mg/m}^3$  to  $2.0 \text{ mg/m}^3$  for surfactant AED.

This assessment clearly demonstrates that sufficient data exist to determine that emissions, ambient concentrations, bioaccumulation, or deposition of AED may reasonably be anticipated to not cause adverse effects to human health or the environment. Therefore, U.S. EPA should move to revise the current CAA Section 112 (b)(1) definition of HAP “glycol ethers” and appropriately incorporate the revised Emergency Planning and Community Right-to-Know Act (EPCRA) definition.

## 6.0 REFERENCES

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Letter to Alvaro J. DeCarvalho from Philip Casterton, March 18, 1997

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Letter to Brian Greenwald from Larry Jacobs, February 12, 1997

**TABLE 3.1**  
**POTENTIALLY APPLICABLE SIC CODES**  
**FOR SURFACTANT AED EMISSIONS ASSESSMENT**

<u>SIC CODE</u>	<u>INDUSTRY DESCRIPTION</u>	<u>PROPORTIONALITY FACTOR<sup>1</sup></u>
<b>07</b>	<b>Agricultural Services</b>	<b>95/5</b>
071	Soil Preparation Services	
072	Crop Services	
078	Landscape and Horticultural Services	
<b>26</b>	<b>Paper and Allied Products</b>	<b>50/50</b>
261	Pulp Mills	
262	Paper Mills	
263	Paperboard Mills	
265	Paperboard Containers and Boxes	
267	Misc. Converted Paper Products	
<b>28</b>	<b>Chemicals and Allied Products</b>	<b>50/50</b>
284	Soap, Cleaners, and Toilet Goods	
285	Paint and Allied Products	
286	Industrial Organic Chemicals	
287	Agricultural Chemicals	
289	Miscellaneous Chemical Products	
<b>42</b>	<b>Trucking and Warehousing</b>	<b>50/50</b>
422	Public Warehousing and Storage	
423	Trucking Terminal Facilities	
<b>51</b>	<b>Wholesale Trade - Nondurable Goods</b>	<b>50/50</b>
516	Chemical and Allied Products	
519	Miscellaneous Nondurable Goods	
<b>72</b>	<b>Personal Services</b>	<b>80/20</b>
721	Laundry, Cleaning, and Garment Services	
<b>75</b>	<b>Auto Repair, Services, and Parking</b>	<b>25/75</b>
754	Automotive Services, Except Repair	

<sup>1</sup> The proportionality factor, as defined herein, is the estimated ratio of surfactant AED to the sum of low and mid-molecular weight glycol ethers.

**TABLE 3.2**

**SUMMARY OF ESTIMATED ANNUAL SURFACTANT AED  
USAGE AND EMISSIONS BY INDUSTRY CLASS  
FOR SIC CODE CATEGORIES 26 AND 28**

	<b><u>TOTAL USE ON SITE (lb/yr)<sup>1</sup></u></b>	<b><u>TOTAL ESTIMATED EMISSIONS (lb/yr)<sup>2</sup></u></b>
<b>MANUFACTURERS</b>	77,300,000 - 277,000,000	171,000
<b>FORMULATORS</b>	60,100,000 - 355,000,000	529,000
<b>END USERS</b>	43,100 - 431,000	256,000
<b>TOTALS</b>	<b>137,000,000 - 633,000,000</b>	<b>956,000</b>

<sup>1</sup> The values presented as use rates are a summary of usage rates by industry class from the query of the 1992 TRI database (Appendix A) following application of the respective industry description surfactant AED proportionality factor (Table 3.1).

<sup>2</sup> The values presented as estimated emissions are a summary of both fugitive and stack emissions from the query of the 1992 TRI database (Appendix A) following application of the respective industry description surfactant AED proportionality factor (Table 3.1).

**TABLE 3.3**

**SUMMARY OF ANNUAL SURFACTANT AED  
USAGE AND EMISSIONS FROM A HYPOTHETICAL  
CONSERVATIVE FACILITY**

	<b><u>CONSERVATIVE ESTIMATE (lb/yr)</u></b>
<b>ANNUAL USAGE:</b>	600,000,000
<b>RAW MATERIAL EMISSIONS (RME):</b>	46.4
<b>PROCESS EMISSIONS (PE):</b>	27.8
<b>FUGITIVE EMISSIONS (FE):</b>	30.3
<b>TOTAL EMISSIONS:</b>	<b>105</b>

**TABLE 4.1**

**SIMILAR COMPOUNDS WITH DEVELOPED  
TOXICOLOGICAL CRITERIA**

<b>Chemical</b>	<b>Subchronic Criteria (mg/m<sup>3</sup>)</b>	<b>Toxicological Basis</b>
2-Methoxyethanol	0.2 (RfC)	Testicular toxicity; rabbit inhalation
Methyl Ethyl Ketone	2.0 (RfC)	Decreased birth weight; mouse inhalation
2-Ethoxyethanol	2.0 (RfC)	Hematological effects; rabbit inhalation
2-Methoxy-1-propanol	20 (RfC)	Central Nervous System (CNS) depression; rat/rabbit inhalation

ESTIMATED DURING THIS EXERCISE

Surfactant AED	20 (KEI)	No acute inhalation toxicity at saturated vapor concentration (estimated to be 220 mg/m <sup>3</sup> ) Aerosol LC <sub>50</sub> values: 1,500 - 20,700 mg/m <sup>3</sup> (lowest value 1.5 - 3 mg/m <sup>3</sup> ) Dermal anesthetic effects; human derma No chronic toxicity at dietary doses of 1% No reproductive/developmental toxicity No genotoxicity No carcinogenicity
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**Table 4.2**  
**Predicted Impacts**  
**Representative and Hypothetical Facility**

Annual Concentration <sup>1</sup> ( $\mu\text{g}/\text{m}^3$ )	Annual Concentration <sup>2</sup> ( $\mu\text{g}/\text{m}^3$ )	Terrain Height (m)	Notes
0.02	0.03	0.0	Representative facility, conservative emissions.
0.00	0.00	15.0	Hypothetical facility, worst-case emissions, complex terrain, 15' stack height.
0.00	0.00	15.0	Hypothetical facility, worst-case emissions, complex terrain, 30' stack height.
0.00	0.00	100.0	Hypothetical facility, worst-case emissions, complex terrain, 50' stack height.
0.00	0.00	100.0	Hypothetical facility, worst-case emissions, complex terrain, 100' stack height.

<sup>1</sup> Estimated impacts utilizing rural dispersion coefficients.

<sup>2</sup> Estimated impacts utilizing urban dispersion coefficients.

**Table 4.3**  
**SCREEN3 Simulations**  
**Flat Terrain Point Source Inputs**  
**Hypothetical Facility**

Stack Height (m)	Building Height (m)	Building Length (m)	Building Width (m)	Modeling Scenario <sup>1</sup>
4.572	3.03	15.2	15.2	Building height = stack height/1.51.
4.572	3.78	15.2	15.2	Building height = stack height/1.21.
4.572	4.57	15.2	15.2	Building height = stack height
4.572	0.00	0.0	0.0	No building downwash.
9.144	6.06	15.2	15.2	Building height = stack height/1.51.
9.144	7.56	15.2	15.2	Building height = stack height/1.21.
9.144	9.14	15.2	15.2	Building height = stack height
9.144	0.00	0.0	0.0	No building downwash.
15.24	10.10	15.2	15.2	Building height = stack height/1.51.
15.24	12.60	15.2	15.2	Building height = stack height/1.21.
15.24	15.24	15.2	15.2	Building height = stack height
15.24	0.00	0.0	0.0	No building downwash.
30.48	20.20	15.2	15.2	Building height = stack height/1.51.
30.48	25.30	15.2	15.2	Building height = stack height/1.21.
30.48	30.48	15.2	15.2	Building height = stack height
30.48	0.00	0.0	0.0	No building downwash.

<sup>1</sup> Constant parameters: 0.0015 g/sec emission rate, 48" stack diameter, 1000 acfm flow rate, 293 K exit temperature.

**Table 4.4**  
**SCREEN3 Simulations**  
**Elevated Terrain Point Source Inputs**  
**Hypothetical Facility**

Stack Height (m)	Building Height (m)	Building Length (m)	Building Width (m)	Terrain Height (m)	Modeling Scenario <sup>1</sup>
4.572	3.03	15.2	15.2	4.572	Building height = stack height/1.51.
4.572	3.78	15.2	15.2	4.572	Building height = stack height/1.21.
4.572	4.57	15.2	15.2	4.572	Building height = stack height
4.572	0.00	0.0	0.0	4.572	No building downwash.
9.144	6.06	15.2	15.2	9.144	Building height = stack height/1.51.
9.144	7.56	15.2	15.2	9.144	Building height = stack height/1.21.
9.144	9.14	15.2	15.2	9.144	Building height = stack height
9.144	0.00	0.0	0.0	9.144	No building downwash.
15.24	10.10	15.2	15.2	15.24	Building height = stack height/1.51.
15.24	12.60	15.2	15.2	15.24	Building height = stack height/1.21.
15.24	15.24	15.2	15.2	15.24	Building height = stack height
15.24	0.00	0.0	0.0	15.24	No building downwash.
30.48	20.20	15.2	15.2	30.48	Building height = stack height/1.51.
30.48	25.30	15.2	15.2	30.48	Building height = stack height/1.21.
30.48	30.48	15.2	15.2	30.48	Building height = stack height
30.48	0.00	0.0	0.0	30.48	No building downwash.

<sup>1</sup> Constant parameters: 0.0015 g/sec emission rate, 48" stack diameter, 1000 acfm flow rate, 293 K exit temperature.

**Table 4.5**  
**Predicted Impacts**  
**Flat Terrain Point Sources**  
**Hypothetical Facility**

Cavity Concentration ( $\mu\text{g}/\text{m}^3$ )	Annual Concentration <sup>1</sup> ( $\mu\text{g}/\text{m}^3$ )	Annual Concentration <sup>2</sup> ( $\mu\text{g}/\text{m}^3$ )	Notes
17.8	12.3	5.3	Building height = stack height/1.51.
14.3	3.6	1.5	Building height = stack height/1.21.
11.8	0.6	0.6	Building height = stack height
-	1.9	2.4	No building downwash.
8.9	2.5	1.0	Building height = stack height/1.51.
7.1	1.1	0.4	Building height = stack height/1.21.
5.9	0.3	0.3	Building height = stack height
-	0.3	0.4	No building downwash.
5.3	0.6	0.3	Building height = stack height/1.51.
4.2	0.3	0.2	Building height = stack height/1.21.
3.5	0.2	0.2	Building height = stack height
-	0.1	0.1	No building downwash.
2.7	0.1	0.0	Building height = stack height/1.51.
2.1	0.0	0.0	Building height = stack height/1.21.
1.8	0.0	0.0	Building height = stack height
-	0.0	0.0	No building downwash.

<sup>1</sup> Estimated impacts utilizing rural dispersion coefficients.

<sup>2</sup> Estimated impacts utilizing urban dispersion coefficients.

**Table 4.6**  
**Predicted Impacts**  
**Elevated Terrain Point Sources**  
**Hypothetical Facility**

Cavity Concentration ( $\mu\text{g}/\text{m}^3$ )	Annual Concentration <sup>1</sup> ( $\mu\text{g}/\text{m}^3$ )	Annual Concentration <sup>2</sup> ( $\mu\text{g}/\text{m}^3$ )	Notes
21.8	20.7	9.0	Building height = stack height/1.51.
17.5	22.8	9.6	Building height = stack height/1.21.
14.5	1.6	1.6	Building height = stack height
-	97.3	18.7	No building downwash.
10.9	10.0	4.3	Building height = stack height/1.51.
8.7	8.2	3.4	Building height = stack height/1.21.
7.2	0.8	0.8	Building height = stack height
-	97.3	18.6	No building downwash.
6.5	3.1	1.4	Building height = stack height/1.51.
5.2	2.4	1.1	Building height = stack height/1.21.
4.3	0.5	0.4	Building height = stack height
-	80.9	16.6	No building downwash.
3.3	0.6	0.3	Building height = stack height/1.51.
2.6	0.6	0.3	Building height = stack height/1.21.
2.2	0.3	0.2	Building height = stack height
-	57.5	13.5	No building downwash.

<sup>1</sup> Estimated impacts utilizing rural dispersion coefficients.

<sup>2</sup> Estimated impacts utilizing urban dispersion coefficients.

**APPENDIX A**

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**SUMMARY OF 1992 TRI DATABASE QUERY**

# Soap And Detergent Association

## TRI Database: Reported Glycol Ether Emissions - 1992

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2610	NO DATA AVAILABLE						
2611	PORT TOWNSEND PAPER CORP.	PORT TOWNSEND	WA	WAD00927091	1000 - 9999	6600	0
	POTLATCH CORP.	LEWISTON	ID	IDD009061375	100 - 999	0	2100
	S. D. WARREN CO.	SKOWHEGAN	ME	MED06099620	10000 - 99999	1500	0
	THILMANY	KAUKAUNA	WI	WID04653866	1000 - 9999	0	11000
					12100 - 120996	8100	13100
						0.77%	1.52%
2620	NO DATA AVAILABLE						
2621	CHAMPION INTL.	HAMILTON	OH	OHD04159841	1000 - 9999	0	1900
	CPI	WISCONSIN RAPIDS	WI	WIT560010068	10000 - 99999	0	250
	CPI	STEVENS POINT	WI	WID07477150	1000 - 9999	0	250
	DEXTER CORP.	WINDSOR LOCKS	CT	CTD98387191	1000 - 9999	0	29870
	FORT HOWARD CORP.	GREEN BAY	WI	WID00613662	1000 - 9999	6200	0
	MADISON PAPER IND.	MADISON	ME	MED09989806	1000 - 9999	19000	0
	POPE & TALBOT WIS INC.	LADYSMITH	WI	WIT560010506	1000 - 9999	6900	3300
	POPE & TALBOT WIS INC.	EAU CLAIRE	WI	WID07151130	1000 - 9999	770	51000
	POTLATCH CORP.	LEWISTON	ID	IDD009061375	1000 - 9999	733	0
	SCOTT PAPER CO.	MOBILE	AL	ALD00814985	0 - 99	250	0
	SIMPSON PAPER CO.	WEST LINN	OR	ORD05707462	1000 - 9999	397	0
	SIMPSON PAPER CO.	POMONA	CA	CAD981	1000 - 9999	18	250
						20000 - 200088	34268
						3.27%	10.07%
2630	NO DATA AVAILABLE						
2631	FEDERAL PAPER BOARD CO. INC.	VERSAILLES	CT	CTD00114786	10000 - 99999	26800	0
	MEAD COATED BOARD INC.	COTTONTON	AL	ALD04100629	10000 - 99999	0	4000
	UNION CAMP CORP.	PRATTVILLE	AL	ALD00555700	10000 - 99999	0	1900
					30000 - 299997	26800	5900
						2.55%	0.68%

# Soap And Detergent Association

## TRI Database: Reported Glycol Ether Emissions - 1992

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2650	NO DATA AVAILABLE						
2651	AMERICRAFT CARTON INC.	LOWELL	MA	MAD00100599	1000 - 9999	4117	9404
					1000 - 9999	4117	9404
						0.39%	1.09%
2652	NO DATA AVAILABLE						
2653	NO DATA AVAILABLE						
2654	NO DATA AVAILABLE						
2655	J. L. CLARK	LANCASTER	PA	PAD00302532	1000 - 9999	3417	3161
	J. L. CLARK	ROCKFORD	IL	ILD005162417	1000 - 9999	3801	17319
					2000 - 19998	7218	20480
						0.69%	2.38%
2656	CHAMPION INTL.	MORRISTOWN	NJ	NJD052449212	1000 - 9999	0	21800
	CHAMPION INTL.	CLINTON	IA	IAD041389776	1000 - 9999	0	10600
	CHAMPION INTL.	ATHENS	GA	GAD06921348	1000 - 9999	0	21700
	CHAMPION INTL.	OLMSTED FALLS	OH	OHD00421315	1000 - 9999	0	18700
	CHAMPION INTL.	FORT WORTH	TX	TXD06138105	1000 - 9999	0	14400
	INTERNATIONAL PAPER	TURLOCK	CA	CAD00914717	1000 - 9999	15789	5263
	INTERNATIONAL PAPER	BASTROP	LA	LAD98062209	1000 - 9999	8250	2750
	INTERNATIONAL PAPER	KALAMAZOO	MI	MID00534592	1000 - 9999	7700	2600
	INTERNATIONAL PAPER	KANSAS CITY	KS	KSD00063950	1000 - 9999	9044	0
	INTERNATIONAL PAPER	EAST POINT	GA	GAD99127565	1000 - 9999	10875	3625
	INTERNATIONAL PAPER	FRAMINGHAM	MA	MAD00102909	1000 - 9999	11266	3755
	INTERNATIONAL PAPER	PHILADELPHIA	PA	NA	1000 - 9999	11250	3750
	JAMES RIVER PAPER CO. INC.	DARLINGTON	SC	SCD00336144	1000 - 9999	4563	9188
	JAMES RIVER PAPER CO. INC.	FORT SMITH	AR	ARD00634543	1000 - 9999	90	13000
	SWEETHEART CUP CO. INC.	SPRINGFIELD	MO	MOD00716156	1000 - 9999	759	14430

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2656					15000 - 149985	79586 7.58%	145561 16.88%
2657	F. N. BURT CO. INC.	CHEEKTOWAGA	NY	NYD00210931	1000 - 9999	1082	2974
	FIELD CONTAINER CO.	ELK GROVE VILLAGE	IL	ILD005112842	1000 - 9999	16300	0
	JAMES RIVER PAPER CO. INC.	NEWNAN	GA	GAD00391315	1000 - 9999	10000	0
	TETRA PAK INC.	SIKESTON	MO	MOD06691927	1000 - 9999	0	24021
	WALDORF CORP.	CLINTON	IA	IAD058046400	1000 - 9999	12973	0
	WALDORF CORP.	CHICAGO	IL	ILD006195853	1000 - 9999	2093	207
					6000 - 59994	42448 4.05%	27202 3.16%
2671	NO DATA AVAILABLE						
2672	NO DATA AVAILABLE						
2673	NO DATA AVAILABLE						
2674	NO DATA AVAILABLE						
2675	NO DATA AVAILABLE						
2676	NO DATA AVAILABLE						
2677	NO DATA AVAILABLE						
2678	NO DATA AVAILABLE						

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2679	NO DATA AVAILABLE						
2840	BUCKEYE INTL. INC.	MARYLAND HEIGHTS	MO	NA	10000 - 99999	250	1000
	PACE INTL. L. P.	KIRKLAND	WA	WAD98072461	10000 - 99999	250	0
	SPARTAN CHEMICAL CO. INC.	TOLEDO	OH	OHD00503672	100000000 - 499999999	250	250
					100020000 - 500199997	750	1250
						0.07%	0.14%
2841	ADCO INC.	SEDALIA	MO	MOD00712779	10000 - 99999	250	250
	AMREP INC.	SANTA ANA	CA	CAD98138664	1000 - 9999	17	0
	AMREP INC.	LANCASTER	TX	TXD98081104	10000 - 99999	344	0
	AMREP INC.	MARIETTA	GA	GAD05101042	1000 - 9999	55	0
	AMWAY CORP.	ADA	MI	MID00602679	100000 - 999999	750	3500
	ARDROX INC.	LA MIRADA	CA	CAD00825829	10000 - 99999	30	110
	BARCOLENE CO.	HOLBROOK	MA	MAV00000363	1000 - 9999	270	0
	CALGON VESTAL LABS CONVATEC	SAINT LOUIS	MO	MOD04350437	10000 - 99999	5	0
	CAMCO CHEMICAL CO. IND. PLANT	CITY OF INDUSTRY	CA	06574KY01	10000 - 99999	5	5
	CAMCO CHEMICAL CO. IND. PLANT	FLORENCE	KY	06574KY01	10000 - 99999	5	5
	CANDY & CO.	CHICAGO	IL	NA	10000 - 99999	250	0
	CELLO CORP.	HAVRE DE GRACE	MD	MDD00307396	10000 - 99999	750	5
	CHEMRON CORP.	PASO ROBLES	CA	CAD98088086	1000000 - 9999999	5	5
	CHURCH & DWIGHT CO. INC.	GREEN RIVER	WY	WYD09467072	100000 - 999999	980	75
	CHURCH & DWIGHT CO. INC.	SYRACUSE	NJ	NJD002226892	100000 - 999999	4	5
	COLGATE-PALMOLIVE	KANSAS CITY	KS	KSD00715769	100000 - 999999	5	250
	COLGATE-PALMOLIVE	CAMBRIDGE	OH	OHD98180258	100000 - 999999	220	42
	COLGATE-PALMOLIVE	BETHUNE	SC	NA	100000 - 999999	250	0
	COLGATE-PALMOLIVE	CLARKSVILLE	IN	IND990681470	100000 - 999999	2000	33000
	CONCORD CHEMICAL CO. INC.	CAMDEN	NJ	NA	10000 - 99999	30	10
	CORAL INTL. INC.	WAUKEGAN	IL	ILD002979896	10000 - 99999	5	5
	CRYSTAL INC.	LANSDALE	PA	PAD00227797	10000 - 99999	5	0
	DESOTO INC.	JOLIET	IL	1970450025G	1000 - 9999	5	0
DIAL CORP.	SAINT LOUIS	MO	MOD00629471	1000 - 9999	3	3	
DIAL CORP.	MEMPHIS	TN	TND04406651	100000 - 999999	650	399	

# Soap And Detergent Association

## TRI Database: Reported Glycol Ether Emissions - 1992

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2841	DIVERSEY CORP.	CINCINNATI	OH	OHD08185368	10000 - 99999	0	1500
	DIVERSEY CORP.	DALLAS	TX	TXD05637448	10000 - 99999	0	500
	DIVERSEY CORP.	CITY OF INDUSTRY	CA	CAD05644357	10000 - 99999	0	1000
	DORA SUPPLY CO. INC.	LARGO	FL	NA	10000 - 99999	180	0
	DOWBRANDS L. P.	MAULDIN	SC	SCD05591846	100000 - 999999	250	250
	DOWBRANDS L. P.	GREENVILLE	TX	TXD98069838	100000 - 999999	250	250
	ECOLAB INC.	GARLAND	TX	TX0055331250	10000 - 99999	250	250
	ECOLAB INC.	MC DONOUGH	GA	GAD98124386	10000 - 99999	250	250
	ECOLAB INC.	JOILET	IL	ILD64385701	1000000 - 9999999	161	114
	ECOLAB INC.	SAN JOSE	CA	CAD00917324	10000 - 99999	0	129
	ECOLAB INC.	AVENEL	NJ	NJD047500897	100000 - 999999	446	225
	ECOLAB INC.	FRANKLIN PARK	IL	ILD010596260	10000 - 99999	250	250
	ESSENTIAL IND. INC.	MERTON	WI	WID00396761	1000000 - 9999999	5	5
	FREDERICK GUMM CHEMICAL CO. INC.	GASTONIA	NC	NA	10000 - 99999	5	5
	FREEDOM TEXTILE CHEMICALS	COWPENS	SC	NA	10000 - 99999	250	0
	FULLER BRUSH CO.	GREAT BEND	KS	KSD09827016	10000 - 99999	250	0
	GO-JO INDUSTRIES INC.	CUYAHOGA FALLS	OH	OHD00416203	1000 - 9999	250	0
	H. B. FULLER CO.	TULARE	CA	CAD98141117	1000 - 9999	5	5
	H. B. FULLER CO.	COLUMBIA HEIGHTS	MN	MND07175749	1000 - 9999	5	5
	HENKEL CORP.	HOBOKEN	NJ	NJD065804065	100000 - 999999	250	750
	HUNTER ZEP	BATON ROUGE	LA	NA	1000 - 9999	32	0
	HYDRITE CHEMICAL CO.	WATERTOWN	WI	NA	10000 - 99999	4	1
	INTERCON CHEMICAL CO.	SAINT LOUIS	MO	NA	10000 - 99999	5	0
	IST AYD CORP.	ADDISON	IL	NA	10000 - 99999	5	5
	JADCO CHEMICAL LTD.	TIGARAD	OR	NA	10000 - 99999	250	0
	JAMES VARLEY & SONS INC.	SAINT LOUIS	MO	NA	10000 - 99999	250	0
	KLEEN BIGHT LABS INC.	ROCHESTER	NY	NYD00986905	10000 - 99999	5	5
	KLEEN BIGHT LABS INC.	BROCKPORT	NY	NYD00221712	10000 - 99999	56	5
	KO MFG. INC.	SPRINGFIELD	MO	NA	10000 - 99999	250	250
	LEVER BROTHERS CO.	BALTIMORE	MD	MDD00306546	100000 - 999999	1	5
	LEVER BROTHERS CO.	LOS ANGELES	CA	CAD00832011	1000 - 9999	5	250
	LEVER BROTHERS CO.	HAMMOND	IN	IND001743822	100000 - 999999	250	0
	LEVER BROTHERS CO.	PAGEDALE	MO	MOD00629097	10000 - 99999	0	250
	LUBAR CHEMICAL CO.	KANSAS CITY	MO	NA	1000 - 9999	250	0
	MANUFACTURERS SOAP & CHEMICAL CO. INC.	CLEVELAND	TN	TND99065263	10000 - 99999	250	250
	MIDLAND CHICAGO CORP.	ALSIP	IL	ILD00609+967	10000 - 99999	193	263
	MISCO INTL. INC.	WHEELING	IL	NA	10000 - 99999	5	0

# Soap And Detergent Association

## TRI Database: Reported Glycol Ether Emissions - 1992

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2841	NATIONAL CHEMICAL LABS OF PA INC.	PHILADELPHIA	PA	NA	100000 - 999999	1300	0
	NORMAN FOX & CO.	VERNON	CA	NA	10000 - 99999	0	750
	OAKITE PRODS. INC.	ROMULUS	MI	MID00531932	10000 - 99999	250	250
	OIL CHEM INC.	FLINT	MI	MI0081603572	10000 - 99999	250	0
	OLD TYME PRODUCTS INC.	CARSON	CA	CAD98196853	10000 - 99999	1	0
	ORTEC INC.	EASLEY	SC	SCD98147971	1000 - 9999	250	0
	PANTHER IND. INC.	FORT WORTH	TX	TXD00802817	10000 - 99999	67	0
	PARK CORP.	BARRINGTON	IL	IL0314085005	10000 - 99999	250	250
	PCA EAST INC.	PISCATAWAY	NJ	NJD980785455	10000 - 99999	250	250
	PECKS PRODUCTS CO.	DALLAS	TX	NA	1000 - 9999	250	0
	PECKS PRODUCTS CO.	JOHNSTOWN	NY	NA	10000 - 99999	250	0
	PECKS PRODUCTS CO.	PLANT CITY	FL	NA	1000 - 9999	250	0
	PIEDMONT LABS INC.	GAINSVILLE	GA	GAD13132754	10000 - 99999	750	0
	PROCTER & GAMBLE MFG. CO.	BALTIMORE	MD	MDD00307441	1000000 - 9999999	250	750
	PROCTER & GAMBLE MFG. CO.	SACRAMENTO	CA	CAD00918945	100000 - 999999	2	0
	PROCTER & GAMBLE MFG. CO.	AUGUSTA	GA	GAD00327880	100000 - 999999	0	415
	PROCTER & GAMBLE MFG. CO.	PINEVILLE	LA	LAD00077850	100000 - 999999	0	65
	PROCTER & GAMBLE MFG. CO.	CINCINNATI	OH	OHD09281836	100000 - 9999999	0	160
	PROCTER & GAMBLE MFG. CO.	DALLAS	TX	TXD00732716	10000 - 99999	0	9
	PROCTER & GAMBLE MFG. CO.	LIMA	OH	OH004731010	1000000 - 9999999	0	170
	PURITY INC.	MIAMI	FL	NA	1000 - 9999	250	0
	RHONE-POULENC INC.	DAYTON	NJ	NJ002149409	10000 - 99999	1	2
	S & S CO. OF GEORGIA INC.	ALBANY	GA	NA	10000 - 99999	5	5
	SEQUA CHEMICALS INC.	CHESTER	SC	SCD00316466	1000 - 9999	1	18
	SOFTSOAP ENTS. INC.	CHASKA	MN	NA	10000 - 99999	5	0
	SURTEC INC.	HAYWARD	CA	CAD07394980	1000 - 9999	250	0
	T & L SPECIALTY CO.	TUPELO	MS	NA	10000 - 99999	5	0
	TAYLOR LABS INC.	CHATTANOOGA	TN	NA	10000 - 99999	372	0
	TEXO CORP.	SAND SPRINGS	OK	OKD10727606	10000 - 99999	250	250
	THEOCHEM LABS INC.	TAMPA	FL	NA	1000 - 9999	250	250
	TWI-LAQ UBD. INC.	BROOKLYN	NY	NA	10000 - 99999	250	250
	U. S. CHEMICAL CO.	STOCKTON	CA	CAD00911523	10000 - 99999	29	1
	U. S. POLYCHEMICAL	SPRING VALLEY	NY	NYD00201607	1000 - 9999	42	77
	VERPAS PRODS. INC.	CAROLINA	PR	NA	1000 - 9999	5	0
	WARSAW CHEMICAL CO. INC.	WARSAW	IN	IND005430244	10000 - 99999	250	250
	ZEP MANUFACTURING CO.	SANTA CLARA	CA	CAD07718891	100000 - 999999	13	0
	ZEP MANUFACTURING CO.	ATLANTA	GA	GAD00326719	100000 - 999999	400	0

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2841	ZEP MANUFACTURING CO.	DE SOTO	TX	TXD98191383	10000 - 99999	2	0
					7660000 - 85599900	18511	48613
						1.76%	5.64%
2842	1ST AYD CORP.	ADDISON	IL	NA	10000 - 99999	5	5
	ABC COMPOUNDING CO. INC.	MORROW	GA	GAD98124523	10000 - 99999	5	250
	ALEX C. FERGUSSON INC.	FRAZER	PA	PAD00226845	10000 - 99999	5	250
	ANALAB INC.	NORWOOD	MA	NA	100 - 999	15	0
	APTER IND. INC.	WHITE OAK	PA	NA	1000 - 9999	250	0
	ARDROX INC.	LAKE BLUFF	IL	ILD005976865	1000 - 9999	250	250
	ASSOCIATED CHEMISTS INC.	PORTLAND	OR	ORD00902862	1000 - 9999	250	0
	ATCO INTL.	MARIETTA	GA	NA	1000 - 9999	5	0
	AUTO WAX CO INC.	DALLAS	TX	NA	1000 - 9999	250	250
	B & B TRITECH INC.	HIALEAH	FL	FLD004574190	1000 - 9999	250	0
	BALL IND.	EL SEGUNDO	CA	NA	100 - 999	250	0
	BARRIER IND. INC.	PORT JERVIS	NY	NA	1000 - 9999	0	5
	BRULIN CORP.	INDIANAPOLIS	IN	IND006414692	10000 - 99999	250	250
	BULLEN COS.	FLOCROFT	PA	NA	10000 - 99999	250	250
	BULLEN MIDWEST INC.	CHICAGO	IL	NA	10000 - 99999	250	0
	BUTCHER CO.	MARLBOROUGH	MA	NA	100000 - 999999	250	250
	C & H CHEMICAL INC.	SAINT PAUL	MN	MND00615890	0 - 0	250	5
	CANBERRA CORP.	TOLEDO	OH	NA	10000 - 99999	750	5
	CAR BRITE INC.	INDIANAPOLIS	IN	IND082295197	10000 - 99999	1	8
	CENTRAL SOLUTIONS INC.	KANSAS CITY	KS	NA	1000 - 9999	250	0
	CHEMCO CO.	LAWRENCE	MA	NA	1000 - 9999	250	0
	CHEMICAL PACKAGING CORP. OF AMERICA INC.	MILWAUKEE	WI	NA	10000 - 99999	250	0
	CHEMIFAX	SANTA FE SPRINGS	CA	CAL93081614	10000 - 99999	750	0
	CHEMIX CORP.	BEREA	OH	OHD05837458	10000 - 99999	5	0
	CHEMSPEC INC.	BALTIMORE	MD	NA	10000 - 99999	250	0
	CLOROX CO.	JERSEY CITY	NJ	NJD002406171	10000 - 99999	1	0
	CLOROX CO.	FOREST PARK	GA	GAD05103940	10000 - 99999	0	4
	CLOROX CO.	FAIRFIELD	CA	CAT00061698	10000 - 99999	210	0
	CLOROX CO.	PEARL	MS	MSD04122638	10000 - 99999	15	15
	CLOROX CO.	VERNON	CA	CAD00832954	10000 - 99999	0	1
	CONSOLIDATED CHEMICAL WORKS LTD.	CHICAGO	IL	NA	1000 - 9999	250	0
	D. W. DAVIES & CO. INC.	RACINE	WI	NA	10000 - 99999	5	250
	DAYCON PRODUCTS CO. INC.	LANHAM	MD	NA	10000 - 99999	250	0

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2842	DICKLER CHEMICAL LABS. INC.	PHILADELPHIA	PA	NA	10000 - 99999	438	993
	DIVERSEY CORP.	SANTA FE SPRINGS	CA	CAD04645574	10000 - 99999	0	5
	DIVERSEY CORP.	TUCKER	GA	GAD05727027	10000 - 99999	0	250
	DIVERSEY CORP.	EAST STROUDSBURG	PA	PAD00073697	10000 - 99999	0	250
	DIVERSEY CORP.	WYANDOTTE	MI	MID00072167	10000 - 99999	0	250
	DOWBRANDS L. P.	URBANA	OH	OHD00185150	100000 - 999999	5	2
	DYMON INC.	KANSAS CITY	KS	KSD06795299	10000 - 99999	60	110
	DYNASURF CHEMICAL CORP.	BALTIMORE	MD	NA	100000 - 999999	750	0
	EMULSION SYS. OF ILLINOIS INC.	LEMONT	IL	NA	10000 - 99999	250	250
	ENFORCER PRODUCTS INC.	EMERSON	GA	GAD05986524	1000 - 9999	250	0
	EXCELDA MFG.	BRIGHTON	MI	MIG00002699	1000 - 9999	250	0
	FINE ORGANICS CORP.	LODI	NJ	NJD010963924	10000 - 99999	80	5
	FLO-KEM PRODUCTS	COMPTON	CA	CAD08488852	10000 - 99999	20	2
	FORMULA CORP.	SEATTLE	WA	NA	1000 - 9999	250	0
	HILL MFG. CO. INC.	ATLANTA	GA	NA	10000 - 99999	0	5
	HUNTINGTON LABS INC.	HUNTINGTON	IN	NA	10000 - 99999	250	5
	I. SCHNEID INC.	ATLANTA	GA	GAD00326555	100000 - 999999	250	0
	KNIGHT OIL CORP.	JOHNSTOWN	NY	NYD01278751	10000 - 99999	24	1
	L & F PRODUCTS GROUP	TOLEDO	OH	OHD00970253	10000 - 99999	120	1100
	L & F PRODUCTS GROUP	BELLE MEAD	NJ	NJD068709153	100000 - 999999	1022	6224
	L & F PRODUCTS GROUP	LINCOLN	IL	ILD044218055	10000 - 99999	5	5
	MALCO PRODUCTS INC.	BARBERTON	OH	OHD00446787	10000 - 99999	250	250
	MASURY COLUMBIA CO.	CHICAGO	IL	ILD072362536	10000 - 99999	5	5
	MIDCO PRODS. CO. INC.	MARYLAND HEIGHTS	MO	MOD07988874	1000 - 9999	250	0
	MINUTEMAN INTL.	SHOREVIEW	MN	MND98570227	10000 - 99999	250	5
	MISCO INTL. INC.	READING	PA	PAD00233689	10000 - 99999	250	250
	MISCO PRODUCTS CORP.	READING	PA	PAD00233689	10000 - 99999	250	250
	MT. HOOD CHEMICAL CORP.	PORTLAND	OR	NA	10000 - 99999	21	0
	NATIONAL SANITARY SUPPLY CO.	LOS ANGELES	CA	NA	10000 - 99999	5	250
	NCH CORP.	MONMOUTH JUNCTION	NJ	NJD080955313	10000 - 99999	250	
	NCH CORP.	SUNNYVALE	CA	CAD00008005	10000 - 99999	250	0
	NCH CORP.	IRVING	TX	TXD00044978	10000 - 99999	1100	250
	NCH CORP.	INDIANAPOLIS	IN	IND000198473	10000 - 99999	750	250
	NYCO PRODUCTS CO.	CHICAGO	IL	ILD005150933	10000 - 99999	250	0
	OVERDALE CORP.	ALSIP	IL	ILD068602895	1000 - 9999	175	0
	PENETONE CORP.	TENAFLY	NJ	NJD001503243	100000 - 999999	250	250
	PENN CHAMP INC.	EAST BUTLER	PA	PAD05856974	10000 - 99999	2	2

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air	
2842	PERMA INC.	BEDFORD	MA	NA	10000 - 99999	12	3	
	PIONEER/ECLIPSE CORP.	SPARTA	NC	NCD98618613	100000 - 999999	176	0	
	PRESCOTT INC. CHEMICALS	CHARLOTTE	NC	NA	1000 - 9999	250	0	
	PROFESSIONAL CHEMICALS CORP.	CHANDLER	AZ	AZD98348179	1000 - 9999	41	0	
	R. R. STREET & CO. INC.	CHICAGO	IL	ILD054516273	10000 - 99999	5	250	
	ROCHESTER MIDLAND	MONTGOMERY	IL	ILD002223162	10000 - 99999	250	5	
	ROCHESTER MIDLAND	ROCHESTER	NY	NYD00220704	10000 - 99999	250	0	
	S. C. JOHNSON & SON INC.	STURTEVANT	WI	WID00609142	100000 - 999999	760	11300	
	SANIVAC INC.	SAN ANTONIO	TX	NA	1000 - 9999	5	0	
	SELIG CHEMICAL IND.	ATLANTA	GA	GAD00022209	10000 - 999999	250	0	
	SERVICEMASTER CO.	LANCASTER	PA	PAD09625460	10000 - 99999	500	0	
	SERVICEMASTER CO.	CAIRO	IL	ILD041882671	10000 - 99999	250	0	
	SHIELD PACKAGING CO. INC.	DUDLEY	MA	MAD98057897	10000 - 99999	6	0	
	SOLVOX MFG. CO.	MILWAUKEE	WI	NA	10000 - 99999	0	5	
	STANHOME INC.	EASTHAMPTON	MA	MAD00111685	10000 - 99999	250	750	
	STATE CHEMICAL MFG. INC.	CLEVELAND	OH	OHD00452098	10000 - 99999	250	250	
	STATE CHEMICAL MFG. INC.	CLIFFWOOD BEACH	NJ	NA	10000 - 99999	250	0	
	TEK CHEMICAL INC.	PORTLAND	OR	NA	100 - 999	250	0	
	TRANS-MATE PRODUCTS INC.	NORTH BILLERICA	MA	NA	10000 - 99999	250	0	
	TROY CHEMICAL IND. INC.	BURTON	OH	NA	10000 - 99999	8	22	
	TURCO PUREX INDL. CORP.	MARION	OH	OHD00071717	10000 - 99999	210	50	
	TURTLE WAX INC.	BEDFORD PARK	IL	ILD005138771	10000 - 99999	5	0	
	WARCO LABS. SO. INC.	HARBOR CITY	CA	CAD98169411	10000 - 99999	250	0	
	WEBCO CHEMICAL CORP.	DUDLEY	MA	MAD00112766	10000 - 99999	5	5	
						1458300 - 15482907	18837	25907
							1.80%	3.00%
2843	ARROW ENG. INC.	DALTON	GA	NA	10000 - 99999	250	0	
	BASF CORP.	SPARTANBURG	SC	SCD07799063	100000 - 999999	2	9	
	BOEHME FILATEX INC.	REIDSVILLE	NC	NCO45057155	10000 - 99999	46	31	
	BURLINGTON CHEMICAL CO. INC.	BURLINGTON	NC	NCD98213749	10000 - 99999	250	0	
	CATAWBA-CHARLAB INC.	CHARLOTTE	NC	NA	10000 - 99999	5	0	
	CEDAR CONCEPTS CORP.	CHICAGO	IL	ILO982075160	10000 - 99999	5	5	
	CHEM-TEX LABS. INC.	CHARLOTTE	NC	NA	10000 - 99999	51	0	
	HENKEL CORP.	CEDARTOWN	GA	GAD99074109	10000 - 99999	1	1	
	HENKEL CORP.	MAULDIN	SC	SCD05874589	100000 - 999999	100	35	
	HICKSON DANCHEM CORP.	DANVILLE	VA	VAD98817068	10000 - 99999	0	9	

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2843	HIGH POINT CHEMICAL CORP.	HIGH POINT	NC	NAD98060059	100000 - 999999	250	250
	HOLLY OAK CHEMICAL INC.	FOUNTAIN INN	SC	NA	100000 - 999999	250	0
	LEATEX CHEMICAL CO.	PHILADELPHIA	PA	NA	1000 - 9999	250	250
	LENMAR CHEMICAL CORP.	DALTON	GA	NA	10000 - 99999	20	0
	PILOT CHEMICAL CO.	MIDDLETOWN	OH	NA	10000 - 99999	0	5
	PILOT LABS INC.	AVENEL	NJ	NJD078270154	10000 - 99999	14	0
	PPG INDUSTRIES INC.	FOLCROFT	PA	PAD00231329	10000 - 99999	22	0
	PPG SPECIALTY CHEMICALS	GURNEE	IL	ILD055413371	100000 - 999999	158	750
	RHONE-POULENC INC.	BALTIMORE	MD	MDD00306347	100000 - 999999	5	5
	SEDGEFIELD SPECIALTIES	GREENSBORO	NC	NCD09615869	10000 - 99999	5	0
	SHELL CHEMICAL CO.	RESERVE	LA	NA	100000 - 999999	0	991
	SHEREX CHEMICAL - WITCO CORP.	JANESVILLE	WI	WID09436145	100000 - 999999	250	34
	SPECIALITY INDL. PRODS. INC.	SPARTANBURG	SC	SCD06932474	10000 - 99999	250	5
	STEPAN CO.	ANAHEIM	CA	CAD04659016	100000 - 999999	250	250
	STEPAN CO.	WINDER	GA	GAD08608607	100000 - 999999	94	214
	STEPAN CO.	FIELDSBORO	NJ	NJD041762840	100000 - 999999	7	927
	STEPAN CO.	ELWOOD	IL	ILD054351770	100000 - 999999	260	70
	STOCKHAUSEN INC.	GREENSBORO	NC	NCD08990661	10000 - 99999	14	52
	WESTVACO CORP.	MULBERRY	FL	FLD045196136	10000 - 99999	158	15
	WITCO CORP.	HOUSTON	TX	TXD06507882	10000 - 99999	179	0
WITCO CORP.	BLUE ISLAND	IL	ILD085343887	100000 - 999999	992	24345	
YORKSHIRE PAT-CHEM INC.	GREENVILLE	SC	SCD05681323	10000 - 99999	5	0	
					1481000 - 14809968	4143	28253
						0.39%	3.28%
2844	CCL CUSTOM MFG. INC.	CUMBERLAND	RI	RID055176283	100000 - 999999	5	5
	CCL CUSTOM MFG. INC.	DANVILLE	IL	ILD005141726	100000 - 999999	72	76
	COSMAIR INC.	CLARK	NJ	NJT350010260	10000 - 99999	0	750
	CRODA INC.	MILL HALL	PA	PAD99075222	100000 - 999999	15	0
	E. D. SMITH-GEM INC.	BYHALIA	MS	MSD00703247	1000 - 9999	250	250
	HELENE CURTIS IND. INC.	CHICAGO	IL	ILD005145701	10000 - 99999	5	0
	JOICO LABS INC.	CITY OF INDUSTRY	CA	CAL00007453	10000 - 99999	1311	0
	MENNEN CO.	MORRISTOWN	NJ	NJD002146660	100000 - 999999	250	0
	SBS PRODUCTS INC.	SAGINAW	MI	MID08747857	1000 - 9999	5	0
						432000 - 4319991	1913
						0.18%	0.13%
2850	ACCURATE COATINGS & DISPERSIONS INC.	SOUTH HOLLAND	IL	ILD010601110	1000 - 9999	607	69

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2850	ENVIRONMENTAL COATINGS INC.	CALEDONIA	MI	MID00641070	10000 - 99999	363	122
					11000 - 109998	970	191
						0.09%	0.02%
2851	ACE HARDWARE CORP.	MATTESON	IL	ILD113090336	10000 - 99999	12	14
	AEXCEL CORP.	MENTOR	OH	NA	10000 - 99999	0	2262
	AKZO COATINGS INC.	ORANGE	CA	CAD98247051	1000 - 9999	250	0
	AKZO COATINGS INC.	PONTIAC	MI	MID00026520	10000 - 99999	1600	6300
	AKZO COATINGS INC.	ORANGE	CA	CAD98247051	1000 - 9999	750	250
	AKZO COATINGS INC.	HIGH POINT	NC	NCD00639056	100000 - 999999	1775	250
	AKZO COATINGS INC.	ORANGE	CA	CAD98247051	10000 - 99999	6000	
	AKZO COATINGS INC.	ZION	IL	ILD006390553	10000 - 99999	4659	8300
	AKZO COATINGS INC.	PONTIAC	MI	MID00064702	1000 - 9999	750	5
	AKZO COATINGS INC.	SOMERSET	NJ	NJD002142388	10000 - 99999	487	4
	AKZO COATINGS INC.	DETROIT	MI	MID00652338	100000 - 999999	5310	7
	AKZO NOBEL COATINGS INC.	COLUMBUS	OH	OHD00428889	100000 - 999999	57300	250
	AKZO NOBEL COATINGS INC.	SALEM	OR	ORD00941260	10000 - 99999	8500	250
	AKZO NOBEL COATINGS INC.	CLINTON	MS	MAD04116574	10000 - 99999	2070	10
	AKZO NOBEL COATINGS INC.	MATTESON	IL	ILD005245584	10000 - 99999	250	250
	AKZO NOBEL COATINGS INC.	BIRMINGHAM	AL	ALD00401134	100000 - 999999	9783	8
	AKZO NOBEL COATINGS INC.	ROANOKE	VA	VAD00001982	10000 - 99999	5290	0
	AMERICAN COATINGS INC.	TOMBALL	TX	TXP490192684	10000 - 99999	22	1680
	ANCHOR PAINT MFG. CO. INC.	TULSA	OK	OKD00722188	10000 - 99999	250	250
	B. M. & CO.	JACKSONVILLE	FL	FLD004061099	10000 - 99999	4	0
	B. M. & CO.	PELL CITY	AL	ALD98147279	1000 - 9999	3	0
	B. M. & CO.	MELROSE PARK	IL	ILD005457155	10000 - 99999	217	15
	B. M. & CO.	CLEVELAND	OH	OHD00421992	10000 - 99999	11	0
	BARKER CO.	KINGSBURY	IN	NA	1000 - 9999	5	0
	BARRETT VARNISH CO.	CICERO	IL	ILO094291648	1000 - 9999	700	100
	BASF CORP.	DETROIT	MI	MID00713874	10000 - 99999	3700	250
	BASF CORP.	MORGANTON	NC	NCD04999778	10000 - 99999	1650	250
	BASF CORP.	GREENVILLE	OH	OHD07679688	100000 - 999999	2900	750
	BASF CORP.	GRAND RAPIDS	MI	MID00186859	10000 - 99999	250	5
	BASF CORP.	ANAHEIM	CA	CAD00186865	100000 - 999999	140	6
	BEAVER PAINT CO.	GIRARD	PA	PAD00502883	10000 - 99999	750	250
BENJAMIN MOORE & CO.	SAINT LOUIS	MO	MOD00629025	1000 - 9999	7	3	
BENJAMIN MOORE & CO.	CITY OF COMMERCE	CA	CAD00831493	1000 - 9999	49	0	

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	BENJAMIN MOORE & CO.	JOHNSTOWN	NY	NYD98689904	1000 - 9999	8	0
	BENJAMIN MOORE & CO.	COLONIAL HEIGHTS	VA	VAD04219777	10000 - 99999	1	0
	BENJAMIN MOORE & CO.	MILFORD	MA	MAD00106591	10000 - 99999	4	0
	BM & CO.	NEWARK	NJ	NJD002456242	100800 - 999999	108	43
	BONAKEMI USA INC.	AURORA	CO	NA	10000 - 99999	250	0
	BRUNING PAINT CO.	BALTIMORE	MD	MDD09543094	10000 - 99999	200	0
	BYK-CHEMIE USA	WALLINGFORD	CT	CTD05510340	100000 - 999999	6	17
	C. E. BRADLEY LABORATORIES INC.	BRATTLEBORO	VT	VTD00108652	1000 - 9999	950	0
	CARDINAL INDL. FINISHES INC.	PHOENIX	AZ	AZD98158286	1000 - 9999	97	5
	CARDINAL INDL. FINISHES INC.	SAN JOSE	CA	CAD10277175	1000 - 9999	28	10
	CARDINAL INDL. FINISHES INC.	SOUTH EL MONTE	CA	NA	10000 - 99999	361	108
	CAROLINA SOLVENTS INC.	HICKORY	NC	NCD04728559	10000 - 99999	250	750
	CENTERLINE IND. INC.	SAINT LOUIS	MO	NA	10000 - 99999	2195	0
	CERAM-TRAZ CORP.	OSSEO	MN	MND04670744	10000 - 99999	250	250
	CHEMICAL COATINGS INC.	HUDSON	NC	NCD07904714	10000 - 99999	250	250
	COATINGS & CHEMICALS CORP.	CHICAGO	IL	ILD005124672	1000 - 9999	376	1502
	COLUMBIA PAINT CO.	HUNNINGTON	WV	WVD00500734	10000 - 99999	250	0
	CON-LUX COATINGS INC.	EDISON	NJ	NJ002157030	10000 - 99999	250	750
	CONTINENTAL PRODS. CO.	EUCLID	OH	OHD00418176	1000 - 9999	6595	2756
	COOK COMPOSITES & POLYMERS CO.	NORTH KANSAS CITY	MO	MOD08678737	1000 - 9999	750	250
	COOK PAINT & VARNISH CO.	CLEVELAND	OH	OHD04937215	10000 - 99999	8200	250
	CORONADO PAINT CO.	EDGEWATER	FL	FLD082400441	10000 - 99999	250	0
	COURTAULDS AEROSPACE	BERKELEY	CA	CAD00911086	10000 - 99999	36	357
	COURTAULDS COATINGS INC.	HOUSTON	TX	TXD00807146	100 - 999	96	160
	COURTAULDS COATINGS INC.	LOUISVILLE	KY	KYD99073706	1000 - 9999	750	750
	COURTAULDS COATINGS INC.	LOUISVILLE	KY	KYD00638225	1000 - 9999	250	250
	CP INC.	CONNERSVILLE	IN	IND006042857	1000 - 9999	250	0
	CROWE INDL. COATINGS	LAWRENCEVILLE	GA	GAD03787980	1000 - 9999	251	0
	CUSTOM CHEMICALS CORP.	ELMWOOD PARK	NJ	NJD93846301	10000 - 99999	250	750
	DAMPNEY CO. INC.	EVERETT	MA	MAD00100214	1000 - 9999	250	0
	DANIEL PRODS. CO. INC.	JERSEY CITY	NJ	NJD001340686	10000 - 99999	3000	250
	DAVIES IMPERIAL COATINGS INC.	HAMMOND	IN	IND047023197	10000 - 99999	750	250
	DELTA INDL. COATINGS INC.	ARLINGTON	TN	TND08693515	1000 - 9999	480	1
	DELTA LABS	OCALA	FL	FLD004069183	10000 - 99999	250	0
	DELTA LABS	HIALEAH	FL	FLD058556457	1000 - 9999	3	0
	DEVOE & RAYNOLDS CO.	LOUISVILLE	KY	KYD98073005	1000 - 9999	639	0
	DEVOE & RAYNOLDS CO.	HOUSTON	TX	TXD08085793	10000 - 99999	1596	0

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	DEVOE COATINGS CO.	RIVERSIDE	CA	CAD09757407	1000 - 9999	2134	750
	DEXTER CORP.	HAYWARD	CA	CAD04184129	10000 - 99999	2200	2200
	DEXTER CORP.	WAUKEGAN	IL	ILD004531927	100000 - 999999	7400	7400
	DEXTER CORP.	BIRMINGHAM	AL	ALD07896497	10000 - 99999	30000	2900
	DEXTER CROWN METRO AEROSPACE	GREENVILLE	SC	NA	10000 - 99999	1600	0
	DU PONT	TOLEDO	OH	OHD00504184	10000 - 99999	0	7120
	DU PONT	FLINT	MI	MID00551206	10000 - 99999	1558	3334
	DU PONT	MT CLEMENS	MI	MID00535882	100000 - 999999	2696	35626
	DU PONT	AVON	OH	OHD98697789	1000 - 9999	0	380
	DU PONT	PARLIN	NJ	NJD002444024	100000 - 999999	1479	1063
	DU PONT	PHILADELPHIA	PA	PAD00231188	10000 - 99999	0	370
	DU PONT	FORT MADISON	IA	IAD005272398	100000 - 999999	769	2329
	DU PONT	FRONT ROYAL	VA	VAD98055453	10000 - 99999	4	654
	DUNN-EDWARDS CORP.	LOS ANGELES	CA	CAD00823664	10000 - 99999	85	0
	DUR-A-FLEX INC.	EAST HARTFORD	CT	NA	1000 - 9999	250	0
	DURON INC.	BELTSVILLE	MD	MDD00325516	1000 - 9999	422	0
	DURON INC.	ATLANTA	GA	GAD98123447	1000 - 9999	267	0
	DYCO PAINTS INC.	CLEARWATER	FL	FLD041495121	1000 - 9999	750	5
	DYNATRON/BONDO CORP.	ATLANTA	GA	GAD98126921	1000 - 9999	250	250
	EGYPTIAN LACQUER MFG. CO.	LAFAYETTE	IN	IND002178291	10000 - 99999	2056	2056
	ELROY TURPENTINE CO.	SWAINSBORO	GA	NA	1000 - 9999	2	9
	ETNA PRODS. INC.	CHAGRIN FALLS	OH	OHD04422403	10000 - 99999	250	2500
	FEDERATED PAINT MFG. CO. INC.	CHICAGO	IL	ILD021293717	10000 - 99999	250	0
	FINISHES UNLIMITED INC.	SUGAR GROVE	IL	ILD051928463	1000 - 9999	625	626
	FORREST PAINT CO.	EUGENE	OR	ORD06342730	1000 - 9999	595	2111
	FRAZEE IND.	SAN DIEGO	CA	CAD04433115	1000 - 9999	750	0
	FROST PAINT & OIL CORP.	MINNEAPOLIS	MN	MND00625165	10000 - 99999	966	107
	FULLER-OBRIEN PAINTS	SOUTH SAN FRANCISCO	CA	CAD00513045	100000 - 999999	3391	235
	FULLER-OBRIEN PAINTS	SOUTH BEND	IN	IND092039759	10000 - 99999	424	64
	G & W ENTS. DBA TRINITY COATINGS CO.	FORT WORTH	TX	TXD06836921	10000 - 99999	730	0
	GAGE PRODUCTS CO.	FERNDAL	MI	MID00533880	10000 - 99999	5	17
	GEMINI COATINGS INC.	EL RENO	OK	OKD00720712	10000 - 99999	366	0
	GLIDDEN CO.	HURON	OH	OHD00294629	1000000 - 9999999	17000	7000
	GLIDDEN CO.	OAKWOOD	GA	GAD00062298	10000 - 99999	0	760
	GLIDDEN CO.	CARROLLTON	TX	TXD05085950	10000 - 99999	430	0
	GLIDDEN CO.	ATLANTA	GA	GAD04690142	10000 - 99999	250	1
	GLIDDEN CO.	COLUMBUS	GA	GAD00061324	100000 - 999999	0	14100

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	GLIDDEN CO.	SAN FRANCISCO	CA	CAD08917660	100000 - 999999	4600	260
	GLIDDEN CO.	READING	PA	PAD07144542	10000 - 99999	950	7
	GORDON BARTELS CO.	ROCKFORD	IL	ILD005171004	10000 - 99999	2100	2100
	GUARDSMAN PRODUCTS INC.	SEATTLE	WA	WAD01242538	10000 - 99999	100	11
	GUARDSMAN PRODUCTS INC.	GRAND RAPIDS	MI	MID00601943	10000 - 99999	230	16
	GUARDSMAN PRODUCTS INC.	HIGH POINT	NC	NCD05349122	10000 - 99999	140	13
	GUARDSMAN PRODUCTS INC.	ROCKY HILL	CT	CTD00453191	10000 - 99999	120	11
	GUARDSMAN PRODUCTS INC.	SOUTH GATE	CA	CAD00009630	10000 - 99999	69	11
	GUARDSMAN PRODUCTS INC.	LITTLE ROCK	AR	ARD05963465	10000 - 99999	82	11
	HARRISON PAINT CORP.	CANTON	OH	OHD00446989	10000 - 99999	390	380
	HENKEL CORP.	OAK CREEK	WI	WID06686706	10000 - 99999	250	250
	HENTZEN COATINGS INC.	MILWAUKEE	WI	WID02339415	10000 - 99999	1039	1559
	HOFFER COATINGS	WAUSAU	WI	WID00794789	10000 - 99999	0	1277
	HULS AMERICA INC.	LOCKLAND	OH	OHD04160472	100000 - 999999	43	0
	INDURALL COATINGS INC.	BIRMINGHAM	AL	ALD00401012	1000 - 9999	154	10
	INDUSTRIAL CHEMICALS CORP.	ARVADA	CO	NA	10000 - 99999	2	0
	INDUSTRIAL FINISHING PRODS. INC.	BROOKLYN	NY	NA	1000 - 9999	5	5
	IOWA PAINT MFG. CO. INC.	DES MOINES	IA	IAT200010098	1000 - 9999	5	190
	IVC INDL. COATINGS INC.	INDIANAPOLIS	IN	IND006421820	10000 - 99999	503	0
	JAMESTOWN PAINT CO.	JAMESTOWN	PA	PAD00432378	10000 - 99999	2000	250
	JOHN DEERE	HORICON	WI	WID00610254	10000 - 99999	6800	27000
	JOHN DEERE HORICON WORKS	HORICON	WI	WID00610254	10000 - 99999	6800	27000
	JONES-BLAIR CO.	CHATTANOOGA	TN	TND00493418	10000 - 99999	1700	250
	JONES-BLAIR CO.	DALLAS	TX	TXD00732736	10000 - 99999	250	750
	K. J. QUINN & CO. INC.	SEABROOK	NH	NHD04872246	1000 - 9999	5	5
	KALCOR COATINGS CO.	WILLOUGHBY	OH	OHD00422088	1000 - 9999	750	0
	KELLEY TECHNICAL COATINGS INC.	LOUISVILLE	KY	KYD00636752	10000 - 99999	2782	5
	KELLY-MOORE PAINT CO. INC.	SAN CARLOS	CA	CAD00912530	10000 - 99999	250	5
	KOP-COAT INC.	VERNON	CA	CAD00493779	1000 - 9999	988	0
	LENMAR INC.	BALTIMORE	MD	MDD00306327	1000 - 9999	750	250
	LILLY IND.	INDIANAPOLIS	IN	IND006040117	100000 - 999999	29876	9
	LILLY IND.	MONTEBELLO	CA	CAD00833536	10000 - 99999	1300	0
	LILLY IND.	MEMPHIS	TN	TND04217227	1000 - 9999	420	5
	LILLY IND.	HIGH POINT	NC	NCD00323203	10000 - 99999	9759	9
	LILLY IND.	JAMESTOWN	NY	NYD05505015	10000 - 99999	2756	5
	LILLY IND.	INDIANAPOLIS	IN	IND006037543	10000 - 99999	1223	0
	LILLY IND.	TAMPA	FL	FLA002353308	10000 - 99999	3825	59

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	LILLY IND.	PAULSBORO	NJ	NJD067362087	10000 - 99999	346	24
	LILLY IND.	TEMPLETON	MA	MAD00144015	10000 - 99999	750	250
	LILLY IND.	DOTHAN	AL	ALD05098339	10000 - 99999	1039	5
	MAHONING PAINT CORP.	YOUNGSTOWN	OH	OHD00416784	10000 - 99999	250	0
	MAN-GILL CHEMICAL CO.	BEDFORD	OH	OHD00417916	10000 - 99999	5	0
	MARCUS PAINT CO.	LOUISVILLE	KY	KYD00638320	10000 - 99999	2000	5
	MARCUS PAINT CO.	NASHVILLE	TN	TND04700701	1000 - 9999	1500	5
	MAUTZ PAINT CO.	MADISON	WI	WID00610593	1000 - 9999	250	0
	MOBILE PAINT MFG. CO.	THEODORE	AL	ALD00816311	10000 - 99999	186	0
	MOLINE PAINT MFG. CO.	MOLINE	IL	ILD005265749	10000 - 99999	1300	0
	MOLINE PAINT MFG. CO.	TULSA	OK	NA	1000 - 9999	52	208
	MONARCH PAINT CO.	HOUSTON	TX	TXD02662791	1000 - 9999	250	250
	MORTON INTL. INC.	DECATUR	AL	ALD05336089	100000 - 999999	26000	0
	MORTON INTL. INC.	LANSING	IL	NA	10000 - 99999	16700	15000
	MORTON INTL. INC.	ORRVILLE	OH	OHD98068397	10000 - 99999	5891	5891
	MORTON INTL. INC.	NORTH BRUNSWICK	NJ	NJD091394437	10000 - 99999	4600	250
	MORTON INTL. INC.	CHICOPEE	MA	MAD08745261	1000 - 9999	250	2100
	MORTON INTL. INC.	COLTON	CA	CAD04433199	100000 - 999999	6517	0
	MORTON INTL. INC.	BATAVIA	IL	ILD095309647	10000 - 99999	3225	3225
	NATIONAL COATINGS INC.	GALESBURG	IL	ILD021164983	10000 - 99999	11807	
	NORTHERN COATINGS & CHEMICAL CO. INC.	MENOMINEE	MI	MID06545316	1000 - 9999	5	0
	NORTON & SONS INC.	BAYONNE	NJ	NA	1000 - 9999	25	0
	P. D. GEORGE CO.	SAINT LOUIS	MO	MOD00627473	10000 - 99999	250	250
	PENN COLOR CO.	FLEMINGTON	NJ	NA	1000 - 9999	5	250
	PERRY & DERRICK CO.	CINCINNATI	OH	OHD00424646	10000 - 99999	250	5
	PFI INC.	SANTA FE SPRINGS	CA	CAD00839275	1000 - 9999	250	0
	PIERCE & STEVENS CORP.	BUFFALO	NY	NYD00210862	10000 - 99999	250	250
	PIONEER PAINT PRODUCTS INC.	MELROSE PARK	IL	ILD005258074	10000 - 99999	750	0
	PITTSBURGH ARCHITECTURAL FINISHES	CHESWOLD	DE	DED06007429	10000 - 99999	122	82
	PLASTI-KOTE CO. INC.	MEDINA	OH	NA	1000 - 9999	14	0
	POLYMER COIL COATERS	FAIRFIELD	AL	ALD98084394	1000 - 9999	0	250
	POTTER PAINT CO.	CORTLAND	NY	NYD00222868	1000 - 9999	201	202
	POTTER PAINT CO.	CAMBRIDGE CITY	IN	IND006063697	1000 - 9999	250	250
	PPG INDUSTRIES INC.	EAST POINT	GA	GAD07587662	100000 - 999999	0	11500
	PPG INDUSTRIES INC.	SPRINGDALE	PA	PAD00433631	100000 - 999999	0	1300
	PPG INDUSTRIES INC.	CLEVELAND	OH	OHD00446014	1000000 - 9999999	0	145
	PPG INDUSTRIES INC.	TORRANCE	CA	CAD00832343	100000 - 999999	0	170

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	PPG INDUSTRIES INC.	OAK CREEK	WI	WID05997293	100000 - 999999	5	49625
	PPG INDUSTRIES INC.	DELAWARE	OH	OHD00434730	100000 - 999999	0	123
	PRATT & LAMBERT UNITED INC.	ANDOVER	KS	KSD05657781	1000 - 9999	1480	2447
	PRECISION INDL. COATINGS INC.	CARROLLTON	TX	NA	10000 - 99999	1400	250
	PREMIUM COATINGS INC.	CONOVER	NC	066304627	10000 - 99999	1065	0
	PRESERVATIVE PAINT CO.	SEATTLE	WA	WAD05931506	1000 - 9999	250	5
	PRIME LEATHER FINISHES CO.	MILWAUKEE	WI	IWD00080908	1000 - 9999	250	250
	RANBAR TECHS. INC.	GLENSHAW	PA	PAD00433687	10000 - 99999	5	5
	RANDOLPH PRODS. CO.	CARLSTADT	NJ	005354300000	1000 - 9999	520	1
	RED SHOT PAINT & VARNISH CO.	EVANSVILLE	IN	IND990873499	100000 - 999999	5837	200
	RED SPOT WESTLAND INC.	WESTLAND	MI	MID09480811	100000 - 999999	7828	120
	RELIABLE COATINGS INC.	JACKSON	TN	NA	10000 - 99999	1500	0
	RELIABLE COATINGS INC.	EULESS	TX	TXD05437502	10000 - 99999	1300	0
	REXCEL COATINGS INC.	EL PASO	TX	TXD04684470	100 - 999	30	12
	RHONE-POULENC INC.	LOUISVILLE	KY	KYD00060556	100000 - 999999	660	980
	RODDA PAINT CO.	PORTLAND	OR	ORD00902047	10000 - 99999	2718	41
	ROHM TECH INC.	MALDEN	MA	MAD98107041	10000 - 99999	250	250
	RUDD CO. INC.	SEATTLE	WA	WAD00926176	1000 - 9999	900	30
	SAMPSON COATINGS INC.	RICHMOND	VA	VAD00310960	10000 - 99999	1950	0
	SANDSTROM PRODS. CO.	PORT BYRON	IL	ILD005269188	10000 - 99999	84	2823
	SCHENECTADY INTL. INC.	SCHENECTADY	NY	NYD00207011	10000 - 99999	750	250
	SEIBERT-OXIDERMO INC.	ROMULUS	MI	MID02009314	1000 - 9999	1577	937
	SEIBERT-OXIDERMO INC.	DETROIT	MI	MID09696319	10000 - 99999	477	2621
	SERVICE PAINT & COATINGS CO. INC.	HERMITAGE	TN	TND98147923	1000 - 9999	500	0
	SHEBOYGAN PAINT CO.	SHEBOYGAN	WI	WID00610376	10000 - 99999	6275	250
	SHEBOYGAN PAINT CO.	CEDARTOWN	GA	GAD11827394	10000 - 99999	700	3
	SHERWIN-WILLIAMS CO.	EMERYVILLE	CA	CAD00393460	10000 - 99999	432	308
	SHERWIN-WILLIAMS CO.	ANAHEIM	CA	CAD04213795	10000 - 99999	1	
	SHERWIN-WILLIAMS CO.	BALTIMORE	MD	MDD00021516	100000 - 999999	54	140
	SHERWIN-WILLIAMS CO.	MORROW	GA	GAD04286905	100000 - 999999	125	1130
	SHERWIN-WILLIAMS CO.	COLUMBUS	OH	OHD46460628	10000 - 99999	8472	5
	SHERWIN-WILLIAMS CO.	HOLLAND	MI	MID00602092	10000 - 99999	950	20
	SHERWIN-WILLIAMS CO.	ORLANDO	FL	NA	10000 - 99999	1	133
	SHERWIN-WILLIAMS CO.	NEWARK	NJ	NJD002451870	10000 - 99999	392	79
	SHERWIN-WILLIAMS CO.	RICHMOND	KY	KYD08239039	100000 - 999999	615	615
	SHERWIN-WILLIAMS CO.	GREENSBORO	NC	NCD00321431	1000 - 9999	3	205
	SHERWIN-WILLIAMS CO.	GREENSBORO	NC	NCD07156186	10000 - 99999	637	53

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	SHERWIN-WILLIAMS CO.	CHICAGO	IL	ILD005456439	100000 - 999999	488	1734
	SHERWIN-WILLIAMS CO.	GARLAND	TX	TXD05213132	10000 - 99999	176	341
	SIERRA CORP.	MINNETONKA	MN	MND98566725	10000 - 99999	568	0
	SIMPSON PAPER CO.	SOUTH SAN FRANCISCO	CA	CAD00915978	1000 - 9999	55	161
	SINCLAIR AMERITONE PAINT CORP.	CITY OF COMMERCE	CA	CAD98196605	10000 - 99999	250	250
	SINNETT-ELPACE COATINGS CORP.	PAGEDALE	MO	MOD00628852	1000 - 9999	440	290
	SOUTHERN COATINGS INC.	SUMTER	SC	SCD05018743	10000 - 99999	1000	1800
	SPECIALITY COATINGS CO.	ELK GROVE VILLAGE	IL	ILD005140108	100000 - 99999	430	8300
	SPRAYLAT CORP.	LOS ANGELES	CA	CAD98157691	10000 - 99999	750	750
	SPRAYLAT CORP.	CHICAGO	IL	ILD000814665	10000 - 99999	250	1380
	SPRAYLAT CORP.	MOUNT VERNON	NY	NYD00063196	10000 - 99999	250	1865
	SPRAYON PRODS. INC.	BEDFORD HEIGHTS	OH	OHD09534117	10000 - 99999	1	8
	STANDARD COATING CORP.	RIDGEFIELD	NJ	NJD001389352	1000 - 9999	750	5
	STERLING CHARK LURTON CORP.	MALDEN	MA	MAD00103163	10000 - 99999	250	0
	STERLING LACQUER MFG. CO.	SAINT LOUIS	MO	MOD00629142	1000 - 9999	2039	0
	STRATHMORE PRODS. INC.	CLAY	NY	NYD00222869	10000 - 99999	134	5
	SUMMIT INDL. COATINGS. INC.	MANSFIELD	TX	TXD98801500	1000 - 9999	250	250
	SUNBELT COATINGS INC.	PICAYUNE	MS	MSD00818465	1000 - 9999	720	250
	SURFACE COATINGS INC.	WILMINGTON	MA	MAD00104138	10000 - 99999	400	0
	SURFACE PROTECTION IND. INC.	LOS ANGELES	CA	CAD00825859	10000 - 99999	5	250
	TC CO.	NUTLEY	NJ	NJD041511254	100000 - 999999	121	159
	TC CO.	SANTA CLARA	CA	CAD00911850	10000 - 99999	140	103
	TC CO.	MELROSE PARK	IL	ILD059430561	100000 - 999999	128	537
	THOMPSON-MINWAX CO.	OLIVE BRANCH	MS	MSD00028741	10000 - 99999	3200	1
	TRU-TEST MFG. CO.	CARY	IL	ILD010238491	10000 - 99999	250	250
	U. S. PACKAGING CORP.	WHEELING	IL	ILD094291297	10000 - 99999	27	2
	U. S. PAINT CORP.	SAINT LOUIS	MO	MOD09547997	100000 - 999999	9300	250
	U. S. POLYMERS INC.	SAINT LOUIS	MO	MOD09672837	10000 - 99999	5	130
	UNITED COATINGS INC.	ENNIS	TX	TXD98105600	10000 - 99999	250	2100
	UNITED PAINT & CHEMICAL CORP.	SOUTHFIELD	MI	MID00532391	10000 - 99999	1656	182
	UNIVERSAL CHEMICAL & COATINGS INC.	ELK GROVE VILLAGE	IL	ILD042326207	10000 - 99999	12000	250
	VALSPAR CORP.	ROCKFORD	IL	ILD001980135	10000 - 99999	250	250
	VALSPAR CORP.	HIGH POINT	NC	NCD04141501	10000 - 99999	250	5
	VALSPAR CORP.	BEAUMONT	TX	TXD00080351	10000 - 99999	250	250
	VALSPAR CORP.	WHEELING	IL	ILD085876860	10000 - 99999	250	250
	VALSPAR CORP.	CHICAGO	IL	ILD047907555	10000 - 99999	5	5
	VALSPAR CORP.	KANKAKEE	IL	ILD002525753	10000 - 99999	250	250

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2851	VALSPAR CORP.	CARPENTERSVILLE	IL	ILD095299020	10000 - 99999	250	250
	VALSPAR CORP.	COVINGTON	GA	GAD04838844	10000 - 99999	5	5
	VALSPAR CORP.	PITTSBURGH	PA	PAD01498950	10000 - 99999	250	250
	VALSPAR CORP.	AZUSA	CA	CAD00181928	10000 - 99999	5	250
	VALSPAR CORP.	GARLAND	TX	TXD00732096	10000 - 99999	750	750
	VALSPAR CORP.	ROCHESTER	PA	PAD00434172	10000 - 99999	250	250
	VALSPAR CORP.	PORTLAND	OR	ORD00227708	10000 - 99999	5	5
	VANEX INC.	MOUNT VERNON	IL	ILD006317614	10000 - 99999	2300	33
	VANGUARD PAINTS & FINISHES INC.	MARIETTA	OH	OHD00438987	10000 - 99999	0	1393
	W. C. RICHARDS CO.	BLUE ISLAND	IL	ILD001754167	10000 - 99999	250	0
	W. C. RICHARDS CO.	ABERDEEN	NC	NCD06030672	10000 - 99999	750	0
	W. M. BARR & CO.	MEMPHIS	TN	TND00701728	1000 - 9999	250	250
	WARLICK PAINT CO. INC.	STATESVILLE	NC	NCD00323684	10000 - 99999	2100	380
	WATSON STANDARD CO.	HARWICK	PA	PAD00439703	10000 - 99999	1706	0
	WESTFIELD COATINGS CORP.	WESTFIELD	MA	MAD00111950	10000 - 99999	1100	39
	WESTINGHOUSE ELECTRIC CORP.	MANOR	PA	PAD00500059	10000 - 99999	250	250
	WHITFORD CORP.	FRAZER	PA	PAD98732228	1000 - 9999	184	10
	WILLIAMS-HAYWARD PROTECTIVE COATINGS INC.	BEDFORD PARK	IL	ILD005114327	1000 - 9999	185	0
	YENKIN-MAJESTIC PAINT CORP.	COLUMBUS	OH	OHD00428297	10000 - 99999	4700	250
						7202200 - 71121726	497005
						47.36%	37.10%
2860	NO DATA AVAILABLE						
2865	APOLLO COLORS INC.	ROCKDALE	IL	NA	10000 - 99999	250	0
	BASF CORP.	RENSSELAER	NY	NYD09324968	100000 - 999999	3	130
	BRAIN POWER INC.	MIAMI	FL	FLD982158065	10000 - 99999	250	5
	C. H. PATRICK & CO. INC.	TAYLORS	SC	SCD00041934	10000 - 99999	250	250
	CAROLINA EASTMAN CO.	COLUMBIA	SC	SCD04138776	1000000 - 9999999	6500	1600
	CIBA-GEIGY	MC INTOSH	AL	ALD00122190	1000000 - 9999999	2241	128
	CROMPTON & KNOWLES COLORS INC.	LOWELL	NC	NCD04444473	10000 - 99999	0	1
	DOW CHEMICAL	FREEPORT	TX	TXD00809279	100000 - 999999	5100	12
	DU PONT	LELAND	NC	NCD04736904	0 - 99	0	1900
	EASTMAN KODAK CO.	BATESVILLE	AR	ARD08923488	10000 - 99999	1	0
	HENKEL CORP.	CASTANEA	PA	PAD00042823	100000 - 999999	10	1
	MOORE BUSINESS FORMS & SYS. DIV.	STILLWATER	OK	OKD07427433	10000 - 99999	250	5

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2865	SANDOZ CHEMICALS CORP.	CHARLOTTE	NC	NCD00181036	100000 - 999999	20	12
	SUN CHEMICAL CORP.	CINCINNATI	OH	OHD07677860	1000 - 9999	250	250
					<b>2461000 - 24610086</b>	<b>15125</b>	<b>4294</b>
						<b>1.44%</b>	<b>0.50%</b>
2869	A. W. CHESTERTON CO.	GROVELAND	MA	MAD05345967	1000 - 9999	250	0
	AIR PRODUCTS & CHEMICALS INC.	CALVERT CITY	KY	KYD05583183	10000 - 99999	0	6
	AKCROS CHEMICALS AMERICA	NEW BRUNSWICK	NJ	NJD068682624	1000000 - 9999999	0	250
	AKZO CHEMICALS INC.	WESTON	MI	MID00503945	10000 - 99999	750	250
	AKZO CHEMICALS INC.	GALLIPOLIS FERRY	WV	WVD00970870	100000 - 999999	210	67
	ALCHEMY SOUTH LTD.	MARIETTA	GA	GAD00955926	10000 - 99999	250	0
	APOLLO CHEMICAL CORP.	GRAHAM	NC	NCD04242308	10000 - 99999	250	0
	AQUALON	HOPEWELL	VA	VAD00312192	1000 - 9999	383	0
	BAKER PERFORMANCE CHEMICALS INC.	ROANOKE	VA	NA	1000000 - 9999999	1011	5
	BASF CORP.	CHARLOTTE	NC	NCD00314970	10000 - 99999	5	250
	BLACKMAN UHLER	SPARTANBURG	SC	SCD00334906	10000 - 99999	5	5
	BLENTech CORP.	HOUSTON	TX	TXD49005790	100000 - 999999	6	1
	BORDEN INC.	LOUISVILLE	KY	KYD05583209	1000 - 9999	5	5
	C. P. HALL CO.	STOW	OH	NA	100000 - 999999	5	0
	C. P. HALL CO.	MEMPHIS	TN	NA	100000 - 999999	250	5
	C. P. HALL CO.	CHICAGO	IL	ILT180010340	100000 - 999999	5	0
	C. P. HALL CO.	CHICAGO	IL	ILT180001034	100000 - 999999	3411	3411
	CAL CHEMICAL CORP.	COVENTRY	RI	NA	10000 - 99999	250	0
	CHEMDESIGN CORP.	FITCHBURG	MA	MAD98091232	10000 - 99999	198	32
	CHEMICAL SOLVENTS INC.	CLEVELAND	OH	OHD05293788	100000 - 999999	15	1
	COMMERCE INDL. CHEMICALS INC.	MILWAUKEE	WI	WID02337588	10000 - 99999	250	250
	COMPLEX CHEMICALS CO. INC.	TALLULAH	LA	NA	100000 - 999999	250	250
	CYTEC IND. INC.	KALAMAZOO	MI	MID00536068	1000 - 9999	250	250
	DELEET MERCHANDISING	NEWARK	NJ	NJD011979945	10000 - 99999	5	5
	DOVER CHEMICAL CORP.	DOVER	OH	OHS00421056	10000 - 99999	5	0
	DOW CHEMICAL	MIDLAND	MI	MID00072472	50000000 - 99999999	2	624
	DOW CHEMICAL	PLAQUEMINE	LA	LAD00818708	10000000 - 49999999	1400	1700
DU PONT	LA PLACE	LA	LAD00189036	100000 - 999999	1100	10	
EASTMAN KODAK CO.	KINGSPORT	TN	TND00337692	1000000 - 9999999	17000	13000	
EMCO CHEMICAL DISTRIBUTORS INC.	NORTH CHICAGO	IL	ILD056647050	100000 - 999999	72	35	
ETHYL CORP.	ORANGEBURG	SC	SCD04338407	100000 - 999999	10700	5800	
ETHYL CORP.	PASADENA	TX	TXD00809615	100000 - 999999	8383	0	

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SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2869	ETHYL PETROLEUM ADDITIVES INC.	SAUGET	IL	ILD055871370	100000 - 999999	450	170
	EXXON CHEMICAL	HOUSTON	TX	TXD08268400	100000 - 999999	230	90
	EXXON CHEMICAL	MILTON	WI	WID00289786	1000 - 9999	46	21
	EXXON CHEMICAL	BATON ROUGE	LA	LAD000081281	1000 - 9999	13	0
	FERRO CORP.	ZACHARY	LA	LAD09210438	100000 - 999999	2721	3975
	FMC CORP.	NITRO	WV	WVD00500508	100000 - 999999	9300	800
	GE CO.	WATERFORD	NY	NYD00208003	10000 - 99999	54	45
	GROW GROUP INC.	DETROIT	MI	MID98056854	10000 - 99999	61	3
	HAYWOOD CO.	BROWNSVILLE	TN	NA	1000 - 9999	1	1
	HENKEL CORP.	CHARLOTTE	NC	NCD06256762	100000 - 999999	450	55
	HOECHST-CELANESE CORP.	MOUNT HOLLY	NC	NCD08507482	100000 - 999999	5	5
	HULS AMERICA INC.	ELIZABETH	NJ	NJD011246337	10000 - 99999	0	5
	HYDRITE CHEMICAL CO.	COTTAGE GROVE	WI	WID08050935	10000 - 99999	40	8
	HYDRITE CHEMICAL CO.	LA CROSSE	WI	WID08050935	1000 - 9999	4	1
	ICI AMERICAS INC.	PLANT CITY	FL	DED00234202	100000 - 999999	5	5
	ICI AMERICAS INC.	NEW CASTLE	DE	DED00234202	100000 - 999999	5	5
	ICI AMERICAS INC.	NEW CASTLE	DE	NA	1000 - 9999	5	5
	KING IND. INC.	NORWALK	CT	CTD04227951	10000 - 99999	5	60
	LUBRIZOL PETROLEUM CHEMICALS CO.	PAINESVILLE	OH	OHD00417262	10000 - 99999	40	27
	MARLOWE-VAN LOAN CORP.	HIGH POINT	NC	NA	1000 - 9999	250	0
	MILLIKEN CHEMICAL	INMAN	SC	SCD06931404	10000 - 99999	13	0
	MORTON INTL. INC.	MOSS POINT	MS	MSD00818658	100000 - 999999	250	250
	MORTON INTL. INC.	MOSS POINT	MS	MSD98060151	10000 - 99999	250	250
	NALCO CHEMICAL CO.	SUGAR LAND	TX	TXD00808461	10000 - 99999	1130	41
	NIACET CORP.	NIAGARA FALLS	NY	NYD08841989	10000 - 99999	5	0
	OLIN CORP	BRANDENBURG	KY	KYD00639624	1000000 - 9999999	1405	2021
	OLIN CORP.	BRANDENBURG	KY	KYD00639624	100000 - 9999999	1405	2021
	OXYCHEM PETROCHEMICALS	PASADENA	TX	TXD98230614	10000000 - 49999999	7300	0
	PHILLIPS PETROLEUM CO.	PASADENA	TX	TXD00809872	10000 - 99999	2000	340
	PROCTER & GAMBLE MFG. CO.	KANSAS CITY	KS	KSD00730032	100000 - 999999	0	280
	QUEST INTL. FRAGRANCES CO.	MOUNT OLIVE	NJ	NJD981871378	10000 - 99999	250	250
	ROHM & HAAS BAYPORT INC.	LA PORTE	TX	TXD00074734	100000 - 999999	9	1
	ROHM & HAAS DELAWARE VALLEY INC.	BRISTOL	PA	PAD00229206	100000 - 999999	1111	1034
	ROHM & HAAS TEXAS INC.	DEER PARK	TX	TXD06509627	10000 - 99999	12	0
	RYCOLINE PRODUCTS INC.	CHICAGO	IL	ILD005111893	10000 - 99999	250	250
	RYCOLINE PRODUCTS INC.	ONTARIO	CA	NA	100 - 999	5	0
	RYCOLINE PRODUCTS INC.	CLIFTON	NJ	NJD082972415	10000 - 99999	250	250

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air	
2869	SANDOZ CHEMICALS CORP.	MARTIN	SC	CSD08222834	10000 - 99999	250	250	
	SARTOMER CO. INC.	WEST CHESTER	PA	PAD04225937	10000 - 99999	5	0	
	SCHENECTADY CHEMICALS INC.	ROTTERDAM JUNCTION	NY	NYD00207118	10000 - 99999	250	750	
	SEA LION TECH. INC.	TEXAS CITY	TX	TXD00080430	100000 - 999999	250	5	
	SHELL CHEMICAL CO.	GEISMAR	LA	LAD00391318	10000000 - 49999999	1000	3700	
	SHIPLEY CO. INC.	MARLBOROUGH	MA	MAD00084449	100000 - 999999	250	2000	
	SOLVENTS & CHEMICALS INC.	PEARLAND	TX	NA	100000 - 999999	4288	1357	
	SPECIALITY CHEMICAL PRODUCTS CORP	MARINETTE	WI	WID98089826	10000 - 99999	0	100	
	SPECTRUM CHEMICAL MFG. CORP.	GARDENA	CA	CAD02074812	10000 - 99999	11	0	
	STAFLEX PRODUCTS	CARTERET	NJ	NJD002520021	10000 - 99999	127	476	
	TEXACO CHEMICAL CO.	AUSTIN	TX	TXD04147098	10000 - 99999	0	190	
	TEXACO CHEMICAL CO.	PORT ARTHUR	TX	TXD00082092	10000 - 99999	320	6	
	UNION CARBIDE CORP.	SISTERSVILLE	WV	WVD00432535	100000 - 999999	44823	5	
	UNION CARBIDE CORP.	SOUTH CHARLESTON	WV	WVD00500548	1000000 - 9999999	4712	1299	
	UNION CARBIDE CORP.	SOUTH CHARLESTON	WV	WVD06068229	10000 - 99999	3	10	
	UNION CARBIDE CORP.	INSTITUTE	WV	WVD00500550	100000 - 999999	3036	10128	
	UNION CARBIDE CORP.	PORT LAVACA	TX	TXD04151542	50000000 - 99999999	36638	6637	
	UNION CARBIDE CORP.	TEXAS CITY	TX	TXC00046153	100000 - 999999	1684	43	
	UNION CARBIDE CORP.	TEXAS CITY	TX	TXD98062678	10000000 - 49999999	31690	3071	
	UNION CARBIDE CORP.	HAHNVILLE	LA	LAD04158142	1000000 - 9999999	0	477	
	VIRKLER CO.	CHARLOTTE	NC	NA	10000 - 99999	1194	2999	
	VISTA CHEMICAL CO.	WESTLAKE	LA	LAD08647804	1000000 - 9999999	1570	554	
	WITCO CORP.	SANTA FE SPRINGS	CA	CAD00837162	100000 - 999999	250	250	
WITCO CORP.	PERTH AMBOY	NJ	NJD0029483	10000 - 99999	5	5		
WITCO CORP.	BROOKLYN	NY	NYD00390736	10000 - 99999	750	0		
						150590100 - 514900906	209112	72793
							19.93%	8.44%
2870	NO DATA AVAILABLE							
2873	DU PONT	BEAUMONT	TX	TXD00808110	10000 - 99999	8389	0	
					10000 - 99999	8389	0	
						0.80%	0.00%	
2874	NO DATA AVAILABLE							

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air	
2875	NO DATA AVAILABLE							
2879	BUCKMAN LABS INC.	MEMPHIS	TN	TND00702365	10000 - 99999	250	33	
	CHEVRON CHEMICAL CO.	MARYLAND HEIGHTS	MO	MOD00627235	10000 - 99999	1	2	
	DOW CHEMICAL	PITTSBURG	CA	CAD07652867	100000 - 999999	49	25	
	DREXEL CHEMICAL CO.	MEMPHIS	TN	TND73524555	100000 - 999999	5	5	
	TIPPECANOE LABS	SHADELAND	IN	IND06050967	10000 - 99999	600	2000	
	TRANSBAS INC.	BILLINGS	MT	MTD07971119	100000 - 999999	5	5	
	UNIVERSAL CO-OP INC.	NAPOLEON	OH	OHD00064713	1000 - 9999	5	250	
	VININGS IND. INC.	MARIETTA	GA	GAD03387058	10000 - 99999	5	5	
	ZENECA INC.	PASADENA	TX	TXD08201603	100000 - 999999	589	250	
						441000 - 4409991	1509	2575
							0.14%	0.30%
2890	NO DATA AVAILABLE							
2891	3M	SPRINGFIELD	MO	MOD04393789	10000 - 99999	524	2025	
	BORDEN INC.	PORTLAND	OR	ORD04248361	1000 - 9999	250	5	
	BOSTIK	MARSHALL	MI	MID06019824	10000 - 99999	6200	3100	
	DEXTER CORP.	PITTSBURG	CA	CAD05034543	1000 - 9999	5	5	
	FREDA INC.	ANGOLA	IN	IND984868380	1000 - 9999	750	0	
	GIBSON-HOMANS CO.	TWINSBURG TWSP	OH	OHD00419606	1000 - 9999	1	4	
	GIBSON-HOMANS CO.	ROSEDALE	MD	MD009908995	1000 - 9999	1	1	
	H. B. FULLER CO.	CINCINNATI	OH	OHD00423568	10000 - 99999	38	78	
	KEY POLYMER CORP.	LAWRENCE	MA	MAD00100575	10000 - 99999	1	0	
	LICOHEM INC.	CONYERS	GA	GAD98124343	10000 - 99999	5	5	
	LOCKHART CHEMICAL CO.	FLINT	MI	MID03367473	10000 - 99999	250	0	
	NATIONAL STARCH & CHEMICAL CO.	HAZLETON	PA	NA	10000 - 99999	0	1	
						75000 - 749988	8025	5224
							0.76%	0.61%
2892	NO DATA AVAILABLE							

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2893	ADVANCE PROCESS SUPPLY CO.	CHICAGO	IL	ILD044226223	10000 - 99999	6470	2710
	BORDEN PACKAGING & INDUSTRIAL PRODUCTS	CINCINNATI	OH	OHD06893201	10000 - 99999	2014	1791
	BORDEN PACKAGING & INDUSTRIAL PRODUCTS	FAIR LAWN	NJ	4CST40555	1000 - 9999	63	87
	CFC INTL. INC.	CHICAGO HEIGHTS	IL	ILD089828016	100 - 999	0	750
	COLONIAL PRINTING INK CORP.	EAST RUTHERFORD	NJ	NJD095171930	10000 - 99999	214	610
	CRODA INC.	EWING	NJ	NJD986585081	10000 - 99999	390	0
	CRODA INC.	NILES	IL	ILD002293124	10000 - 99999	300	0
	CRODA INC.	ATLANTA	GA	GAD05955411	1000 - 9999	200	0
	DECO-CHEM INC.	MISHAWAKA	IN	IND061570842	10000 - 99999	250	750
	FLINT INK CORP.	NORTH KANSAS CITY	MO	MOD05639111	1000 - 9999	14	391
	INX INTL. INK CO.	WARMINSTER	PA	PAD98735081	10000 - 99999	90	0
	J. M. HUBER CORP.	EDISON	NJ	NJD000632414	10000 - 99999	10	14
	JAMES RIVER PAPER CO. INC.	LIONVILLE	PA	PAD09684246	10000 - 99999	750	750
	JAMES RIVER PAPER CO. INC.	SAINT LOUIS	MO	MOT30000102	10000 - 99999	750	750
	JAMES RIVER PAPER CO. INC.	PORTLAND	OR	ORD09288703	1000 - 9999	250	250
	KC COATINGS INC.	LENEXA	KS	KSD00712723	100000 - 999999	2946	6876
	LIOCHEM INC.	CONYERS	GA	GAD98124343	10000 - 99999	5	5
	MARSH CO.	BELLEVILLE	IL	ILD980702252	10000 - 99999	250	250
	MATTHEWS INTL. CORP.	PITTSBURGH	PA	PAD98727038	10000 - 99999	250	250
	MEAD INK PRODS.	ANNISTON	AL	ALD98316663	10000 - 99999	490	720
	NAZ-DAR CO.	CHICAGO	IL	ILD005233960	10000 - 99999	2041	0
	NAZDAR ATLANTA	NORCROSS	GA	GAD98084515	10000 - 99999	130	302
	ROYMAL INC.	NEWPORT	NH	NHD01895367	1000 - 9999	250	0
	SICPA SECURINK CORP.	SPRINGFIELD	VA	VAD98194104	10000 - 99999	750	5
	SUN CHEMICAL CORP.	SAINT LOUIS	MO	MOD00628865	10000 - 99999	22	122
	SUN CHEMICAL CORP.	NORTHLAKE	IL	ILD054043369	1000 - 9999	1012	1072
	SUN CHEMICAL CORP.	INDIANAPOLIS	IN	IND075955146	1000 - 9999	13	75
	SUN CHEMICAL CORP.	CINCINNATI	OH	OHD99423481	1000 - 9999	15	87
	SUN CHEMICAL CORP.	CHARLOTTE	NC	NCD99086816	1000 - 9999	10	56
	SUN CHEMICAL CORP.	PHILADELPHIA	PA	PAD98055190	10000 - 99999	53	149
	SUN CHEMICAL CORP.	MENASHA	WI	WID04119308	1000 - 9999	16	12
	SUN CHEMICAL CORP.	CHICAGO	IL	ILD053191029	1000 - 9999	14	77
	VARN PRODS. CO. INC.	ADDISON	IL	ILD430055134	100000 - 999999	5	5
	VARN PRODS. CO. INC.	HOUSTON	TX	NA	100000 - 999999	5	5

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TRI Database: Reported Glycol Ether Emissions - 1992

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2893	VIDEOJET SYS. INTL.	ELK GROVE VILLAGE	IL	ILD984775619	1000 - 9999	0	250
	ZENECA INC.	LINDEN	NJ	NJD000533877	10000 - 99999	250	250
	ZENECA INC.	EAST POINT	GA	GAD06646932	10000 - 99999	250	250
	ZENECA INC.	EL DORADO	AR	ARD00805246	10000 - 99999	0	250
	ZENECA SPECIALTY INKS	HAMILTON	OH	OHD06092631	10000 - 99999	250	250
					542100 - 5420961	20792	20171
						1.98%	2.34%
2895	NO DATA AVAILABLE						
2899	3M	DECATUR	AL	ALD00402316	100000 - 999999	15	590
	AEROSOL SYSTEMS	MACEDONIA	OH	OHD05038780	10000 - 99999	250	5
	AKRON DISPERSIONS INC.	COPLEY	OH	OHD04521277	1000 - 9999	2	0
	ALPHACHEM INC.	SULPHUR	LA	LAD04809623	1000 - 9999	250	0
	ALPHACHEM INC.	DOWNINGTOWN	PA	NA	10000 - 99999	250	0
	ANCHOR/TBC	SPRING LAKE PARK	MN	MND98262409	10000 - 99999	400	0
	ASHLAND CHEMICAL INC.	KEARNY	NJ	NJD053518536	10000 - 99999	3	0
	ATHEA LABS. INC.	MILWAUKEE	WI	WID98195827	100000 - 999999	250	5
	BACHMAN SERVICES INC.	OAKLAHOMA CITY	OK	NA	10000 - 99999	250	5
	BAKER PERFORMANCE CHEMICALS INC.	DAYTON	TX	TXD00657176	10000 - 99999	88	8
	BAKER PERFORMANCE CHEMICALS INC.	SAND SPRINGS	OK	OKD07242410	100000 - 999999	116	72
	BENCHMARK RESEARCH & TECHNOLOGY INC.	MIDLAND	TX	TXD98159801	10000 - 99999	250	0
	BETZ LABORATORIES INC.	NEW PHILADELPHIA	OH	OHD07075126	100000 - 999999	1	1
	BETZ LABORATORIES INC.	GARLAND	TX	TXD06287173	100000 - 999999	1	1
	BETZ LABORATORIES INC.	LANGHORNE	PA	PAD00082480	100000 - 999999	4	2
	BETZ LABORATORIES INC.	WEST ORANGE	TX	TXD04291740	10000 - 99999	4	2
	BETZ LABORATORIES INC.	MACON	GA	GAD05728115	100000 - 999999	13	1
	BETZ LABORATORIES INC.	ADDISON	IL	ILD009722281	100000 - 999999	1	2
	BETZ LABORATORIES INC.	COMPTON	CA	CAD00260486	10000 - 99999	1	1
	BETZ LABORATORIES INC.	RESERVE	LA	LAD00071909	10000 - 99999	1	1
	BETZ LABORATORIES INC.	BAKERSFIELD	CA	CAT80012974	100000 - 999999	1	1
	BUCKMAN LABS INC.	CADET	MO	MOD00628693	100000 - 999999	5	250
	CCL CUSTOM MFG. INC.	NILES	IL	ILD081039422	100000 - 999999	5	250
	CHAMPION TECH. INC.	ODESSA	TX	TXD00080310	10000 - 99999	17	0
	CHEMICAL PROJECTS INC.	BROUSSARD	LA	NA	1000 - 9999	1	0
	CHEMIDYNE CORP.	MACEDONIA	OH	NA	1000 - 9999	5	5

**Soap And Detergent Association**  
**TRI Database: Reported Glycol Ether Emissions - 1992**

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air
2899	CHEMISCO INC.	SAINT LOUIS	MO	MOD06852770	10000 - 99999	750	5
	CHEMSICO INC.	SAINT LOUIS	MO	MOD06852770	10000 - 99999	750	5
	CRC IND. INC.	WARMINSTER	PA	PAD06988002	10000 - 99999	5	0
	DEXTER CORP.	LONDONDERRY	NH	NA	10000 - 99999	5	250
	DOWELL SCHLUMBERGER INC.	TULSA	OK	OK000814202	10000 - 99999	5	5
	ELDORADO CHEMICAL CO. INC.	SAN ANTONIO	TX	TXD05756721	10000 - 99999	53	5
	ENCLEAN SPECIALTY CHEMICALS	HOUSTON	TX	NA	10000 - 99999	250	0
	ENTHONE-OMI INC.	WEST HAVEN	CT	CTD00116901	10000 - 99999	5	5
	ENTHONE-OMI INC.	WARREN	MI	MID05671774	100000 - 999999	5	5
	ENTHONE-OMI INC.	BRIDGEVIEW	IL	ILD069973790	10000 - 99999	5	5
	FOSECO INC.	CLEVELAND	OH	OHD99077849	10000 - 99999	19100	12734
	GEORGE MANN & CO. INC.	PROVIDENCE	RI	RID063908974	100000 - 999999	38	0
	HENKEL CORP.	SAINT LOUIS	MO	MOD98063134	10000 - 99999	0	250
	HENKEL CORP.	KANKAKEE	IL	ILD005215769	10000 - 99999	4	160
	HENKEL CORP.	FREMONT	CA	CAD00915236	10000 - 99999	250	250
	HENKEL CORP.	WARREN	MI	MID00536222	10000 - 99999	250	250
	HYDROSOL INC.	BRIDGEVIEW	IL	ILD077001741	0 - 0	3500	5
	ICI AMERICAS INC.	PEABODY	MA	MAD00103371	1000 - 9999	20	200
	IMPERIAL METAL & CHEMICAL CO.	PHILADELPHIA	PA	PAD98236283	1000 - 9999	5	250
	INTERCONTINENTAL CHEMICAL CORP.	CINCINNATI	OH	OHD00427438	100000 - 999999	750	750
	KELSTAR ENTS. INC.	CINNAMINSON	NJ	NJD986635787	1000 - 9999	2366	0
	L. CARLTON MERTZ	BEDFORD PARK	IL	ILD050566918	1000 - 9999	250	0
	M-I DRILLING FLUIDS L.L.C. WHARTON	HUNGERFORD	TX	TXD00083903	10000 - 99999	250	5
	MACDERMID INC.	WATERBURY	CT	CTD00116459	10000 - 99999	250	250
	MACDERMID INC.	FERNDALE	MI	MID00533837	10000 - 99999	250	250
	MACDERMID INC.	EDEN PRAIRIE	MN	MND98099952	10000 - 99999	250	250
	MAGNABLEND	WAXAHACHIE	TX	NA	1000 - 9999	250	0
	MAN-GILL CHEMICAL CO.	CLEVELAND	OH	OHD00419978	1000 - 9999	5	0
	MAURER-DHUMAKER INC.	LIVONIA	MI	MID09161660	1000 - 9999	250	0
	MICHELMAN INC.	CINCINNATI	OH	OHD00424697	10000 - 99999	0	250
	MOC PRODS. CO. INC.	PACOIMA	CA	CAD08179394	1000 - 9999	5	250
	MORTON INTL. INC.	TUSTIN	CA	CAD00833426	10000 - 99999	16	1
	MULTI CHEMICAL PRODS. CO. INC.	FONTANA	CA	CAD04552624	1000 - 9999	384	384
	NALCO CHEMICAL CO.	PAULSBORO	NJ	NJD079483392	10000 - 99999	6	5
	NALCO CHEMICAL CO.	CHICAGO	IL	ILD042075044	10000 - 99999	67	27
	NALCO CHEMICAL CO.	JONESBORO	GA	GAD04869648	10000 - 99999	1	1
	NALCO CHEMICAL CO.	CHICAGO	IL	ILD005092572	10000 - 99999	16	0

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TRI Database: Reported Glycol Ether Emissions - 1992

SIC Code	FacilityName	City	State	EPA ID	Max On Site	Fugitive Air	Stack Air	
2899	NATIONAL FOAM INC.	WEST CHESTER	PA	PAD12280451	100000 - 999999	0	250	
	OCG MICROELECTRONIC MATERIALS INC.	PROVIDENCE	RI	RID075728030	100000 - 999999	6018	110	
	PENRAY COS. INC.	ELK GROVE VILLAGE	IL	ILD00665612	100000 - 999999	73	2	
	PETROLITE CORP.	PASADENA	TX	TXD09661885	10000 - 99999	123	1	
	PETROLITE CORP.	PASADENA	TX	TXD08836123	100000 - 999999	30	950	
	PLAZE INC.	SAINT CLAIR	MO	MOD9857++5	10000 - 99999	250	250	
	PLAZE INC.	SAINT LOUIS	MO	MOD00632466	10000 - 99999	250	750	
	POWER LINE CHEMICAL	SALT LAKE CITY	UT	NA	1000 - 9999	250	0	
	PPG CHEMFIL CORP.	OFALLON	MO	MOD98172177	10000 - 99999	5	200	
	PPG CHEMFIL CORP.	TROY	MI	MID00491641	10000 - 99999	5	750	
	PRINTING PRODS.	BRANCHBURG PARK	NJ	NJD000603365	10000 - 99999	360	211	
	PYROIL PERFORMANCE PRODS.	HERNANDO	MS	MSD98277054	1000 - 9999	750	5	
	QUAKER CHEMICAL CORP.	POMONA	CA	CAD98167478	1000 - 9999	275	0	
	RBP CHEMICAL CORP.	WEST ALLIS	WI	WID00606924	10000 - 99999	50	360	
	REEF CHEMICAL CO. INC.	SNYDER	TX	NA	1000 - 9999	5	0	
	SPECIALTY SYSTEMS INC.	AUBURN HILLS	MI	MID98561948	10000 - 99999	250	0	
	STAHL USA	PEABODY	MA	MAD00084497	10000 - 99999	4	752	
	SYBRON CHEMICALS INC.	WELLFORD	SC	SCD07805703	10000 - 99999	250	5	
	UNICHEM INTL. INC.	HOBBS	NM	NMD00033355	10000 - 99999	250	250	
	W. R. GRACE & CO.	LAKE ZURICH	IL	ILD062407853	10000 - 99999	5	5	
	WEBCRAFT CHEMICALS INC.	MEWARK	NJ	NJD000308817	10000 - 99999	18	604	
	WITCO CORP.	HIGHLAND PARK	MI	MID05333788	10000 - 99999	1	0	
						2307000 - 23069916	41772	23464
							3.98%	2.72%
<b>Total:</b>					274776800 - 1265767391	1049390	862147	

**APPENDIX B**

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**COMPARISON OF TOXICOLOGY IN THREE CLASSES OF  
GLYCOL ETHERS**

## APPENDIX B

### COMPARISON OF TOXICOLOGY IN THREE CLASSES OF GLYCOL ETHERS

Certain low and mid-molecular weight glycol ethers demonstrate toxic effects when tested in animals, which have not been reported for high molecular weight glycol ethers (which are classified by U.S. EPA as alcohol ethoxylate surfactants and their derivatives). This difference in toxicity supports the contention that these latter materials should not be considered as hazardous air pollutants (HAPs) in the same category as the more toxic low and mid-molecular weight homologues.

#### INTRODUCTION

In compiling sufficient information to allow U.S. EPA to redefine the HAP "glycol ether" category, glycol ethers are categorized into three classes according to molecular weight based on the number of carbon atoms in the derivatized alcohol, regardless of the number of ethylene oxide moieties per mole of alcohol, as follows:

- Low molecular weight (1-2 carbons)
- Mid-molecular weight (3-7 carbons)
- High molecular weight (greater than 7 carbons)

The U.S. EPA redefinition should delete the high molecular weight glycol ethers, which are more properly considered as alcohol ethoxylate surfactants, from the category definition "Hazardous Air Pollutant Glycol Ethers". The toxicity concerns for certain members of the low and/or mid-molecular weight categories are considerably greater than those for the high molecular weight alcohol ethoxylate group, when considered as a class (see Table), which further supports this redefinition.

The toxicity of low and mid-molecular weight glycol ethers (Gingell et al., 1994; ECETOC, 1994) and alcohol ethoxylate (AE) surfactants (Talmage, 1994) has recently been reviewed and updated. The low and mid-molecular weight glycol ethers are generally metabolized to their corresponding alkoxy acetic acid derivatives, which in several cases have been shown to be responsible for the toxic effects.

#### TOXICOLOGY OF LOW MOLECULAR WEIGHT GLYCOL ETHERS (C1-C2)

The materials for which the most data exists are the methyl and ethyl ethers of ethylene glycol, also known as 2-methoxyethanol and 2-ethoxyethanol. The acetates of these glycol ethers, and the corresponding methyl and ethyl derivatives of di- and tri-ethylene glycol are also commercially available (reviewed in Gingell et al., ECETOC, 1994).



## OTHER CONSIDERATIONS

Low molecular weight glycol ethers are intrinsically more toxic than mid- and high molecular weight glycol ethers. When exposed by the dermal route, probably the most relevant route for human exposure, the toxicity of these glycol ethers decreases with increasing molecular weight, since the rate of dermal penetration decreases more than 100 fold from the lowest (ethylene glycol methyl ether) to the highest molecular weight tested (triethylene glycol butyl ether; Gingell et al., 1994). As molecular weight increases beyond this range, the rate of dermal penetration presumably continues to decline, further decreasing the likelihood of systemic toxicity. Similarly, with increasing molecular weight glycol ether vapor pressure decreases, further decreasing the likelihood of toxicity from the inhalation route. No systemic toxicity from inhalation exposure to surfactant alcohol ethoxylates has been reported.

The toxicity of the three classes of glycol ethers, as defined previously, are summarized in the following table:

### SUMMARY OF TOXIC EFFECTS OF GLYCOL ETHER CLASSES IN ANIMALS

<u>TOXIC ENDPOINT</u> <u>TARGET ORGAN</u>	<u>LOW MW</u>	<u>MID MW</u>	<u>HIGH MW</u>
Liver	Ethyl*	Butyl*	NONE
Brain	Methyl*	NONE	NONE
Blood	Methyl, Ethyl	Propyl*, Butyl	NONE
Kidney	Methyl, Ethyl	Butyl	NONE
Thymus	Methyl	NONE	NONE
Testes	Methyl, Ethyl	NONE	NONE
EMBRYOTOXICITY	Methyl, Ethyl	NONE	NONE
TERATOGENICITY	Methyl, Ethyl	NONE	NONE

\*These ethers of ethylene glycol demonstrated this activity in test animals. Data summarized from Gingell et al., 1994; ECETOC, 1994; and Talmage, 1994.

## REFERENCES

Corley RA (1996); *Assessing the Risk of Hemolysis in Humans Exposed to 2-Butoxyethanol Using a Physiologically-Based Pharmacokinetic Model*; Occupational Hygiene 2, 45-56.

Gingell R., Boatman RJR, Bus JS, Crawly TJ, Knaak JB, Krasavage WJ, Skoulis NP, Stack CR and Tyler TR (1994); *Glycol Ethers and Other Selected Glycol Derivatives in*

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SCREENS MODEL OUTPUT FOR ALL SIMULATION RUNS

APPENDIX C

3/24/97

0:58:41

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - URBAN

COMPLEX TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HT (M)	=	4.5720
STACK DIAMETER (M)	=	1.2190
STACK VELOCITY (M/S)	=	.4044
STACK GAS TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 1.9  
DISTANCE TO FINAL RISE (M) = 200.2

\*VALLEY 24-HR CALCS\*      \*\*SIMPLE TERRAIN 24-HR

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT	DIST	MAX 24-HR CONC	CONC	PLUME HT ABOVE STK	CONC	PLUME HT ABOVE STK	SC
(M)	(M)	(UG/M**3)	(UG/M**3)	BASE (M)	(UG/M**3)	HGT (M)	
(M/S)							
15.	15.	.2088E-13	.2088E-13	1.5	.0000	.0	0
.0	.0						
15.	500.	.1921E-01	.1921E-01	1.9	.0000	.0	0
.0	.0						
15.	1000.	.5947E-02	.5947E-02	1.9	.0000	.0	0
.0	.0						
100.	15.	.2088E-13	.2088E-13	1.5	.0000	.0	0
.0	.0						
100.	500.	.1921E-01	.1921E-01	1.9	.0000	.0	0
.0	.0						
100.	1000.	.5947E-02	.5947E-02	1.9	.0000	.0	0
.0	.0						

Cplx1.ou2

1000.	15.	.2088E-13	.2088E-13	1.5	.0000	.0	0
.0	.0						
1000.	500.	.1921E-01	.1921E-01	1.9	.0000	.0	0
.0	.0						
1000.	1000.	.5947E-02	.5947E-02	1.9	.0000	.0	0
.0	.0						
5000.	15.	.2088E-13	.2088E-13	1.5	.0000	.0	0
.0	.0						
5000.	500.	.1921E-01	.1921E-01	1.9	.0000	.0	0
.0	.0						
5000.	1000.	.5947E-02	.5947E-02	1.9	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- COMPLEX TERRAIN	----- .1921E-01	----- 500.	----- 15. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - RURAL

COMPLEX TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HT (M) = 4.5720  
 STACK DIAMETER (M) = 1.2190  
 STACK VELOCITY (M/S) = .4044  
 STACK GAS TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 1.9  
 DISTANCE TO FINAL RISE (M) = 151.3

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT	DIST	MAX 24-HR CONC	CONC	PLUME HT ABOVE STK	CONC	PLUME HT ABOVE STK	SC
(M)	(M)	(UG/M**3)	(UG/M**3)	BASE (M)	(UG/M**3)	HGT (M)	
(M/S)							
15.	15.	.0000	.0000	1.5	.0000	.0	0
.0	.0						
15.	500.	.3596E-01	.3596E-01	1.9	.0000	.0	0
.0	.0						
15.	1000.	.1701E-01	.1701E-01	1.9	.0000	.0	0
.0	.0						
100.	15.	.0000	.0000	1.5	.0000	.0	0
.0	.0						
100.	500.	.3596E-01	.3596E-01	1.9	.0000	.0	0
.0	.0						
100.	1000.	.1701E-01	.1701E-01	1.9	.0000	.0	0
.0	.0						

Cplx1.out

1000.	15.	.0000	.0000	1.5	.0000	.0	0
.0	.0						
1000.	500.	.3596E-01	.3596E-01	1.9	.0000	.0	0
.0	.0						
1000.	1000.	.1701E-01	.1701E-01	1.9	.0000	.0	0
.0	.0						
5000.	15.	.0000	.0000	1.5	.0000	.0	0
.0	.0						
5000.	500.	.3596E-01	.3596E-01	1.9	.0000	.0	0
.0	.0						
5000.	1000.	.1701E-01	.1701E-01	1.9	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
COMPLEX TERRAIN	.3596E-01	500.	15. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - URBAN

COMPLEX TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HT (M) = 9.1440  
 STACK DIAMETER (M) = 1.2190  
 STACK VELOCITY (M/S) = .4044  
 STACK GAS TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 6.5  
 DISTANCE TO FINAL RISE (M) = 200.2

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT (M)	DIST (M)	MAX 24-HR CONC (UG/M**3)	CONC (UG/M**3)	PLUME HT ABOVE STK BASE (M)	CONC (UG/M**3)	PLUME HT ABOVE STK HGT (M)	SC
15.	15.	.2088E-13	.2088E-13	6.1	.0000	.0	0
.0	.0						
15.	500.	.1921E-01	.1921E-01	6.5	.0000	.0	0
.0	.0						
15.	1000.	.5947E-02	.5947E-02	6.5	.0000	.0	0
.0	.0						
100.	15.	.2088E-13	.2088E-13	6.1	.0000	.0	0
.0	.0						
100.	500.	.1921E-01	.1921E-01	6.5	.0000	.0	0
.0	.0						
100.	1000.	.5947E-02	.5947E-02	6.5	.0000	.0	0
.0	.0						

1000.	15.	.2088E-13	.2088E-13	6.1	.0000	.0	0
.0	.0						
1000.	500.	.1921E-01	.1921E-01	6.5	.0000	.0	0
.0	.0						
1000.	1000.	.5947E-02	.5947E-02	6.5	.0000	.0	0
.0	.0						
5000.	15.	.2088E-13	.2088E-13	6.1	.0000	.0	0
.0	.0						
5000.	500.	.1921E-01	.1921E-01	6.5	.0000	.0	0
.0	.0						
5000.	1000.	.5947E-02	.5947E-02	6.5	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- COMPLEX TERRAIN	----- .1921E-01	----- 500.	----- 15. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - RURAL

COMPLEX TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HT (M) = 9.1440  
 STACK DIAMETER (M) = 1.2190  
 STACK VELOCITY (M/S) = .4044  
 STACK GAS TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 6.5  
 DISTANCE TO FINAL RISE (M) = 151.3

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT (M)	DIST (M)	MAX 24-HR CONC (UG/M**3)	CONC (UG/M**3)	PLUME HT ABOVE STK BASE (M)	CONC (UG/M**3)	PLUME HT ABOVE STK HGT (M)	SC
15.	15.	.0000	.0000	6.1	.0000	.0	0
.0	.0						
15.	500.	.3596E-01	.3596E-01	6.5	.0000	.0	0
.0	.0						
15.	1000.	.1701E-01	.1701E-01	6.5	.0000	.0	0
.0	.0						
100.	15.	.0000	.0000	6.1	.0000	.0	0
.0	.0						
100.	500.	.3596E-01	.3596E-01	6.5	.0000	.0	0
.0	.0						
100.	1000.	.1701E-01	.1701E-01	6.5	.0000	.0	0
.0	.0						

Cplx2.out

1000.	15.	.0000	.0000	6.1	.0000	.0	0
.0	.0						
1000.	500.	.3596E-01	.3596E-01	6.5	.0000	.0	0
.0	.0						
1000.	1000.	.1701E-01	.1701E-01	6.5	.0000	.0	0
.0	.0						
5000.	15.	.0000	.0000	6.1	.0000	.0	0
.0	.0						
5000.	500.	.3596E-01	.3596E-01	6.5	.0000	.0	0
.0	.0						
5000.	1000.	.1701E-01	.1701E-01	6.5	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- COMPLEX TERRAIN	----- .3596E-01	----- 500.	----- 15. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - URBAN

COMPLEX TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HT (M) = 15.2400  
STACK DIAMETER (M) = 1.2190  
STACK VELOCITY (M/S) = .4044  
STACK GAS TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 12.6  
DISTANCE TO FINAL RISE (M) = 200.2

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT (M)	DIST (M)	MAX 24-HR CONC (UG/M**3)	CONC (UG/M**3)	PLUME HT ABOVE STK BASE (M)	CONC (UG/M**3)	PLUME HT ABOVE STK HGT (M)	SC
100.	15.	.2088E-13	.2088E-13	12.2	.0000	.0	0
.0	.0						
100.	500.	.1921E-01	.1921E-01	12.6	.0000	.0	0
.0	.0						
100.	1000.	.5947E-02	.5947E-02	12.6	.0000	.0	0
.0	.0						
1000.	15.	.2088E-13	.2088E-13	12.2	.0000	.0	0
.0	.0						
1000.	500.	.1921E-01	.1921E-01	12.6	.0000	.0	0
.0	.0						
1000.	1000.	.5947E-02	.5947E-02	12.6	.0000	.0	0
.0	.0						

5000.	15.	.2088E-13	.2088E-13	12.2	.0000	.0	0
.0	.0						
5000.	500.	.1921E-01	.1921E-01	12.6	.0000	.0	0
.0	.0						
5000.	1000.	.5947E-02	.5947E-02	12.6	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
COMPLEX TERRAIN	.1921E-01	500.	100. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - RURAL

COMPLEX TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HT (M) = 15.2400  
 STACK DIAMETER (M) = 1.2190  
 STACK VELOCITY (M/S) = .4044  
 STACK GAS TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 12.6  
 DISTANCE TO FINAL RISE (M) = 151.3

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT (M)	DIST (M)	MAX 24-HR CONC (UG/M**3)	CONC (UG/M**3)	PLUME HT ABOVE STK BASE (M)	CONC (UG/M**3)	PLUME HT ABOVE STK HGT (M)	SC
100.	15.	.0000	.0000	12.2	.0000	.0	0
.0	.0						
100.	500.	.3596E-01	.3596E-01	12.6	.0000	.0	0
.0	.0						
100.	1000.	.1701E-01	.1701E-01	12.6	.0000	.0	0
.0	.0						
1000.	15.	.0000	.0000	12.2	.0000	.0	0
.0	.0						
1000.	500.	.3596E-01	.3596E-01	12.6	.0000	.0	0
.0	.0						
1000.	1000.	.1701E-01	.1701E-01	12.6	.0000	.0	0
.0	.0						

Cplx3.out

5000.	15.	.0000	.0000	12.2	.0000	.0	0
.0	.0						
5000.	500.	.3596E-01	.3596E-01	12.6	.0000	.0	0
.0	.0						
5000.	1000.	.1701E-01	.1701E-01	12.6	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
COMPLEX TERRAIN	.3596E-01	500.	100. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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0:58:43

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - URBAN

COMPLEX TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HT (M) = 30.4800  
 STACK DIAMETER (M) = 1.2190  
 STACK VELOCITY (M/S) = .4044  
 STACK GAS TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 27.8  
 DISTANCE TO FINAL RISE (M) = 200.2

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT (M)	DIST (M)	MAX 24-HR CONC (UG/M**3)	CONC (UG/M**3)	PLUME HT ABOVE STK BASE (M)	CONC (UG/M**3)	PLUME HT ABOVE STK HGT (M)	SC
100.	30.	.6461E-03	.6461E-03	27.5	.0000	.0	0
.0	.0						
100.	500.	.1921E-01	.1921E-01	27.8	.0000	.0	0
.0	.0						
100.	1000.	.5947E-02	.5947E-02	27.8	.0000	.0	0
.0	.0						
1000.	30.	.6461E-03	.6461E-03	27.5	.0000	.0	0
.0	.0						
1000.	500.	.1921E-01	.1921E-01	27.8	.0000	.0	0
.0	.0						
1000.	1000.	.5947E-02	.5947E-02	27.8	.0000	.0	0
.0	.0						

5000.	30.	.6461E-03	.6461E-03	27.5	.0000	.0	0
.0	.0						
5000.	500.	.1921E-01	.1921E-01	27.8	.0000	.0	0
.0	.0						
5000.	1000.	.5947E-02	.5947E-02	27.8	.0000	.0	0
.0	.0						

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
COMPLEX TERRAIN	.1921E-01	500.	100. (24-HR CONC)

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

3/24/97

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0:58:17

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - COMPLEX TERRAIN - RURAL

COMPLEX TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HT (M)	=	30.4800
STACK DIAMETER (M)	=	1.2190
STACK VELOCITY (M/S)	=	.4044
STACK GAS TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

FINAL STABLE PLUME HEIGHT (M) = 27.8  
DISTANCE TO FINAL RISE (M) = 151.3

\*VALLEY 24-HR CALCS\* \*\*SIMPLE TERRAIN 24-HR

CALCS**		*VALLEY 24-HR CALCS*			**SIMPLE TERRAIN 24-HR		
TERR HT	DIST	MAX 24-HR CONC	CONC	PLUME HT ABOVE STK	CONC	PLUME HT ABOVE STK	SC
(M)	(M)	(UG/M**3)	(UG/M**3)	BASE (M)	(UG/M**3)	HGT (M)	
(M/S)							
100.	30.	.2437E-26	.2437E-26	27.5	.0000	.0	0
.0	.0						
100.	500.	.3596E-01	.3596E-01	27.8	.0000	.0	0
.0	.0						
100.	1000.	.1701E-01	.1701E-01	27.8	.0000	.0	0
.0	.0						
1000.	30.	.2437E-26	.2437E-26	27.5	.0000	.0	0
.0	.0						
1000.	500.	.3596E-01	.3596E-01	27.8	.0000	.0	0
.0	.0						
1000.	1000.	.1701E-01	.1701E-01	27.8	.0000	.0	0
.0	.0						

5000.	30.	.2437E-26	.2437E-26	27.5	.0000	.0	0
.0	.0						
5000.	500.	.3596E-01	.3596E-01	27.8	.0000	.0	0
.0	.0						
5000.	1000.	.1701E-01	.1701E-01	27.8	.0000	.0	0
.0	.0						

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- COMPLEX TERRAIN	----- .3596E-01	----- 500.	----- 100. (24-HR CONC)

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:19

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 4.5720  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 3.0300  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) ) - - 4 2	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	66.67	6	1.0	1.0	10000.0	2.60	1.68	2.5
	HS								
	100.	4.781	5	1.0	1.0	10000.0	3.38	10.79	8.6
	HS								
	200.	1.469	5	1.0	1.0	10000.0	3.38	21.17	15.0

7	HS								
	300.	.7290	5	1.0	1.0	10000.0	3.38	31.18	20.8
7	HS								
	400.	.4461	5	1.0	1.0	10000.0	3.38	40.86	26.1
6	HS								
	500.	.3067	5	1.0	1.0	10000.0	3.38	50.21	31.0
3	HS								
	600.	.2270	5	1.0	1.0	10000.0	3.38	59.97	35.5
6	HS								
	700.	.1768	5	1.0	1.0	10000.0	3.38	68.06	39.8
1	HS								
	800.	.1428	5	1.0	1.0	10000.0	3.38	76.60	43.8
0	HS								
	900.	.1187	5	1.0	1.0	10000.0	3.38	84.89	47.5
9	HS								
	1000.	.1008	5	1.0	1.0	10000.0	3.38	92.97	51.1
9	HS								
	1100.	.8710E-01	5	1.0	1.0	10000.0	3.38	100.83	54.6
2	HS								
	1200.	.7636E-01	5	1.0	1.0	10000.0	3.38	108.50	57.9
1	HS								
	1300.	.6775E-01	5	1.0	1.0	10000.0	3.38	115.99	61.0
7	HS								
	1400.	.6072E-01	5	1.0	1.0	10000.0	3.38	123.30	64.1
1	HS								
	1500.	.5489E-01	5	1.0	1.0	10000.0	3.38	130.44	67.0
5	HS								
	1600.	.4998E-01	5	1.0	1.0	10000.0	3.38	137.43	69.8
9	HS								
	1700.	.4582E-01	5	1.0	1.0	10000.0	3.38	144.27	72.6
4	HS								
	1800.	.4223E-01	5	1.0	1.0	10000.0	3.38	150.97	75.3
0	HS								
	1900.	.3913E-01	5	1.0	1.0	10000.0	3.38	157.54	77.9
0	HS								
	2000.	.3642E-01	5	1.0	1.0	10000.0	3.38	163.98	80.4
2	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

4	HS	15.	66.67	6	1.0	1.0	10000.0	2.60	1.68	2.5
---	----	-----	-------	---	-----	-----	---------	------	------	-----

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 21.80  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.03  
 CAVITY LENGTH (M) = 11.81  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 21.80  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.03  
 CAVITY LENGTH (M) = 11.81  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	66.67	15.	0.
BLDG. CAVITY-1 H)	21.80	12.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	21.80	12.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:57:51

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 4.5720  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 3.0300  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)	
	15.	153.2	6	1.0	1.0	10000.0	2.60	.73	2.5
4	HS 100.	19.17	6	1.0	1.0	10000.0	3.38	4.09	4.7
7	HS 200.	8.591	6	1.0	1.0	10000.0	3.38	7.74	6.2

4	HS								
	300.	5.081	6	1.0	1.0	10000.0	3.38	11.24	7.6
3	HS								
	400.	3.415	6	1.0	1.0	10000.0	3.38	14.64	8.9
5	HS								
	500.	2.478	6	1.0	1.0	10000.0	3.38	17.97	10.2
2	HS								
	600.	1.955	6	1.0	1.0	10000.0	3.38	21.24	11.0
4	HS								
	700.	1.564	6	1.0	1.0	10000.0	3.38	24.46	12.0
9	HS								
	800.	1.285	6	1.0	1.0	10000.0	3.38	27.64	13.0
9	HS								
	900.	1.094	6	1.0	1.0	10000.0	3.38	30.78	13.8
5	HS								
	1000.	.9378	6	1.0	1.0	10000.0	3.38	33.89	14.7
3	HS								
	1100.	.8156	6	1.0	1.0	10000.0	3.38	36.97	15.5
7	HS								
	1200.	.7175	6	1.0	1.0	10000.0	3.38	40.02	16.3
9	HS								
	1300.	.6375	6	1.0	1.0	10000.0	3.38	43.04	17.1
8	HS								
	1400.	.5712	6	1.0	1.0	10000.0	3.38	46.05	17.9
5	HS								
	1500.	.5156	6	1.0	1.0	10000.0	3.38	49.03	18.7
0	HS								
	1600.	.4684	6	1.0	1.0	10000.0	3.38	52.00	19.4
4	HS								
	1700.	.4279	6	1.0	1.0	10000.0	3.38	54.94	20.1
6	HS								
	1800.	.3929	6	1.0	1.0	10000.0	3.38	57.87	20.8
6	HS								
	1900.	.3624	6	1.0	1.0	10000.0	3.38	60.78	21.5
6	HS								
	2000.	.3406	6	1.0	1.0	10000.0	3.38	63.68	21.9
0	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 15. 153.2 6 1.0 1.0 10000.0 2.60 .73 2.5  
 4 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 21.80  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.03  
 CAVITY LENGTH (M) = 11.81  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 21.80  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.03  
 CAVITY LENGTH (M) = 11.81  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	153.2	15.	0.
BLDG. CAVITY-1 H)	21.80	12.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	21.80	12.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0:58:20

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	3.7800
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M) DWASH	(UG/M**3)	STAB	(M/S)	(M/S)	(M) HT (M)	Y (M)	Z (M)	
-	15.	19.21	6	1.0	1.0	10000.0	4.58	1.67	2.3
9	SS 100.	4.656	6	1.0	1.0	10000.0	4.58	10.79	8.1
8	SS 200.	1.473	6	1.0	1.0	10000.0	4.58	21.17	14.6

Hyp2.ou2

8	SS								
	300.	.7329	6	1.0	1.0	10000.0	4.58	31.18	20.5
1	SS								
	400.	.4483	6	1.0	1.0	10000.0	4.58	40.85	25.8
3	SS								
	500.	.3081	6	1.0	1.0	10000.0	4.58	50.21	30.7
3	SS								
	600.	.2279	6	1.0	1.0	10000.0	4.58	59.27	35.2
8	SS								
	700.	.1774	6	1.0	1.0	10000.0	4.58	68.06	39.5
4	SS								
	800.	.1433	6	1.0	1.0	10000.0	4.58	76.59	43.5
6	SS								
	900.	.1190	6	1.0	1.0	10000.0	4.58	84.89	47.3
5	SS								
	1000.	.1010	5	1.0	1.0	10000.0	4.58	92.97	50.9
6	SS								
	1100.	.8730E-01	5	1.0	1.0	10000.0	4.58	100.83	54.4
1	SS								
	1200.	.7652E-01	5	1.0	1.0	10000.0	4.58	108.50	57.7
1	SS								
	1300.	.6788E-01	5	1.0	1.0	10000.0	4.58	115.99	60.8
8	SS								
	1400.	.6083E-01	5	1.0	1.0	10000.0	4.58	123.30	63.9
2	SS								
	1500.	.5498E-01	5	1.0	1.0	10000.0	4.58	130.44	66.8
7	SS								
	1600.	.5006E-01	5	1.0	1.0	10000.0	4.58	137.43	69.7
1	SS								
	1700.	.4588E-01	5	1.0	1.0	10000.0	4.58	144.27	72.4
6	SS								
	1800.	.4229E-01	5	1.0	1.0	10000.0	4.58	150.97	75.1
4	SS								
	1900.	.3918E-01	5	1.0	1.0	10000.0	4.58	157.54	77.7
3	SS								
	2000.	.3646E-01	5	1.0	1.0	10000.0	4.58	163.98	80.2
6	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 15. 19.21 6 1.0 1.0 10000.0 4.58 1.67 2.3  
 9 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 17.47  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.81  
 CAVITY LENGTH (M) = 13.28  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 17.47  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.81  
 CAVITY LENGTH (M) = 13.28  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	19.21	15.	0.
BLDG. CAVITY-1 H)	17.47	13.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	17.47	13.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0:57:53

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	3.7800
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
-	-----	-----	----	-----	-----	-----	-----	-----	-----
	15.	45.53	6	1.0	1.0	10000.0	4.58	.71	2.3
9	SS								
	100.	15.63	6	1.0	1.0	10000.0	4.58	4.07	4.7
2	SS								
	200.	7.635	6	1.0	1.0	10000.0	4.58	7.73	6.2

Hyp2.out

0	SS								
	300.	4.699	6	1.0	1.0	10000.0	4.58	11.23	7.5
9	SS								
	400.	3.229	6	1.0	1.0	10000.0	4.58	14.64	8.9
1	SS								
	500.	2.374	6	1.0	1.0	10000.0	4.58	17.97	10.1
8	SS								
	600.	1.885	6	1.0	1.0	10000.0	4.58	21.24	11.0
1	SS								
	700.	1.517	6	1.0	1.0	10000.0	4.58	24.46	12.0
5	SS								
	800.	1.253	6	1.0	1.0	10000.0	4.58	27.63	13.0
6	SS								
	900.	1.070	6	1.0	1.0	10000.0	4.58	30.78	13.8
2	SS								
	1000.	.9192	6	1.0	1.0	10000.0	4.58	33.88	14.7
0	SS								
	1100.	.8011	6	1.0	1.0	10000.0	4.58	36.96	15.5
4	SS								
	1200.	.7060	6	1.0	1.0	10000.0	4.58	40.01	16.3
6	SS								
	1300.	.6282	6	1.0	1.0	10000.0	4.58	43.04	17.1
5	SS								
	1400.	.5636	6	1.0	1.0	10000.0	4.58	46.05	17.9
2	SS								
	1500.	.5093	6	1.0	1.0	10000.0	4.58	49.03	18.6
8	SS								
	1600.	.4631	6	1.0	1.0	10000.0	4.58	51.99	19.4
1	SS								
	1700.	.4234	6	1.0	1.0	10000.0	4.58	54.94	20.1
3	SS								
	1800.	.3890	6	1.0	1.0	10000.0	4.58	57.87	20.8
4	SS								
	1900.	.3591	6	1.0	1.0	10000.0	4.58	60.78	21.5
3	SS								
	2000.	.3376	6	1.0	1.0	10000.0	4.58	63.68	21.8
7	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 15. 45.53 6 1.0 1.0 10000.0 4.58 .71 2.3  
 9 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 17.47  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.81  
 CAVITY LENGTH (M) = 13.28  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 17.47  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.81  
 CAVITY LENGTH (M) = 13.28  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

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\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	45.53	15.	0.
BLDG. CAVITY-1 H)	17.47	13.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	17.47	13.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0

1

0:58:21

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	4.5700
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	DWASH								
	15.	7.900	1	1.0	1.0	320.0	4.57	7.65	3.6
9	SS								
	100.	3.036	5	1.0	1.0	10000.0	4.57	15.53	8.9
4	SS								
	200.	1.163	5	1.0	1.0	10000.0	4.57	25.75	15.3

5	SS								
	300.	.6242	5	1.0	1.0	10000.0	4.57	35.60	21.1
3	SS								
	400.	.3975	5	1.0	1.0	10000.0	4.57	45.12	26.4
0	SS								
	500.	.2800	5	1.0	1.0	10000.0	4.57	54.34	31.2
5	SS								
	600.	.2106	5	1.0	1.0	10000.0	4.57	63.28	35.7
7	SS								
	700.	.1659	5	1.0	1.0	10000.0	4.57	71.95	40.0
0	SS								
	800.	.1352	5	1.0	1.0	10000.0	4.57	80.38	43.9
9	SS								
	900.	.1131	5	1.0	1.0	10000.0	4.57	88.57	47.7
6	SS								
	1000.	.9655E-01	5	1.0	1.0	10000.0	4.57	96.55	51.3
6	SS								
	1100.	.8380E-01	5	1.0	1.0	10000.0	4.57	104.33	54.7
8	SS								
	1200.	.7373E-01	5	1.0	1.0	10000.0	4.57	111.91	58.0
7	SS								
	1300.	.6562E-01	5	1.0	1.0	10000.0	4.57	119.32	61.2
2	SS								
	1400.	.5896E-01	5	1.0	1.0	10000.0	4.57	126.55	64.2
6	SS								
	1500.	.5341E-01	5	1.0	1.0	10000.0	4.57	133.63	67.1
9	SS								
	1600.	.4874E-01	5	1.0	1.0	10000.0	4.57	140.55	70.0
2	SS								
	1700.	.4475E-01	5	1.0	1.0	10000.0	4.57	147.32	72.7
7	SS								
	1800.	.4131E-01	5	1.0	1.0	10000.0	4.57	153.96	75.4
3	SS								
	1900.	.3833E-01	5	1.0	1.0	10000.0	4.57	160.47	78.0
2	SS								
	2000.	.3571E-01	5	1.0	1.0	10000.0	4.57	166.85	80.5
4	SS								

	MAXIMUM 1-HR CONCENTRATION AT OR BEYOND					15. M:			
	17.	8.123	1	1.0	1.0	320.0	4.57	7.85	4.4
3	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 14.45  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 4.67  
 CAVITY LENGTH (M) = 14.54  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 14.45  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 4.67  
 CAVITY LENGTH (M) = 14.54  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	8.123	17.	0.
BLDG. CAVITY-1 H)	14.45	15.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	14.45	15.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0:57:54

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	4.5720
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
A	(M)	(UG/M**3)	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	
)	DWASH								
-	-----	-----	-----	-----	-----	-----	-----	-----	
	15.	6.802	6	1.0	1.0	10000.0	4.57	7.65	3.0
9	SS								
	100.	5.137	6	1.0	1.0	10000.0	4.57	11.72	5.9
3	SS								
	200.	3.570	6	1.0	1.0	10000.0	4.57	15.11	7.3

4	SS								
	300.	2.617	6	1.0	1.0	10000.0	4.57	18.43	8.6
7	SS								
	400.	2.003	6	1.0	1.0	10000.0	4.57	21.69	9.9
5	SS								
	500.	1.638	6	1.0	1.0	10000.0	4.57	24.91	10.7
6	SS								
	600.	1.342	6	1.0	1.0	10000.0	4.57	28.08	11.8
3	SS								
	700.	1.125	6	1.0	1.0	10000.0	4.57	31.22	12.8
5	SS								
	800.	.9593	6	1.0	1.0	10000.0	4.57	34.32	13.8
2	SS								
	900.	.8447	6	1.0	1.0	10000.0	4.57	37.39	14.4
7	SS								
	1000.	.7418	6	1.0	1.0	10000.0	4.57	40.44	15.3
2	SS								
	1100.	.6579	6	1.0	1.0	10000.0	4.57	43.47	16.1
5	SS								
	1200.	.5886	6	1.0	1.0	10000.0	4.57	46.47	16.9
5	SS								
	1300.	.5305	6	1.0	1.0	10000.0	4.57	49.45	17.7
2	SS								
	1400.	.4813	6	1.0	1.0	10000.0	4.57	52.41	18.4
8	SS								
	1500.	.4391	6	1.0	1.0	10000.0	4.57	55.35	19.2
2	SS								
	1600.	.4027	6	1.0	1.0	10000.0	4.57	58.28	19.9
5	SS								
	1700.	.3711	6	1.0	1.0	10000.0	4.57	61.19	20.6
6	SS								
	1800.	.3433	6	1.0	1.0	10000.0	4.57	64.08	21.3
5	SS								
	1900.	.3248	6	1.0	1.0	10000.0	4.57	66.96	21.6
1	SS								
	2000.	.3036	6	1.0	1.0	10000.0	4.57	69.83	22.1
9	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

28.	7.439	1	1.0	1.0	10000.0	4.57	8.56	3.9
4	SS							

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 14.45  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 4.67  
 CAVITY LENGTH (M) = 14.55  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 14.45  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 4.67  
 CAVITY LENGTH (M) = 14.55  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.439	28.	0.
BLDG. CAVITY-1 H)	14.45	15.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	14.45	15.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:21

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 4.5720  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = .0000  
 MIN HORIZ BLDG DIM (M) = .0000  
 MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	DWASH								
	15.	30.06	4	1.5	1.5	480.0	2.56	2.43	2.1
3	NO								
	100.	5.380	5	1.0	1.0	10000.0	3.38	10.79	7.4
7	NO								
	200.	1.571	5	1.0	1.0	10000.0	3.38	21.17	14.0

Hyp4.ou2

4	NO								
	300.	.7621	5	1.0	1.0	10000.0	3.38	31.18	19.9
4	NO								
	400.	.4608	5	1.0	1.0	10000.0	3.38	40.86	25.3
0	NO								
	500.	.3146	5	1.0	1.0	10000.0	3.38	50.21	30.2
4	NO								
	600.	.2318	5	1.0	1.0	10000.0	3.38	59.27	34.8
3	NO								
	700.	.1799	5	1.0	1.0	10000.0	3.38	68.06	39.1
1	NO								
	800.	.1450	5	1.0	1.0	10000.0	3.38	76.60	43.1
5	NO								
	900.	.1202	5	1.0	1.0	10000.0	3.38	84.89	46.9
7	NO								
	1000.	.1020	5	1.0	1.0	10000.0	3.38	92.97	50.6
0	NO								
	1100.	.8800E-01	5	1.0	1.0	10000.0	3.38	100.83	54.0
6	NO								
	1200.	.7708E-01	5	1.0	1.0	10000.0	3.38	108.50	57.3
7	NO								
	1300.	.6833E-01	5	1.0	1.0	10000.0	3.38	115.99	60.5
5	NO								
	1400.	.6119E-01	5	1.0	1.0	10000.0	3.38	123.30	63.6
1	NO								
	1500.	.5528E-01	5	1.0	1.0	10000.0	3.38	130.44	66.5
7	NO								
	1600.	.5032E-01	5	1.0	1.0	10000.0	3.38	137.43	69.4
2	NO								
	1700.	.4610E-01	5	1.0	1.0	10000.0	3.38	144.27	72.1
8	NO								
	1800.	.4248E-01	5	1.0	1.0	10000.0	3.38	150.97	74.8
6	NO								
	1900.	.3935E-01	5	1.0	1.0	10000.0	3.38	157.54	77.4
7	NO								
	2000.	.3661E-01	5	1.0	1.0	10000.0	3.38	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 15. 30.06 4 1.5 1.5 480.0 2.56 2.43 2.1  
 3 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	30.06	15.	0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

3/24/97

0

0:57:55

1

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 4.5720  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = .0000  
 MIN HORIZ BLDG DIM (M) = .0000  
 MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
-	-----	-----	-----	-----	-----	-----	-----	-----	
3	15.	24.01	3	2.5	2.5	800.0	1.90	2.17	1.3
4	NO								
	100.	18.47	6	1.5	1.5	10000.0	2.56	4.08	2.3
	NO								
	200.	10.77	6	1.0	1.0	10000.0	3.38	7.74	4.1

Hyp4.out

1	NO								
	300.	6.335	6	1.0	1.0	10000.0	3.38	11.24	5.6
4	NO								
	400.	4.146	6	1.0	1.0	10000.0	3.38	14.64	7.0
6	NO								
	500.	2.935	6	1.0	1.0	10000.0	3.38	17.97	8.4
1	NO								
	600.	2.197	6	1.0	1.0	10000.0	3.38	21.24	9.6
9	NO								
	700.	1.713	6	1.0	1.0	10000.0	3.38	24.46	10.9
4	NO								
	800.	1.395	6	1.0	1.0	10000.0	3.38	27.64	11.9
8	NO								
	900.	1.162	6	1.0	1.0	10000.0	3.38	30.78	12.9
9	NO								
	1000.	.9867	6	1.0	1.0	10000.0	3.38	33.89	13.9
6	NO								
	1100.	.8545	6	1.0	1.0	10000.0	3.38	36.97	14.8
3	NO								
	1200.	.7492	6	1.0	1.0	10000.0	3.38	40.02	15.6
6	NO								
	1300.	.6636	6	1.0	1.0	10000.0	3.38	43.04	16.4
8	NO								
	1400.	.5931	6	1.0	1.0	10000.0	3.38	46.05	17.2
7	NO								
	1500.	.5341	6	1.0	1.0	10000.0	3.38	49.03	18.0
4	NO								
	1600.	.4842	6	1.0	1.0	10000.0	3.38	52.00	18.7
9	NO								
	1700.	.4415	6	1.0	1.0	10000.0	3.38	54.94	19.5
2	NO								
	1800.	.4047	6	1.0	1.0	10000.0	3.38	57.87	20.2
4	NO								
	1900.	.3727	6	1.0	1.0	10000.0	3.38	60.78	20.9
4	NO								
	2000.	.3447	6	1.0	1.0	10000.0	3.38	63.68	21.6

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 15. 24.01 3 2.5 2.5 800.0 1.90 2.17 1.3  
 3 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

3/24/97

0:58:22

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 6.0600  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	3.249	5	1.0	1.0	10000.0	7.95	10.79	9.9
7	HS								
	200.	1.238	5	1.0	1.0	10000.0	7.95	21.17	16.2

7	HS								
	300.	.6573	5	1.0	1.0	10000.0	7.95	31.18	21.9
6	HS								
	400.	.4150	5	1.0	1.0	10000.0	7.95	40.86	27.1
6	HS								
	500.	.2904	5	1.0	1.0	10000.0	7.95	50.21	31.9
6	HS								
	600.	.2173	5	1.0	1.0	10000.0	7.95	59.27	36.4
3	HS								
	700.	.1705	5	1.0	1.0	10000.0	7.95	68.06	40.6
2	HS								
	800.	.1386	5	1.0	1.0	10000.0	7.95	76.60	44.5
8	HS								
	900.	.1156	5	1.0	1.0	10000.0	7.95	84.89	48.3
2	HS								
	1000.	.9848E-01	5	1.0	1.0	10000.0	7.95	92.97	51.8
9	HS								
	1100.	.8532E-01	5	1.0	1.0	10000.0	7.95	100.83	55.2
9	HS								
	1200.	.7496E-01	5	1.0	1.0	10000.0	7.95	108.50	58.5
5	HS								
	1300.	.6662E-01	5	1.0	1.0	10000.0	7.95	115.99	61.6
9	HS								
	1400.	.5979E-01	5	1.0	1.0	10000.0	7.95	123.30	64.7
1	HS								
	1500.	.5411E-01	5	1.0	1.0	10000.0	7.95	130.44	67.6
2	HS								
	1600.	.4933E-01	5	1.0	1.0	10000.0	7.95	137.43	70.4
4	HS								
	1700.	.4526E-01	5	1.0	1.0	10000.0	7.95	144.27	73.1
8	HS								
	1800.	.4175E-01	5	1.0	1.0	10000.0	7.95	150.97	75.8
3	HS								
	1900.	.3871E-01	5	1.0	1.0	10000.0	7.95	157.54	78.4
1	HS								
	2000.	.3605E-01	5	1.0	1.0	10000.0	7.95	163.98	80.9
1	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 19. 13.08 6 1.0 1.0 10000.0 7.23 2.20 4.3  
 7 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 10.90  
 CRIT WS @10M (M/S) = 1.71  
 CRIT WS @ HS (M/S) = 1.71  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 6.43  
 CAVITY LENGTH (M) = 16.37  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 10.90  
 CRIT WS @10M (M/S) = 1.71  
 CRIT WS @ HS (M/S) = 1.71  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 6.43  
 CAVITY LENGTH (M) = 16.37  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	13.08	19.	0.
BLDG. CAVITY-1 H)	10.90	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	10.90	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:57:55

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 6.0600  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB (M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	8.959	6	1.0	1.0 10000.0	7.95	4.09	7.8
2	HS							
	200.	4.655	6	1.0	1.0 10000.0	7.95	7.74	9.1

Hyp5.out

3	HS								
	300.	3.070	6	1.0	1.0	10000.0	7.95	11.24	10.3
9	HS								
	400.	2.277	6	1.0	1.0	10000.0	7.95	14.64	11.2
1	HS								
	500.	1.769	6	1.0	1.0	10000.0	7.95	17.97	12.2
4	HS								
	600.	1.427	6	1.0	1.0	10000.0	7.95	21.24	13.2
4	HS								
	700.	1.199	6	1.0	1.0	10000.0	7.95	24.46	13.9
2	HS								
	800.	1.017	6	1.0	1.0	10000.0	7.95	27.64	14.7
9	HS								
	900.	.8778	6	1.0	1.0	10000.0	7.95	30.78	15.6
3	HS								
	1000.	.7673	6	1.0	1.0	10000.0	7.95	33.89	16.4
5	HS								
	1100.	.6782	6	1.0	1.0	10000.0	7.95	36.97	17.2
4	HS								
	1200.	.6051	6	1.0	1.0	10000.0	7.95	40.02	18.0
1	HS								
	1300.	.5441	6	1.0	1.0	10000.0	7.95	43.04	18.7
6	HS								
	1400.	.4927	6	1.0	1.0	10000.0	7.95	46.05	19.4
9	HS								
	1500.	.4489	6	1.0	1.0	10000.0	7.95	49.03	20.2
1	HS								
	1600.	.4112	6	1.0	1.0	10000.0	7.95	52.00	20.9
1	HS								
	1700.	.3784	6	1.0	1.0	10000.0	7.95	54.94	21.6
1	HS								
	1800.	.3580	6	1.0	1.0	10000.0	7.95	57.87	21.6
9	HS								
	1900.	.3331	6	1.0	1.0	10000.0	7.95	60.78	22.2
7	HS								
	2000.	.3110	6	1.0	1.0	10000.0	7.95	63.68	22.8
4	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 19. 30.68 6 1.0 1.0 10000.0 7.23 .93 4.3  
 7 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 10.90  
 CRIT WS @10M (M/S) = 1.71  
 CRIT WS @ HS (M/S) = 1.71  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 6.43  
 CAVITY LENGTH (M) = 16.37  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 10.90  
 CRIT WS @10M (M/S) = 1.71  
 CRIT WS @ HS (M/S) = 1.71  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 6.43  
 CAVITY LENGTH (M) = 16.37  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	30.68	19.	0.
BLDG. CAVITY-1 H)	10.90	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	10.90	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:23

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	9.1440
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	7.5600
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	2.953	6	1.0	1.0	10000.0	9.15	10.79	9.3
7	SS								
	200.	1.218	5	1.0	1.0	10000.0	9.15	21.17	15.7

4	SS								
	300.	.6555	5	1.0	1.0	10000.0	9.15	31.18	21.4
8	SS								
	400.	.4153	5	1.0	1.0	10000.0	9.15	40.85	26.7
1	SS								
	500.	.2910	5	1.0	1.0	10000.0	9.15	50.21	31.5
5	SS								
	600.	.2178	5	1.0	1.0	10000.0	9.15	59.27	36.0
5	SS								
	700.	.1709	5	1.0	1.0	10000.0	9.15	68.06	40.2
6	SS								
	800.	.1389	5	1.0	1.0	10000.0	9.15	76.59	44.2
3	SS								
	900.	.1158	5	1.0	1.0	10000.0	9.15	84.89	48.0
0	SS								
	1000.	.9868E-01	5	1.0	1.0	10000.0	9.15	92.97	51.5
8	SS								
	1100.	.8548E-01	5	1.0	1.0	10000.0	9.15	100.83	55.0
0	SS								
	1200.	.7509E-01	5	1.0	1.0	10000.0	9.15	108.50	58.2
7	SS								
	1300.	.6673E-01	5	1.0	1.0	10000.0	9.15	115.99	61.4
2	SS								
	1400.	.5988E-01	5	1.0	1.0	10000.0	9.15	123.30	64.4
5	SS								
	1500.	.5419E-01	5	1.0	1.0	10000.0	9.15	130.44	67.3
7	SS								
	1600.	.4940E-01	5	1.0	1.0	10000.0	9.15	137.43	70.2
0	SS								
	1700.	.4532E-01	5	1.0	1.0	10000.0	9.15	144.27	72.9
4	SS								
	1800.	.4181E-01	5	1.0	1.0	10000.0	9.15	150.97	75.6
0	SS								
	1900.	.3876E-01	5	1.0	1.0	10000.0	9.15	157.54	78.1
8	SS								
	2000.	.3609E-01	5	1.0	1.0	10000.0	9.15	163.98	80.6
9	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 23. 5.426 6 1.0 1.0 10000.0 9.15 2.63 4.5  
 7 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 8.737  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 8.44  
 CAVITY LENGTH (M) = 17.73  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 8.737  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 8.44  
 CAVITY LENGTH (M) = 17.73  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.426	23.	0.
BLDG. CAVITY-1 H)	8.737	18.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	8.737	18.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:57:56

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE                =          POINT
EMISSION RATE (G/S)        =      .151000E-02
STACK HEIGHT (M)           =          9.1440
STK INSIDE DIAM (M)        =          1.2190
STK EXIT VELOCITY (M/S)    =          .4044
STK GAS EXIT TEMP (K)      =      293.0000
AMBIENT AIR TEMP (K)       =      293.0000
RECEPTOR HEIGHT (M)     =          .0000
URBAN/RURAL OPTION         =          RURAL
BUILDING HEIGHT (M)        =          7.5600
MIN HORIZ BLDG DIM (M)     =      15.2400
MAX HORIZ BLDG DIM (M)     =      15.2400
    
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	7.690	6	1.0	1.0	10000.0	9.15	4.07	8.0
3	SS								
	200.	4.123	6	1.0	1.0	10000.0	9.15	7.73	9.3

Hyp6.out

4	SS									
	300.	2.783	6	1.0	1.0	10000.0	9.15	11.23	10.5	
9	SS									
	400.	2.088	6	1.0	1.0	10000.0	9.15	14.64	11.4	
0	SS									
	500.	1.642	6	1.0	1.0	10000.0	9.15	17.97	12.4	
3	SS									
	600.	1.337	6	1.0	1.0	10000.0	9.15	21.24	13.4	
2	SS									
	700.	1.130	6	1.0	1.0	10000.0	9.15	24.46	14.0	
9	SS									
	800.	.9648	6	1.0	1.0	10000.0	9.15	27.63	14.9	
5	SS									
	900.	.8365	6	1.0	1.0	10000.0	9.15	30.78	15.7	
8	SS									
	1000.	.7344	6	1.0	1.0	10000.0	9.15	33.88	16.5	
9	SS									
	1100.	.6514	6	1.0	1.0	10000.0	9.15	36.96	17.3	
8	SS									
	1200.	.5830	6	1.0	1.0	10000.0	9.15	40.01	18.1	
5	SS									
	1300.	.5257	6	1.0	1.0	10000.0	9.15	43.04	18.9	
0	SS									
	1400.	.4771	6	1.0	1.0	10000.0	9.15	46.05	19.6	
3	SS									
	1500.	.4356	6	1.0	1.0	10000.0	9.15	49.03	20.3	
4	SS									
	1600.	.3997	6	1.0	1.0	10000.0	9.15	51.99	21.0	
4	SS									
	1700.	.3772	6	1.0	1.0	10000.0	9.15	54.94	21.1	
1	SS									
	1800.	.3492	6	1.0	1.0	10000.0	9.15	57.87	21.7	
8	SS									
	1900.	.3253	6	1.0	1.0	10000.0	9.15	60.78	22.3	
6	SS									
	2000.	.3041	6	1.0	1.0	10000.0	9.15	63.68	22.9	
2	SS									
	MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:									
	23.	13.19	6	1.0	1.0	10000.0	9.15	1.08	4.5	
7	SS									

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 8.737  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 8.44  
 CAVITY LENGTH (M) = 17.73  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 8.737  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 8.44  
 CAVITY LENGTH (M) = 17.73  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	13.19	23.	0.
BLDG. CAVITY-1 H)	8.737	18.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	8.737	18.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:23

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 9.1440  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M) DWASH	(UG/M**3)	STAB	(M/S)	(M/S)	(M) HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	2.370	5	1.0	1.0 10000.0	9.15	13.02	11.0
9	SS							
	200.	1.037	5	1.0	1.0 10000.0	9.15	23.32	17.2

8	SS								
	300.	.5833	5	1.0	1.0	10000.0	9.15	33.26	22.8
8	SS								
	400.	.3797	5	1.0	1.0	10000.0	9.15	42.86	28.0
0	SS								
	500.	.2707	5	1.0	1.0	10000.0	9.15	52.15	32.7
4	SS								
	600.	.2052	5	1.0	1.0	10000.0	9.15	61.15	37.1
6	SS								
	700.	.1625	5	1.0	1.0	10000.0	9.15	69.89	41.3
1	SS								
	800.	.1329	5	1.0	1.0	10000.0	9.15	78.37	45.2
3	SS								
	900.	.1114	5	1.0	1.0	10000.0	9.15	86.62	48.9
4	SS								
	1000.	.9531E-01	5	1.0	1.0	10000.0	9.15	94.65	52.4
8	SS								
	1100.	.8286E-01	5	1.0	1.0	10000.0	9.15	102.47	55.8
6	SS								
	1200.	.7299E-01	5	1.0	1.0	10000.0	9.15	110.10	59.1
0	SS								
	1300.	.6502E-01	5	1.0	1.0	10000.0	9.15	117.55	62.2
1	SS								
	1400.	.5847E-01	5	1.0	1.0	10000.0	9.15	124.82	65.2
1	SS								
	1500.	.5301E-01	5	1.0	1.0	10000.0	9.15	131.94	68.1
1	SS								
	1600.	.4840E-01	5	1.0	1.0	10000.0	9.15	138.89	70.9
1	SS								
	1700.	.4446E-01	5	1.0	1.0	10000.0	9.15	145.70	73.6
3	SS								
	1800.	.4106E-01	5	1.0	1.0	10000.0	9.15	152.37	76.2
7	SS								
	1900.	.3811E-01	5	1.0	1.0	10000.0	9.15	158.91	78.8
4	SS								
	2000.	.3552E-01	5	1.0	1.0	10000.0	9.15	165.32	81.3
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 37. 3.698 3 1.0 1.0 320.0 9.15 8.30 7.6  
 0 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 7.224  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 10.82  
 CAVITY LENGTH (M) = 14.49  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 7.224  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 10.82  
 CAVITY LENGTH (M) = 14.49  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.698	37.	0.
BLDG. CAVITY-1 H)	7.224	14.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	7.224	14.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:57:57

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 9.1440  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
			(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
15.	.0000	0	.0	.0	.0	.00	.00	.0
100.	2.513	6	1.0	1.0	10000.0	9.14	12.43	10.6
200.	1.917	6	1.0	1.0	10000.0	9.14	15.80	11.6

Hyp7.out

8	SS								
	300.	1.528	6	1.0	1.0	10000.0	9.14	19.11	12.7
0	SS								
	400.	1.257	6	1.0	1.0	10000.0	9.14	22.36	13.6
8	SS								
	500.	1.068	6	1.0	1.0	10000.0	9.14	25.57	14.3
9	SS								
	600.	.9170	6	1.0	1.0	10000.0	9.14	28.73	15.2
4	SS								
	700.	.7987	6	1.0	1.0	10000.0	9.14	31.86	16.0
6	SS								
	800.	.7038	6	1.0	1.0	10000.0	9.14	34.96	16.8
6	SS								
	900.	.6263	6	1.0	1.0	10000.0	9.14	38.03	17.6
4	SS								
	1000.	.5621	6	1.0	1.0	10000.0	9.14	41.07	18.4
0	SS								
	1100.	.5080	6	1.0	1.0	10000.0	9.14	44.09	19.1
5	SS								
	1200.	.4621	6	1.0	1.0	10000.0	9.14	47.09	19.8
7	SS								
	1300.	.4226	6	1.0	1.0	10000.0	9.14	50.06	20.5
8	SS								
	1400.	.3884	6	1.0	1.0	10000.0	9.14	53.02	21.2
8	SS								
	1500.	.3687	6	1.0	1.0	10000.0	9.14	55.96	21.2
3	SS								
	1600.	.3419	6	1.0	1.0	10000.0	9.14	58.88	21.8
8	SS								
	1700.	.3189	6	1.0	1.0	10000.0	9.14	61.79	22.4
6	SS								
	1800.	.2983	6	1.0	1.0	10000.0	9.14	64.68	23.0
2	SS								
	1900.	.2799	6	1.0	1.0	10000.0	9.14	67.55	23.5
7	SS								
	2000.	.2634	6	1.0	1.0	10000.0	9.14	70.42	24.1
2	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

36.	3.479		6	1.0	1.0	10000.0	9.14	8.18	6.7
6	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 7.224  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 10.82  
 CAVITY LENGTH (M) = 14.49  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 7.224  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 10.82  
 CAVITY LENGTH (M) = 14.49  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.479	36.	0.
BLDG. CAVITY-1 H)	7.224	14.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	7.224	14.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0

0:58:24

1

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 9.1440  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = .0000  
 MIN HORIZ BLDG DIM (M) = .0000  
 MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)	
	15.	2.755	1	1.5	1.5	480.0	7.13	4.86	3.6
9	NO 100.	3.383	5	1.0	1.0	10000.0	7.95	10.79	7.4
7	NO 200.	1.377	5	1.0	1.0	10000.0	7.95	21.17	14.0

4	NO								
	300.	.7140	5	1.0	1.0	10000.0	7.95	31.18	19.9
4	NO								
	400.	.4426	5	1.0	1.0	10000.0	7.95	40.86	25.3
0	NO								
	500.	.3058	5	1.0	1.0	10000.0	7.95	50.21	30.2
4	NO								
	600.	.2269	5	1.0	1.0	10000.0	7.95	59.27	34.8
3	NO								
	700.	.1769	5	1.0	1.0	10000.0	7.95	68.06	39.1
1	NO								
	800.	.1430	5	1.0	1.0	10000.0	7.95	76.60	43.1
5	NO								
	900.	.1188	5	1.0	1.0	10000.0	7.95	84.89	46.9
7	NO								
	1000.	.1009	5	1.0	1.0	10000.0	7.95	92.97	50.6
0	NO								
	1100.	.8723E-01	5	1.0	1.0	10000.0	7.95	100.83	54.0
6	NO								
	1200.	.7647E-01	5	1.0	1.0	10000.0	7.95	108.50	57.3
7	NO								
	1300.	.6785E-01	5	1.0	1.0	10000.0	7.95	115.99	60.5
5	NO								
	1400.	.6080E-01	5	1.0	1.0	10000.0	7.95	123.30	63.6
1	NO								
	1500.	.5496E-01	5	1.0	1.0	10000.0	7.95	130.44	66.5
7	NO								
	1600.	.5005E-01	5	1.0	1.0	10000.0	7.95	137.43	69.4
2	NO								
	1700.	.4587E-01	5	1.0	1.0	10000.0	7.95	144.27	72.1
8	NO								
	1800.	.4229E-01	5	1.0	1.0	10000.0	7.95	150.97	74.8
6	NO								
	1900.	.3918E-01	5	1.0	1.0	10000.0	7.95	157.54	77.4
7	NO								
	2000.	.3646E-01	5	1.0	1.0	10000.0	7.95	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 28. 5.114 3 1.0 1.0 320.0 7.95 6.35 5.8  
 1 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- SIMPLE TERRAIN	----- 5.114	----- 28.	----- 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

1

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- SIMPLE TERRAIN	----- 24.01	----- 15.	----- 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*



0  
1

3/24/97

0:57:58

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	9.1440
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB (M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	
	DWASH								
	15.	.3865	1	3.0	3.0	960.0	6.31	4.92	2.3
6	NO 100.	2.938	4	1.0	1.0	320.0	7.95	8.21	4.6
7	NO 200.	2.944	5	1.0	1.0	10000.0	7.95	11.63	6.2

Hyp8.out

5	NO								
	300.	2.807	6	1.0	1.0	10000.0	7.95	11.24	5.6
4	NO								
	400.	2.466	6	1.0	1.0	10000.0	7.95	14.64	7.0
6	NO								
	500.	2.034	6	1.0	1.0	10000.0	7.95	17.97	8.4
1	NO								
	600.	1.667	6	1.0	1.0	10000.0	7.95	21.24	9.6
9	NO								
	700.	1.379	6	1.0	1.0	10000.0	7.95	24.46	10.9
4	NO								
	800.	1.164	6	1.0	1.0	10000.0	7.95	27.64	11.9
8	NO								
	900.	.9968	6	1.0	1.0	10000.0	7.95	30.78	12.9
9	NO								
	1000.	.8639	6	1.0	1.0	10000.0	7.95	33.89	13.9
6	NO								
	1100.	.7595	6	1.0	1.0	10000.0	7.95	36.97	14.8
3	NO								
	1200.	.6741	6	1.0	1.0	10000.0	7.95	40.02	15.6
6	NO								
	1300.	.6032	6	1.0	1.0	10000.0	7.95	43.04	16.4
8	NO								
	1400.	.5437	6	1.0	1.0	10000.0	7.95	46.05	17.2
7	NO								
	1500.	.4932	6	1.0	1.0	10000.0	7.95	49.03	18.0
4	NO								
	1600.	.4499	6	1.0	1.0	10000.0	7.95	52.00	18.7
9	NO								
	1700.	.4125	6	1.0	1.0	10000.0	7.95	54.94	19.5
2	NO								
	1800.	.3799	6	1.0	1.0	10000.0	7.95	57.87	20.2
4	NO								
	1900.	.3514	6	1.0	1.0	10000.0	7.95	60.78	20.9
4	NO								
	2000.	.3262	6	1.0	1.0	10000.0	7.95	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 73. 3.354 3 1.0 1.0 320.0 7.95 9.44 5.6  
 6 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.354	73.	0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

0

3/24/97

1

0:58:25

\*\*\* SCREEN3 MODEL RUN \*\*\*

\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE           =           POINT
EMISSION RATE (G/S)  =           .151000E-02
STACK HEIGHT (M)     =           15.2400
STK INSIDE DIAM (M)  =           1.2190
STK EXIT VELOCITY (M/S) =           .4044
STK GAS EXIT TEMP (K) =           293.0000
AMBIENT AIR TEMP (K) =           293.0000
RECEPTOR HEIGHT (M) =           .0000
URBAN/RURAL OPTION   =           URBAN
BUILDING HEIGHT (M)  =           10.1000
MIN HORIZ BLDG DIM (M) =           15.2400
MAX HORIZ BLDG DIM (M) =           15.2400
    
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	1.683	5	1.0	1.1 10000.0	13.76	10.79	11.7
5	HS							
	200.	.8271	5	1.0	1.1 10000.0	13.76	21.17	18.1

Hyp9.ou2

5	HS								
	300.	.4847	5	1.0	1.1	10000.0	13.76	31.18	23.6
7	HS								
	400.	.3218	5	1.0	1.1	10000.0	13.76	40.85	28.7
3	HS								
	500.	.2319	5	1.0	1.1	10000.0	13.76	50.21	33.4
2	HS								
	600.	.1769	5	1.0	1.1	10000.0	13.76	59.27	37.8
0	HS								
	700.	.1407	5	1.0	1.1	10000.0	13.76	68.06	41.9
1	HS								
	800.	.1154	5	1.0	1.1	10000.0	13.76	76.60	45.8
0	HS								
	900.	.9702E-01	5	1.0	1.1	10000.0	13.76	84.89	49.4
8	HS								
	1000.	.8313E-01	5	1.0	1.1	10000.0	13.76	92.97	52.9
9	HS								
	1100.	.7236E-01	5	1.0	1.1	10000.0	13.76	100.83	56.3
5	HS								
	1200.	.6381E-01	5	1.0	1.1	10000.0	13.76	108.50	59.5
7	HS								
	1300.	.5689E-01	5	1.0	1.1	10000.0	13.76	115.99	62.6
7	HS								
	1400.	.5119E-01	5	1.0	1.1	10000.0	13.76	123.30	65.6
5	HS								
	1500.	.4643E-01	5	1.0	1.1	10000.0	13.76	130.44	68.5
4	HS								
	1600.	.4241E-01	5	1.0	1.1	10000.0	13.76	137.43	71.3
3	HS								
	1700.	.3898E-01	5	1.0	1.1	10000.0	13.76	144.27	74.0
3	HS								
	1800.	.3601E-01	5	1.0	1.1	10000.0	13.76	150.97	76.6
6	HS								
	1900.	.3343E-01	5	1.0	1.1	10000.0	13.76	157.54	79.2
1	HS								
	2000.	.3117E-01	5	1.0	1.1	10000.0	13.76	163.98	81.7
0	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 31. 3.160 6 1.0 1.1 10000.0 13.18 3.50 7.1  
 9 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 6.540  
 CRIT WS @10M (M/S) = 1.78  
 CRIT WS @ HS (M/S) = 1.94  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 12.37  
 CAVITY LENGTH (M) = 15.90  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 6.540  
 CRIT WS @10M (M/S) = 1.78  
 CRIT WS @ HS (M/S) = 1.94  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 12.37  
 CAVITY LENGTH (M) = 15.90  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.160	31.	0.
BLDG. CAVITY-1 H)	6.540	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	6.540	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0:57:58

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	15.2400
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	10.1000
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	Y (M)	Z (M)
)	DWASH							
-	-----	-----	----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.0
0	NA							
	100.	4.091	6	1.0	1.3 10000.0	13.54	4.08	11.7
4	HS							
	200.	2.206	6	1.0	1.3 10000.0	13.54	7.74	13.1

Hyp9.out

2	HS								
	300.	1.519	6	1.0	1.3	10000.0	13.54	11.24	13.9
5	HS								
	400.	1.158	6	1.0	1.3	10000.0	13.54	14.64	14.8
2	HS								
	500.	.9324	6	1.0	1.3	10000.0	13.54	17.97	15.6
6	HS								
	600.	.7774	6	1.0	1.3	10000.0	13.54	21.24	16.4
7	HS								
	700.	.6639	6	1.0	1.3	10000.0	13.54	24.46	17.2
6	HS								
	800.	.5772	6	1.0	1.3	10000.0	13.54	27.64	18.0
3	HS								
	900.	.5087	6	1.0	1.3	10000.0	13.54	30.78	18.7
8	HS								
	1000.	.4532	6	1.0	1.3	10000.0	13.54	33.89	19.5
1	HS								
	1100.	.4075	6	1.0	1.3	10000.0	13.54	36.96	20.2
3	HS								
	1200.	.3692	6	1.0	1.3	10000.0	13.54	40.02	20.9
3	HS								
	1300.	.3367	6	1.0	1.3	10000.0	13.54	43.04	21.6
3	HS								
	1400.	.3153	6	1.0	1.3	10000.0	13.54	46.05	21.5
6	HS								
	1500.	.2912	6	1.0	1.3	10000.0	13.54	49.03	22.1
6	HS								
	1600.	.2702	6	1.0	1.3	10000.0	13.54	52.00	22.7
3	HS								
	1700.	.2516	6	1.0	1.3	10000.0	13.54	54.94	23.2
9	HS								
	1800.	.2352	6	1.0	1.3	10000.0	13.54	57.87	23.8
4	HS								
	1900.	.2205	6	1.0	1.3	10000.0	13.54	60.78	24.3
7	HS								
	2000.	.2074	6	1.0	1.3	10000.0	13.54	63.68	24.9
0	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 31. 7.306 6 1.0 1.3 10000.0 13.01 1.42 7.1  
 9 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 6.540  
 CRIT WS @10M (M/S) = 1.78  
 CRIT WS @ HS (M/S) = 1.94  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 12.37  
 CAVITY LENGTH (M) = 15.90  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 6.540  
 CRIT WS @10M (M/S) = 1.78  
 CRIT WS @ HS (M/S) = 1.94  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 12.37  
 CAVITY LENGTH (M) = 15.90  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.306	31.	0.
BLDG. CAVITY-1 H)	6.540	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	6.540	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

0

3/24/97

1

0:58:25

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 15.2400  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 12.6000  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	1.397	6	1.0	1.1	10000.0	15.24	10.79	11.2
7	SS								
	200.	.7814	5	1.0	1.1	10000.0	15.24	21.17	17.6

Hyp10.ou2

0	SS								
	300.	.4722	5	1.0	1.1	10000.0	15.24	31.18	23.1
7	SS								
	400.	.3171	5	1.0	1.1	10000.0	15.24	40.85	28.2
8	SS								
	500.	.2298	5	1.0	1.1	10000.0	15.24	50.21	33.0
0	SS								
	600.	.1759	5	1.0	1.1	10000.0	15.24	59.27	37.4
0	SS								
	700.	.1401	5	1.0	1.1	10000.0	15.24	68.06	41.5
4	SS								
	800.	.1150	5	1.0	1.1	10000.0	15.24	76.59	45.4
4	SS								
	900.	.9677E-01	5	1.0	1.1	10000.0	15.24	84.89	49.1
4	SS								
	1000.	.8296E-01	5	1.0	1.1	10000.0	15.24	92.97	52.6
7	SS								
	1100.	.7224E-01	5	1.0	1.1	10000.0	15.24	100.83	56.0
4	SS								
	1200.	.6372E-01	5	1.0	1.1	10000.0	15.24	108.50	59.2
7	SS								
	1300.	.5682E-01	5	1.0	1.1	10000.0	15.24	115.99	62.3
8	SS								
	1400.	.5114E-01	5	1.0	1.1	10000.0	15.24	123.30	65.3
8	SS								
	1500.	.4639E-01	5	1.0	1.1	10000.0	15.24	130.44	68.2
7	SS								
	1600.	.4238E-01	5	1.0	1.1	10000.0	15.24	137.43	71.0
7	SS								
	1700.	.3895E-01	5	1.0	1.1	10000.0	15.24	144.27	73.7
8	SS								
	1800.	.3599E-01	5	1.0	1.1	10000.0	15.24	150.97	76.4
2	SS								
	1900.	.3342E-01	5	1.0	1.1	10000.0	15.24	157.54	78.9
8	SS								
	2000.	.3116E-01	5	1.0	1.1	10000.0	15.24	163.98	81.4
7	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 38. 1.846 6 1.0 1.1 10000.0 15.24 4.26 7.7  
 2 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 5.242  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 5.242  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.846	38.	0.
BLDG. CAVITY-1 H)	5.242	19.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	5.242	19.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0:57:59

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	15.2400
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	12.6000
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	HT (M)	Y (M)	Z (M)
)	DWASH							
-	-----	-----	-----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.0
0	NA							
	100.	3.342	6	1.0	1.3 10000.0	15.24	4.07	11.3
1	SS							
	200.	1.945	6	1.0	1.3 10000.0	15.24	7.73	13.8

Hyp10.out

9	SS								
	300.	1.349	6	1.0	1.3	10000.0	15.24	11.23	14.7
1	SS								
	400.	1.036	6	1.0	1.3	10000.0	15.24	14.64	15.5
5	SS								
	500.	.8404	6	1.0	1.3	10000.0	15.24	17.97	16.3
7	SS								
	600.	.7052	6	1.0	1.3	10000.0	15.24	21.24	17.1
6	SS								
	700.	.6058	6	1.0	1.3	10000.0	15.24	24.46	17.9
3	SS								
	800.	.5294	6	1.0	1.3	10000.0	15.24	27.63	18.6
8	SS								
	900.	.4688	6	1.0	1.3	10000.0	15.24	30.78	19.4
2	SS								
	1000.	.4196	6	1.0	1.3	10000.0	15.24	33.88	20.1
4	SS								
	1100.	.3787	6	1.0	1.3	10000.0	15.24	36.96	20.8
5	SS								
	1200.	.3444	6	1.0	1.3	10000.0	15.24	40.01	21.5
4	SS								
	1300.	.3206	6	1.0	1.3	10000.0	15.24	43.04	21.4
8	SS								
	1400.	.2954	6	1.0	1.3	10000.0	15.24	46.05	22.0
9	SS								
	1500.	.2737	6	1.0	1.3	10000.0	15.24	49.03	22.6
6	SS								
	1600.	.2546	6	1.0	1.3	10000.0	15.24	51.99	23.2
2	SS								
	1700.	.2377	6	1.0	1.3	10000.0	15.24	54.94	23.7
7	SS								
	1800.	.2226	6	1.0	1.3	10000.0	15.24	57.87	24.3
1	SS								
	1900.	.2092	6	1.0	1.3	10000.0	15.24	60.78	24.8
4	SS								
	2000.	.1971	6	1.0	1.3	10000.0	15.24	63.68	25.3
6	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 38. 4.211 6 1.0 1.3 10000.0 15.24 1.70 7.7  
 5 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 5.242  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 5.242  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	4.211	38.	0.
BLDG. CAVITY-1 H)	5.242	19.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	5.242	19.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:26

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 15.2400  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 15.2400  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	DWASH							
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	1.496	6	1.0	1.1 10000.0	15.24	11.18	13.9
7	SS							
	200.	.7396	5	1.0	1.1 10000.0	15.24	21.17	20.5

Hyp11.ou2

5	SS								
	300.	.4415	5	1.0	1.1	10000.0	15.24	31.18	25.8
6	SS								
	400.	.2981	5	1.0	1.1	10000.0	15.24	40.85	30.7
6	SS								
	500.	.2177	5	1.0	1.1	10000.0	15.24	50.21	35.3
1	SS								
	600.	.1677	5	1.0	1.1	10000.0	15.24	59.27	39.5
7	SS								
	700.	.1343	5	1.0	1.1	10000.0	15.24	68.06	43.5
8	SS								
	800.	.1108	5	1.0	1.1	10000.0	15.24	76.59	47.3
8	SS								
	900.	.9358E-01	5	1.0	1.1	10000.0	15.24	84.89	50.9
9	SS								
	1000.	.8049E-01	5	1.0	1.1	10000.0	15.24	92.97	54.4
3	SS								
	1100.	.7027E-01	5	1.0	1.1	10000.0	15.24	100.83	57.7
3	SS								
	1200.	.6213E-01	5	1.0	1.1	10000.0	15.24	108.50	60.9
0	SS								
	1300.	.5551E-01	5	1.0	1.1	10000.0	15.24	115.99	63.9
4	SS								
	1400.	.5005E-01	5	1.0	1.1	10000.0	15.24	123.30	66.8
8	SS								
	1500.	.4547E-01	5	1.0	1.1	10000.0	15.24	130.44	69.7
3	SS								
	1600.	.4159E-01	5	1.0	1.1	10000.0	15.24	137.43	72.4
8	SS								
	1700.	.3827E-01	5	1.0	1.1	10000.0	15.24	144.27	75.1
5	SS								
	1800.	.3540E-01	5	1.0	1.1	10000.0	15.24	150.97	77.7
5	SS								
	1900.	.3289E-01	5	1.0	1.1	10000.0	15.24	157.54	80.2
8	SS								
	2000.	.3070E-01	5	1.0	1.1	10000.0	15.24	163.98	82.7
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 46. 1.882 4 1.0 1.1 320.0 15.24 7.63 10.4  
 8 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.882	46.	0.
BLDG. CAVITY-1 H)	4.334	22.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	4.334	22.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

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0:58:00

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 15.2400  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 15.2400  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	1.592	4	1.0	1.1	320.0	15.24	11.18	13.9
2	SS								
	200.	.9237	4	1.0	1.1	320.0	15.24	18.56	19.2

Hyp11.out

0	SS								
	300.	.7247	6	1.0	1.3	10000.0	15.24	20.07	19.0
1	SS								
	400.	.6152	6	1.0	1.3	10000.0	15.24	23.30	19.7
4	SS								
	500.	.5330	6	1.0	1.3	10000.0	15.24	26.50	20.4
5	SS								
	600.	.4689	6	1.0	1.3	10000.0	15.24	29.65	21.1
5	SS								
	700.	.4222	6	1.0	1.3	10000.0	15.24	32.77	21.3
6	SS								
	800.	.3803	6	1.0	1.3	10000.0	15.24	35.86	21.9
9	SS								
	900.	.3456	6	1.0	1.3	10000.0	15.24	38.92	22.5
6	SS								
	1000.	.3162	6	1.0	1.3	10000.0	15.24	41.96	23.1
3	SS								
	1100.	.2911	6	1.0	1.3	10000.0	15.24	44.97	23.6
8	SS								
	1200.	.2693	6	1.0	1.3	10000.0	15.24	47.96	24.2
2	SS								
	1300.	.2502	6	1.0	1.3	10000.0	15.24	50.93	24.7
5	SS								
	1400.	.2334	6	1.0	1.3	10000.0	15.24	53.88	25.2
7	SS								
	1500.	.2185	6	1.0	1.3	10000.0	15.24	56.82	25.7
9	SS								
	1600.	.2052	6	1.0	1.3	10000.0	15.24	59.73	26.2
9	SS								
	1700.	.1933	6	1.0	1.3	10000.0	15.24	62.63	26.7
9	SS								
	1800.	.1864	6	1.0	1.3	10000.0	15.24	65.52	26.4
3	SS								
	1900.	.1764	6	1.0	1.3	10000.0	15.24	68.39	26.9
3	SS								
	2000.	.1675	6	1.0	1.3	10000.0	15.24	71.25	27.3
5	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 46. 2.000 3 1.0 1.0 320.0 15.24 7.63 10.4  
 6 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	2.000	46.	0.
BLDG. CAVITY-1 H)	4.334	22.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	4.334	22.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

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0:58:27

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 15.2400  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = .0000  
 MIN HORIZ BLDG DIM (M) = .0000  
 MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
9	15. NO	.3207E-01	1	2.0	2.1	640.0	12.74	4.86	3.6
0	100. NO	1.211	4	1.0	1.1	320.0	13.80	15.69	13.8
	200.	.8818	5	1.0	1.1	10000.0	13.76	21.17	14.0

Hyp12.ou2

4	NO								
	300.	.5370	5	1.0	1.1	10000.0	13.76	31.18	19.9
3	NO								
	400.	.3535	5	1.0	1.1	10000.0	13.76	40.85	25.3
0	NO								
	500.	.2516	5	1.0	1.1	10000.0	13.76	50.21	30.2
4	NO								
	600.	.1898	5	1.0	1.1	10000.0	13.76	59.27	34.8
2	NO								
	700.	.1496	5	1.0	1.1	10000.0	13.76	68.06	39.1
1	NO								
	800.	.1218	5	1.0	1.1	10000.0	13.76	76.60	43.1
5	NO								
	900.	.1018	5	1.0	1.1	10000.0	13.76	84.89	46.9
7	NO								
	1000.	.8678E-01	5	1.0	1.1	10000.0	13.76	92.97	50.6
0	NO								
	1100.	.7523E-01	5	1.0	1.1	10000.0	13.76	100.83	54.0
6	NO								
	1200.	.6612E-01	5	1.0	1.1	10000.0	13.76	108.50	57.3
7	NO								
	1300.	.5877E-01	5	1.0	1.1	10000.0	13.76	115.99	60.5
5	NO								
	1400.	.5276E-01	5	1.0	1.1	10000.0	13.76	123.30	63.6
1	NO								
	1500.	.4775E-01	5	1.0	1.1	10000.0	13.76	130.44	66.5
7	NO								
	1600.	.4353E-01	5	1.0	1.1	10000.0	13.76	137.43	69.4
2	NO								
	1700.	.3994E-01	5	1.0	1.1	10000.0	13.76	144.27	72.1
8	NO								
	1800.	.3685E-01	5	1.0	1.1	10000.0	13.76	150.97	74.8
6	NO								
	1900.	.3416E-01	5	1.0	1.1	10000.0	13.76	157.54	77.4
7	NO								
	2000.	.3181E-01	5	1.0	1.1	10000.0	13.76	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	49.	1.556	3	1.0	1.1	320.0	13.85	10.89	10.0
0	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- SIMPLE TERRAIN	----- 1.556	----- 49.	----- 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

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0:58:00

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 15.2400  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
6	15.	.1401E-04	1	3.0	3.1	960.0	12.38	4.92	2.3
1	100.	.9587	2	1.0	1.0	320.0	13.98	19.27	10.6
	200.	.8975	4	1.0	1.1	320.0	13.90	15.57	8.5

Hyp12.out

1	NO								
	300.	.8527	4	1.0	1.1	320.0	13.90	22.61	12.1
0	NO								
	400.	.7802	5	1.0	1.2	10000.0	13.71	22.01	10.8
2	NO								
	500.	.6895	6	1.0	1.3	10000.0	13.54	17.97	8.4
0	NO								
	600.	.6982	6	1.0	1.3	10000.0	13.54	21.24	9.6
9	NO								
	700.	.6624	6	1.0	1.3	10000.0	13.54	24.46	10.9
3	NO								
	800.	.6081	6	1.0	1.3	10000.0	13.54	27.64	11.9
8	NO								
	900.	.5540	6	1.0	1.3	10000.0	13.54	30.78	12.9
9	NO								
	1000.	.5036	6	1.0	1.3	10000.0	13.54	33.89	13.9
6	NO								
	1100.	.4585	6	1.0	1.3	10000.0	13.54	36.96	14.8
2	NO								
	1200.	.4187	6	1.0	1.3	10000.0	13.54	40.02	15.6
6	NO								
	1300.	.3836	6	1.0	1.3	10000.0	13.54	43.04	16.4
7	NO								
	1400.	.3526	6	1.0	1.3	10000.0	13.54	46.05	17.2
6	NO								
	1500.	.3253	6	1.0	1.3	10000.0	13.54	49.03	18.0
3	NO								
	1600.	.3010	6	1.0	1.3	10000.0	13.54	52.00	18.7
8	NO								
	1700.	.2795	6	1.0	1.3	10000.0	13.54	54.94	19.5
2	NO								
	1800.	.2603	6	1.0	1.3	10000.0	13.54	57.87	20.2
4	NO								
	1900.	.2430	6	1.0	1.3	10000.0	13.54	60.78	20.9
4	NO								
	2000.	.2276	6	1.0	1.3	10000.0	13.54	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 136. 1.039 3 1.0 1.0 320.0 13.95 16.67 9.9  
 3 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
----- SIMPLE TERRAIN	----- 1.039	----- 136.	----- 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 20.2000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	.4615	5	1.0	1.4	10000.0	28.23	10.79	16.7
8	HS								
	200.	.3298	5	1.0	1.4	10000.0	28.59	21.17	23.4

8	HS								
	300.	.2340	5	1.0	1.4	10000.0	28.59	31.18	29.1
6	HS								
	400.	.1742	5	1.0	1.4	10000.0	28.59	40.85	33.8
2	HS								
	500.	.1356	5	1.0	1.4	10000.0	28.59	50.21	38.1
8	HS								
	600.	.1093	5	1.0	1.4	10000.0	28.59	59.27	42.2
6	HS								
	700.	.9044E-01	5	1.0	1.4	10000.0	28.59	68.06	46.1
3	HS								
	800.	.7650E-01	5	1.0	1.4	10000.0	28.59	76.59	49.8
0	HS								
	900.	.6585E-01	5	1.0	1.4	10000.0	28.59	84.89	53.3
0	HS								
	1000.	.5752E-01	5	1.0	1.4	10000.0	28.59	92.97	56.6
4	HS								
	1100.	.5086E-01	5	1.0	1.4	10000.0	28.59	100.83	59.8
5	HS								
	1200.	.4544E-01	5	1.0	1.4	10000.0	28.59	108.50	62.9
4	HS								
	1300.	.4096E-01	5	1.0	1.4	10000.0	28.59	115.99	65.9
1	HS								
	1400.	.3721E-01	5	1.0	1.4	10000.0	28.59	123.30	68.7
9	HS								
	1500.	.3403E-01	5	1.0	1.4	10000.0	28.59	130.44	71.5
7	HS								
	1600.	.3130E-01	5	1.0	1.4	10000.0	28.59	137.43	74.2
7	HS								
	1700.	.2894E-01	5	1.0	1.4	10000.0	28.59	144.27	76.8
9	HS								
	1800.	.2689E-01	5	1.0	1.4	10000.0	28.59	150.97	79.4
4	HS								
	1900.	.2508E-01	5	1.0	1.4	10000.0	28.59	157.54	81.9
2	HS								
	2000.	.2349E-01	5	1.0	1.4	10000.0	28.59	163.98	84.3
4	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

61.	.5072	6	1.0	1.4	10000.0	28.17	6.74	14.2
3	HS							

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 3.270  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 32.32  
 CAVITY LENGTH (M) = 27.61  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 3.270  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 32.32  
 CAVITY LENGTH (M) = 27.61  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.5072	61.	0.
BLDG. CAVITY-1 H)	3.270	28.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	3.270	28.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:01

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	30.4800
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	20.2000
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
	-----	-----	----	-----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	.9613	6	1.0	1.8	10000.0	27.85	4.07	16.7
8	HS								
	200.	.6988	6	1.0	1.8	10000.0	28.16	7.73	23.4

Hyp13.out

8	HS								
	300.	.4903	6	1.0	1.8	10000.0	28.16	11.23	24.7
6	HS								
	400.	.3784	6	1.0	1.8	10000.0	28.16	14.64	25.2
8	HS								
	500.	.3096	6	1.0	1.8	10000.0	28.16	17.97	25.8
0	HS								
	600.	.2628	6	1.0	1.8	10000.0	28.16	21.24	26.3
0	HS								
	700.	.2287	6	1.0	1.8	10000.0	28.16	24.46	26.8
0	HS								
	800.	.2025	6	1.0	1.8	10000.0	28.16	27.64	26.8
9	HS								
	900.	.1821	6	1.0	1.8	10000.0	28.16	30.78	27.3
2	HS								
	1000.	.1655	6	1.0	1.8	10000.0	28.16	33.89	27.7
2	HS								
	1100.	.1517	6	1.0	1.8	10000.0	28.16	36.96	28.1
3	HS								
	1200.	.1401	6	1.0	1.8	10000.0	28.16	40.02	28.5
2	HS								
	1300.	.1302	6	1.0	1.8	10000.0	28.16	43.04	28.9
1	HS								
	1400.	.1216	6	1.0	1.8	10000.0	28.16	46.05	29.2
9	HS								
	1500.	.1141	6	1.0	1.8	10000.0	28.16	49.03	29.6
7	HS								
	1600.	.1074	6	1.0	1.8	10000.0	28.16	51.99	30.0
4	HS								
	1700.	.1015	6	1.0	1.8	10000.0	28.16	54.94	30.4
1	HS								
	1800.	.9621E-01	6	1.0	1.8	10000.0	28.16	57.87	30.7
7	HS								
	1900.	.9142E-01	6	1.0	1.8	10000.0	28.16	60.78	31.1
3	HS								
	2000.	.8707E-01	6	1.0	1.8	10000.0	28.16	63.68	31.4
8	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 61. 1.036 6 1.0 1.8 10000.0 27.84 2.61 14.2  
 3 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 3.270  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 32.32  
 CAVITY LENGTH (M) = 27.61  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 3.270  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 32.32  
 CAVITY LENGTH (M) = 27.61  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.036	61.	0.
BLDG. CAVITY-1 H)	3.270	28.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	3.270	28.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0:58:28

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 25.3000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	.2791	3	1.0	1.2	320.0	30.48	21.57	20.0
0	SS								
	200.	.2685	6	1.0	1.4	10000.0	30.48	21.17	20.9

Hyp14.ou2

0	SS								
	300.	.2156	6	1.0	1.4	10000.0	30.48	31.18	26.7
7	SS								
	400.	.1674	5	1.0	1.4	10000.0	30.48	40.85	31.5
8	SS								
	500.	.1329	5	1.0	1.4	10000.0	30.48	50.21	36.0
8	SS								
	600.	.1082	5	1.0	1.4	10000.0	30.48	59.27	40.2
9	SS								
	700.	.9010E-01	5	1.0	1.4	10000.0	30.48	68.06	44.2
6	SS								
	800.	.7647E-01	5	1.0	1.4	10000.0	30.48	76.59	48.0
3	SS								
	900.	.6596E-01	5	1.0	1.4	10000.0	30.48	84.89	51.6
0	SS								
	1000.	.5769E-01	5	1.0	1.4	10000.0	30.48	92.97	55.0
2	SS								
	1100.	.5105E-01	5	1.0	1.4	10000.0	30.48	100.83	58.3
0	SS								
	1200.	.4563E-01	5	1.0	1.4	10000.0	30.48	108.50	61.4
4	SS								
	1300.	.4115E-01	5	1.0	1.4	10000.0	30.48	115.99	64.4
7	SS								
	1400.	.3738E-01	5	1.0	1.4	10000.0	30.48	123.30	67.3
9	SS								
	1500.	.3418E-01	5	1.0	1.4	10000.0	30.48	130.44	70.2
2	SS								
	1600.	.3145E-01	5	1.0	1.4	10000.0	30.48	137.43	72.9
6	SS								
	1700.	.2908E-01	5	1.0	1.4	10000.0	30.48	144.27	75.6
2	SS								
	1800.	.2701E-01	5	1.0	1.4	10000.0	30.48	150.97	78.2
0	SS								
	1900.	.2520E-01	5	1.0	1.4	10000.0	30.48	157.54	80.7
1	SS								
	2000.	.2359E-01	5	1.0	1.4	10000.0	30.48	163.98	83.1
6	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

138.	.2852	6	1.0	1.4	10000.0	30.48	14.88	17.3
6	SS							

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 2.611  
  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 2.611  
  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.2852	138.	0.
BLDG. CAVITY-1 H)	2.611	32.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.611	32.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:02

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 25.3000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
0	15.	.0000	0	.0	.0	.00	.00	.0
7	100.	.5605	6	1.0	1.8 10000.0	30.48	4.07	15.1
	200.	.5594	6	1.0	1.8 10000.0	30.48	7.73	20.9

Hyp14.out

9	SS								
	300.	.4183	6	1.0	1.8	10000.0	30.48	11.23	22.9
6	SS								
	400.	.3266	6	1.0	1.8	10000.0	30.48	14.64	23.5
1	SS								
	500.	.2700	6	1.0	1.8	10000.0	30.48	17.97	24.0
6	SS								
	600.	.2313	6	1.0	1.8	10000.0	30.48	21.24	24.5
9	SS								
	700.	.2030	6	1.0	1.8	10000.0	30.48	24.46	25.1
2	SS								
	800.	.1813	6	1.0	1.8	10000.0	30.48	27.63	25.6
3	SS								
	900.	.1640	6	1.0	1.8	10000.0	30.48	30.78	26.1
4	SS								
	1000.	.1499	6	1.0	1.8	10000.0	30.48	33.88	26.6
4	SS								
	1100.	.1373	6	1.0	1.8	10000.0	30.48	36.96	26.5
4	SS								
	1200.	.1275	6	1.0	1.8	10000.0	30.48	40.01	27.0
2	SS								
	1300.	.1190	6	1.0	1.8	10000.0	30.48	43.04	27.4
4	SS								
	1400.	.1116	6	1.0	1.8	10000.0	30.48	46.05	27.8
4	SS								
	1500.	.1050	6	1.0	1.8	10000.0	30.48	49.03	28.2
4	SS								
	1600.	.9925E-01	6	1.0	1.8	10000.0	30.48	51.99	28.6
4	SS								
	1700.	.9408E-01	6	1.0	1.8	10000.0	30.48	54.94	29.0
2	SS								
	1800.	.8942E-01	6	1.0	1.8	10000.0	30.48	57.87	29.4
0	SS								
	1900.	.8520E-01	6	1.0	1.8	10000.0	30.48	60.78	29.7
8	SS								
	2000.	.8136E-01	6	1.0	1.8	10000.0	30.48	63.68	30.1
5	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	144.	.5877	6	1.0	1.8	10000.0	30.48	5.74	17.7
9	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 2.611  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 2.611  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.5877	144.	0.
BLDG. CAVITY-1 H)	2.611	32.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.611	32.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

3/24/97

0

0:58:29

1

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 30.4800  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 30.4800  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	.3855	6	1.0	1.4	10000.0	30.48	10.79	17.1
9	SS								
	200.	.3007	6	1.0	1.4	10000.0	30.48	21.17	23.7

9	SS								
	300.	.2194	6	1.0	1.4	10000.0	30.48	31.18	29.6
6	SS								
	400.	.1655	5	1.0	1.4	10000.0	30.48	40.85	34.2
7	SS								
	500.	.1300	5	1.0	1.4	10000.0	30.48	50.21	38.5
9	SS								
	600.	.1054	5	1.0	1.4	10000.0	30.48	59.27	42.6
6	SS								
	700.	.8770E-01	5	1.0	1.4	10000.0	30.48	68.06	46.5
0	SS								
	800.	.7446E-01	5	1.0	1.4	10000.0	30.48	76.59	50.1
5	SS								
	900.	.6430E-01	5	1.0	1.4	10000.0	30.48	84.89	53.6
3	SS								
	1000.	.5630E-01	5	1.0	1.4	10000.0	30.48	92.97	56.9
6	SS								
	1100.	.4988E-01	5	1.0	1.4	10000.0	30.48	100.83	60.1
6	SS								
	1200.	.4464E-01	5	1.0	1.4	10000.0	30.48	108.50	63.2
4	SS								
	1300.	.4030E-01	5	1.0	1.4	10000.0	30.48	115.99	66.2
0	SS								
	1400.	.3665E-01	5	1.0	1.4	10000.0	30.48	123.30	69.0
7	SS								
	1500.	.3355E-01	5	1.0	1.4	10000.0	30.48	130.44	71.8
4	SS								
	1600.	.3089E-01	5	1.0	1.4	10000.0	30.48	137.43	74.5
3	SS								
	1700.	.2859E-01	5	1.0	1.4	10000.0	30.48	144.27	77.1
4	SS								
	1800.	.2658E-01	5	1.0	1.4	10000.0	30.48	150.97	79.6
9	SS								
	1900.	.2481E-01	5	1.0	1.4	10000.0	30.48	157.54	82.1
6	SS								
	2000.	.2325E-01	5	1.0	1.4	10000.0	30.48	163.98	84.5
8	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	78.	.3969	6	1.0	1.4	10000.0	30.48	8.56	15.8
1	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 2.167  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 2.167  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.3969	78.	0.
BLDG. CAVITY-1 H)	2.167	36.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.167	36.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0

0:58:03

1

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 30.4800  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 30.4800  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
A	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	.4892	4	1.0	1.2	320.0	30.48	9.91	17.0
9	SS								
	200.	.4511	4	1.0	1.2	320.0	30.48	16.61	23.6

Hyp15.out

5	SS								
	300.	.3305	4	1.0	1.2	320.0	30.48	24.23	27.6
2	SS								
	400.	.2607	4	1.0	1.2	320.0	30.48	31.04	30.2
8	SS								
	500.	.2144	4	1.0	1.2	320.0	30.48	37.70	31.4
8	SS								
	600.	.1812	4	1.0	1.2	320.0	30.48	44.24	33.6
5	SS								
	700.	.1561	4	1.0	1.2	320.0	30.48	50.69	35.6
3	SS								
	800.	.1396	6	1.0	1.8	10000.0	30.48	36.84	28.0
4	SS								
	900.	.1292	6	1.0	1.8	10000.0	30.48	39.89	28.4
3	SS								
	1000.	.1203	6	1.0	1.8	10000.0	30.48	42.92	28.8
2	SS								
	1100.	.1126	6	1.0	1.8	10000.0	30.48	45.93	29.2
1	SS								
	1200.	.1058	6	1.0	1.8	10000.0	30.48	48.91	29.5
9	SS								
	1300.	.9985E-01	6	1.0	1.8	10000.0	30.48	51.88	29.9
6	SS								
	1400.	.9451E-01	6	1.0	1.8	10000.0	30.48	54.82	30.3
3	SS								
	1500.	.8972E-01	6	1.0	1.8	10000.0	30.48	57.75	30.6
9	SS								
	1600.	.8538E-01	6	1.0	1.8	10000.0	30.48	60.66	31.0
5	SS								
	1700.	.8145E-01	6	1.0	1.8	10000.0	30.48	63.56	31.4
0	SS								
	1800.	.7786E-01	6	1.0	1.8	10000.0	30.48	66.44	31.7
5	SS								
	1900.	.7457E-01	6	1.0	1.8	10000.0	30.48	69.31	32.1
0	SS								
	2000.	.7154E-01	6	1.0	1.8	10000.0	30.48	72.16	32.4
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 125. .4984 4 1.0 1.2 320.0 30.48 11.65 18.7  
 9 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL

(BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*

CONC (UG/M\*\*3) = 2.167  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*

CONC (UG/M\*\*3) = 2.167  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.4984	125.	0.
BLDG. CAVITY-1 H)	2.167	36.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.167	36.	-- (DIST = CAVITY LENGT

\*\*\*\*\*

\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*

\*\*\*\*\*

0  
1

3/24/97

0:58:29

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) - 9 0	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M) DWASH	(UG/M**3)	STAB	(M/S)	(M/S)	(M) HT (M)	Y (M)	Z (M)
	15.	.6311E-11	2	4.0	4.7	1280.0	27.34	4.86 3.6
	NO 100.	.3162	3	1.0	1.2	320.0	28.80	21.57 20.0
	NO 200.	.2490	4	1.0	1.3	320.0	28.69	30.79 27.2

Hyp16.ou2

0	NO								
	300.	.1979	5	1.0	1.4	10000.0	28.59	31.18	19.9
3	NO								
	400.	.1758	5	1.0	1.4	10000.0	28.59	40.85	25.3
0	NO								
	500.	.1449	5	1.0	1.4	10000.0	28.59	50.21	30.2
4	NO								
	600.	.1190	5	1.0	1.4	10000.0	28.59	59.27	34.8
2	NO								
	700.	.9895E-01	5	1.0	1.4	10000.0	28.59	68.06	39.1
1	NO								
	800.	.8359E-01	5	1.0	1.4	10000.0	28.59	76.59	43.1
5	NO								
	900.	.7170E-01	5	1.0	1.4	10000.0	28.59	84.89	46.9
7	NO								
	1000.	.6235E-01	5	1.0	1.4	10000.0	28.59	92.97	50.6
0	NO								
	1100.	.5488E-01	5	1.0	1.4	10000.0	28.59	100.83	54.0
6	NO								
	1200.	.4882E-01	5	1.0	1.4	10000.0	28.59	108.50	57.3
7	NO								
	1300.	.4382E-01	5	1.0	1.4	10000.0	28.59	115.99	60.5
5	NO								
	1400.	.3965E-01	5	1.0	1.4	10000.0	28.59	123.30	63.6
1	NO								
	1500.	.3613E-01	5	1.0	1.4	10000.0	28.59	130.44	66.5
6	NO								
	1600.	.3313E-01	5	1.0	1.4	10000.0	28.59	137.43	69.4
2	NO								
	1700.	.3055E-01	5	1.0	1.4	10000.0	28.59	144.27	72.1
8	NO								
	1800.	.2830E-01	5	1.0	1.4	10000.0	28.59	150.97	74.8
6	NO								
	1900.	.2634E-01	5	1.0	1.4	10000.0	28.59	157.54	77.4
7	NO								
	2000.	.2460E-01	5	1.0	1.4	10000.0	28.59	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 102. .3165 3 1.0 1.2 320.0 28.80 22.21 20.6  
 0 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.3165	102.	0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

3/24/97

0:58:04

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	30.4800
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)	
7	15.	.0000	1	1.0	1.1	320.0	29.10	4.92	2.3
5	100.	.1347	1	1.0	1.1	320.0	29.10	26.86	13.9
	200.	.2160	2	1.0	1.1	320.0	29.10	36.17	20.2

Hyp16.out

4	NO								
	300.	.2225	3	1.0	1.1	320.0	29.03	34.29	20.3
3	NO								
	400.	.1994	3	1.0	1.1	320.0	29.03	44.65	26.4
5	NO								
	500.	.1765	4	1.0	1.2	320.0	28.91	36.15	18.3
0	NO								
	600.	.1773	4	1.0	1.2	320.0	28.91	42.72	21.2
1	NO								
	700.	.1669	4	1.0	1.2	320.0	28.91	49.19	24.0
4	NO								
	800.	.1526	4	1.0	1.2	320.0	28.91	55.57	26.7
8	NO								
	900.	.1378	4	1.0	1.2	320.0	28.91	61.88	29.4
7	NO								
	1000.	.1240	5	1.0	1.5	10000.0	28.49	50.94	21.6
3	NO								
	1100.	.1181	5	1.0	1.5	10000.0	28.49	55.57	22.9
7	NO								
	1200.	.1119	5	1.0	1.5	10000.0	28.49	60.15	24.2
7	NO								
	1300.	.1057	5	1.0	1.5	10000.0	28.49	64.70	25.5
2	NO								
	1400.	.9967E-01	5	1.0	1.5	10000.0	28.49	69.21	26.7
4	NO								
	1500.	.9396E-01	5	1.0	1.5	10000.0	28.49	73.70	27.9
3	NO								
	1600.	.8860E-01	5	1.0	1.5	10000.0	28.49	78.15	29.0
9	NO								
	1700.	.8576E-01	6	1.0	1.8	10000.0	28.16	54.94	19.5
2	NO								
	1800.	.8445E-01	6	1.0	1.8	10000.0	28.16	57.87	20.2
3	NO								
	1900.	.8283E-01	6	1.0	1.8	10000.0	28.16	60.78	20.9
4	NO								
	2000.	.8101E-01	6	1.0	1.8	10000.0	28.16	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 303. .2226 3 1.0 1.1 320.0 29.03 34.71 20.5  
 8 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.2226	303.	0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*



TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 10.90	CONC (UG/M**3) = 10.90
CRIT WS @10M (M/S) = 1.71	CRIT WS @10M (M/S) = 1.71
CRIT WS @ HS (M/S) = 1.71	CRIT WS @ HS (M/S) = 1.71
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 6.43	CAVITY HT (M) = 6.43
CAVITY LENGTH (M) = 16.37	CAVITY LENGTH (M) = 16.37
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	53.38	19.	9.
BLDG. CAVITY-1 H)	10.90	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	10.90	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0  
1

0:58:07

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 6.0600  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) - 0 2	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB (M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
	NA							
	100.	15.03	6	1.0	1.0 10000.0	.00	4.09	7.8
	HS							
	200.	6.802	6	1.0	1.0 10000.0	.00	7.74	9.1

Hyp21.out

3	HS								
	300.	4.115	6	1.0	1.0	10000.0	.00	11.24	10.3
9	HS								
	400.	2.929	6	1.0	1.0	10000.0	.00	14.64	11.2
1	HS								
	500.	2.185	6	1.0	1.0	10000.0	.00	17.97	12.2
4	HS								
	600.	1.709	6	1.0	1.0	10000.0	.00	21.24	13.2
4	HS								
	700.	1.411	6	1.0	1.0	10000.0	.00	24.46	13.9
2	HS								
	800.	1.176	6	1.0	1.0	10000.0	.00	27.64	14.7
9	HS								
	900.	.9990	6	1.0	1.0	10000.0	.00	30.78	15.6
3	HS								
	1000.	.8625	6	1.0	1.0	10000.0	.00	33.89	16.4
5	HS								
	1100.	.7544	6	1.0	1.0	10000.0	.00	36.97	17.2
4	HS								
	1200.	.6671	6	1.0	1.0	10000.0	.00	40.02	18.0
1	HS								
	1300.	.5953	6	1.0	1.0	10000.0	.00	43.04	18.7
6	HS								
	1400.	.5355	6	1.0	1.0	10000.0	.00	46.05	19.4
9	HS								
	1500.	.4850	6	1.0	1.0	10000.0	.00	49.03	20.2
1	HS								
	1600.	.4420	6	1.0	1.0	10000.0	.00	52.00	20.9
1	HS								
	1700.	.4049	6	1.0	1.0	10000.0	.00	54.94	21.6
1	HS								
	1800.	.3829	6	1.0	1.0	10000.0	.00	57.87	21.6
9	HS								
	1900.	.3550	6	1.0	1.0	10000.0	.00	60.78	22.2
7	HS								
	2000.	.3305	6	1.0	1.0	10000.0	.00	63.68	22.8
4	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

19.	125.2		6	1.0	1.0	10000.0	.00	.93	4.3
7	HS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 10.90

CRIT WS @10M (M/S) = 1.71  
 CRIT WS @ HS (M/S) = 1.71  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 6.43  
 CAVITY LENGTH (M) = 16.37  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 10.90

CRIT WS @10M (M/S) = 1.71  
 CRIT WS @ HS (M/S) = 1.71  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 6.43  
 CAVITY LENGTH (M) = 16.37  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	125.2	19.	9.
BLDG. CAVITY-1 H)	10.90	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	10.90	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

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0:58:30

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	3.0300
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
)	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	HT (M)	Y (M)	Z (M)	
)	DWASH								
-	-----	-----	----	-----	-----	-----	-----	-----	
	15.	112.4	6	1.0	1.0	10000.0	.00	1.68	2.5
4	HS								
	100.	5.163	5	1.0	1.0	10000.0	.00	10.79	8.6
2	HS								
	200.	1.507	5	1.0	1.0	10000.0	.00	21.17	15.0

Hyp17.ou2

7	HS								
	300.	.7386	5	1.0	1.0	10000.0	.00	31.18	20.8
7	HS								
	400.	.4498	5	1.0	1.0	10000.0	.00	40.86	26.1
6	HS								
	500.	.3085	5	1.0	1.0	10000.0	.00	50.21	31.0
3	HS								
	600.	.2280	5	1.0	1.0	10000.0	.00	59.27	35.5
6	HS								
	700.	.1774	5	1.0	1.0	10000.0	.00	68.06	39.8
1	HS								
	800.	.1433	5	1.0	1.0	10000.0	.00	76.60	43.8
0	HS								
	900.	.1190	5	1.0	1.0	10000.0	.00	84.89	47.5
9	HS								
	1000.	.1010	5	1.0	1.0	10000.0	.00	92.97	51.1
9	HS								
	1100.	.8726E-01	5	1.0	1.0	10000.0	.00	100.83	54.6
2	HS								
	1200.	.7649E-01	5	1.0	1.0	10000.0	.00	108.50	57.9
1	HS								
	1300.	.6785E-01	5	1.0	1.0	10000.0	.00	115.99	61.0
7	HS								
	1400.	.6080E-01	5	1.0	1.0	10000.0	.00	123.30	64.1
1	HS								
	1500.	.5495E-01	5	1.0	1.0	10000.0	.00	130.44	67.0
5	HS								
	1600.	.5004E-01	5	1.0	1.0	10000.0	.00	137.43	69.8
9	HS								
	1700.	.4587E-01	5	1.0	1.0	10000.0	.00	144.27	72.6
4	HS								
	1800.	.4228E-01	5	1.0	1.0	10000.0	.00	150.97	75.3
0	HS								
	1900.	.3917E-01	5	1.0	1.0	10000.0	.00	157.54	77.9
0	HS								
	2000.	.3645E-01	5	1.0	1.0	10000.0	.00	163.98	80.4
2	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	112.4	6	1.0	1.0	10000.0	.00	1.68	2.5
4	HS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 21.80  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.03  
 CAVITY LENGTH (M) = 11.81  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 21.80  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 3.03  
 CAVITY LENGTH (M) = 11.81  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	112.4	15.	5.
BLDG. CAVITY-1 H)	21.80	12.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	21.80	12.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0

0:58:04

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	3.0300
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)	
4	15. HS	258.2	6	1.0	1.0	10000.0	.00	.73	2.5
7	100. HS	24.65	6	1.0	1.0	10000.0	.00	4.09	4.7
	200. HS	9.947	6	1.0	1.0	10000.0	.00	7.74	6.2

Hyp17.out

4	HS								
	300.	5.605	6	1.0	1.0	10000.0	.00	11.24	7.6
3	HS								
	400.	3.668	6	1.0	1.0	10000.0	.00	14.64	8.9
5	HS								
	500.	2.617	6	1.0	1.0	10000.0	.00	17.97	10.2
2	HS								
	600.	2.049	6	1.0	1.0	10000.0	.00	21.24	11.0
4	HS								
	700.	1.626	6	1.0	1.0	10000.0	.00	24.46	12.0
9	HS								
	800.	1.329	6	1.0	1.0	10000.0	.00	27.64	13.0
9	HS								
	900.	1.127	6	1.0	1.0	10000.0	.00	30.78	13.8
5	HS								
	1000.	.9629	6	1.0	1.0	10000.0	.00	33.89	14.7
3	HS								
	1100.	.8350	6	1.0	1.0	10000.0	.00	36.97	15.5
7	HS								
	1200.	.7330	6	1.0	1.0	10000.0	.00	40.02	16.3
9	HS								
	1300.	.6500	6	1.0	1.0	10000.0	.00	43.04	17.1
8	HS								
	1400.	.5815	6	1.0	1.0	10000.0	.00	46.05	17.9
5	HS								
	1500.	.5241	6	1.0	1.0	10000.0	.00	49.03	18.7
0	HS								
	1600.	.4755	6	1.0	1.0	10000.0	.00	52.00	19.4
4	HS								
	1700.	.4340	6	1.0	1.0	10000.0	.00	54.94	20.1
6	HS								
	1800.	.3981	6	1.0	1.0	10000.0	.00	57.87	20.8
6	HS								
	1900.	.3669	6	1.0	1.0	10000.0	.00	60.78	21.5
6	HS								
	2000.	.3447	6	1.0	1.0	10000.0	.00	63.68	21.9
0	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

15.	258.2		6	1.0	1.0	10000.0	.00	.73	2.5
4	HS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 21.80	CONC (UG/M**3) = 21.80
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.00	CRIT WS @ HS (M/S) = 1.00
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 3.03	CAVITY HT (M) = 3.03
CAVITY LENGTH (M) = 11.81	CAVITY LENGTH (M) = 11.81
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	258.2	15.	5.
BLDG. CAVITY-1 H)	21.80	12.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	21.80	12.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

0  
1

3/24/97

0:58:31

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	3.7800
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
-	-----	-----	-----	-----	-----	-----	-----	-----	-----
	15.	120.4	5	1.0	1.0	10000.0	.00	1.67	2.3
9	SS								
	100.	5.446	5	1.0	1.0	10000.0	.01	10.79	8.1
8	SS								
	200.	1.547	5	1.0	1.0	10000.0	.01	21.17	14.6

8	SS								
	300.	.7514	5	1.0	1.0	10000.0	.01	31.18	20.5
1	SS								
	400.	.4555	5	1.0	1.0	10000.0	.01	40.85	25.8
3	SS								
	500.	.3115	5	1.0	1.0	10000.0	.01	50.21	30.7
3	SS								
	600.	.2298	5	1.0	1.0	10000.0	.01	59.27	35.2
8	SS								
	700.	.1786	5	1.0	1.0	10000.0	.01	68.06	39.5
4	SS								
	800.	.1441	5	1.0	1.0	10000.0	.01	76.59	43.5
6	SS								
	900.	.1196	5	1.0	1.0	10000.0	.01	84.89	47.3
5	SS								
	1000.	.1014	5	1.0	1.0	10000.0	.01	92.97	50.9
6	SS								
	1100.	.8761E-01	5	1.0	1.0	10000.0	.01	100.83	54.4
1	SS								
	1200.	.7676E-01	5	1.0	1.0	10000.0	.01	108.50	57.7
1	SS								
	1300.	.6807E-01	5	1.0	1.0	10000.0	.01	115.99	60.8
8	SS								
	1400.	.6098E-01	5	1.0	1.0	10000.0	.01	123.30	63.9
2	SS								
	1500.	.5511E-01	5	1.0	1.0	10000.0	.01	130.44	66.8
7	SS								
	1600.	.5017E-01	5	1.0	1.0	10000.0	.01	137.43	69.7
1	SS								
	1700.	.4597E-01	5	1.0	1.0	10000.0	.01	144.27	72.4
6	SS								
	1800.	.4237E-01	5	1.0	1.0	10000.0	.01	150.97	75.1
4	SS								
	1900.	.3925E-01	5	1.0	1.0	10000.0	.01	157.54	77.7
3	SS								
	2000.	.3652E-01	5	1.0	1.0	10000.0	.01	163.98	80.2
6	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

15.	120.4		5	1.0	1.0	10000.0	.00	1.67	2.3
9	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 17.47	CONC (UG/M**3) = 17.47
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.00	CRIT WS @ HS (M/S) = 1.00
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 3.81	CAVITY HT (M) = 3.81
CAVITY LENGTH (M) = 13.28	CAVITY LENGTH (M) = 13.28
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	120.4	15.	5.
BLDG. CAVITY-1 H)	17.47	13.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	17.47	13.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:05

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 4.5720  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 3.7800  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
)	DWASH								
-	15.	285.4	6	1.0	1.0	10000.0	.00	.71	2.3
9	SS								
	100.	25.04	6	1.0	1.0	10000.0	.01	4.07	4.7
2	SS								
	200.	10.03	6	1.0	1.0	10000.0	.01	7.73	6.2

Hyp18.out

0	SS								
	300.	5.638	6	1.0	1.0	10000.0	.01	11.23	7.5
9	SS								
	400.	3.684	6	1.0	1.0	10000.0	.01	14.64	8.9
1	SS								
	500.	2.627	6	1.0	1.0	10000.0	.01	17.97	10.1
8	SS								
	600.	2.056	6	1.0	1.0	10000.0	.01	21.24	11.0
1	SS								
	700.	1.630	6	1.0	1.0	10000.0	.01	24.46	12.0
5	SS								
	800.	1.332	6	1.0	1.0	10000.0	.01	27.63	13.0
6	SS								
	900.	1.130	6	1.0	1.0	10000.0	.01	30.78	13.8
2	SS								
	1000.	.9649	6	1.0	1.0	10000.0	.01	33.88	14.7
0	SS								
	1100.	.8366	6	1.0	1.0	10000.0	.01	36.96	15.5
4	SS								
	1200.	.7342	6	1.0	1.0	10000.0	.01	40.01	16.3
6	SS								
	1300.	.6510	6	1.0	1.0	10000.0	.01	43.04	17.1
5	SS								
	1400.	.5823	6	1.0	1.0	10000.0	.01	46.05	17.9
2	SS								
	1500.	.5248	6	1.0	1.0	10000.0	.01	49.03	18.6
8	SS								
	1600.	.4762	6	1.0	1.0	10000.0	.01	51.99	19.4
1	SS								
	1700.	.4345	6	1.0	1.0	10000.0	.01	54.94	20.1
3	SS								
	1800.	.3986	6	1.0	1.0	10000.0	.01	57.87	20.8
4	SS								
	1900.	.3673	6	1.0	1.0	10000.0	.01	60.78	21.5
3	SS								
	2000.	.3451	6	1.0	1.0	10000.0	.01	63.68	21.8
7	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	285.4	6	1.0	1.0	10000.0	.00	.71	2.3
9	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 17.47	CONC (UG/M**3) = 17.47
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.00	CRIT WS @ HS (M/S) = 1.00
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 3.81	CAVITY HT (M) = 3.81
CAVITY LENGTH (M) = 13.28	CAVITY LENGTH (M) = 13.28
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	285.4	15.	5.
BLDG. CAVITY-1 H)	17.47	13.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	17.47	13.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:31

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 4.5720  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 4.5700  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	20.37	3	1.0	1.0	320.0	.00	7.65	3.0
9	SS								
	100.	3.460	5	1.0	1.0	10000.0	.00	15.53	8.9
4	SS								
	200.	1.216	5	1.0	1.0	10000.0	.00	25.75	15.3

Hyp19.ou2

5	SS								
	300.	.6390	5	1.0	1.0	10000.0	.00	35.60	21.1
3	SS								
	400.	.4035	5	1.0	1.0	10000.0	.00	45.12	26.4
0	SS								
	500.	.2830	5	1.0	1.0	10000.0	.00	54.34	31.2
5	SS								
	600.	.2123	5	1.0	1.0	10000.0	.00	63.28	35.7
7	SS								
	700.	.1670	5	1.0	1.0	10000.0	.00	71.95	40.0
0	SS								
	800.	.1359	5	1.0	1.0	10000.0	.00	80.38	43.9
9	SS								
	900.	.1136	5	1.0	1.0	10000.0	.00	88.57	47.7
6	SS								
	1000.	.9693E-01	5	1.0	1.0	10000.0	.00	96.55	51.3
6	SS								
	1100.	.8410E-01	5	1.0	1.0	10000.0	.00	104.33	54.7
8	SS								
	1200.	.7396E-01	5	1.0	1.0	10000.0	.00	111.91	58.0
7	SS								
	1300.	.6580E-01	5	1.0	1.0	10000.0	.00	119.32	61.2
2	SS								
	1400.	.5911E-01	5	1.0	1.0	10000.0	.00	126.55	64.2
6	SS								
	1500.	.5354E-01	5	1.0	1.0	10000.0	.00	133.63	67.1
9	SS								
	1600.	.4884E-01	5	1.0	1.0	10000.0	.00	140.55	70.0
2	SS								
	1700.	.4484E-01	5	1.0	1.0	10000.0	.00	147.32	72.7
7	SS								
	1800.	.4139E-01	5	1.0	1.0	10000.0	.00	153.96	75.4
3	SS								
	1900.	.3839E-01	5	1.0	1.0	10000.0	.00	160.47	78.0
2	SS								
	2000.	.3577E-01	5	1.0	1.0	10000.0	.00	166.85	80.5
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	20.37	3	1.0	1.0	320.0	.00	7.65	3.0
9	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 14.45	CONC (UG/M**3) = 14.45
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.00	CRIT WS @ HS (M/S) = 1.00
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 4.67	CAVITY HT (M) = 4.67
CAVITY LENGTH (M) = 14.54	CAVITY LENGTH (M) = 14.54
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	20.37	15.	5.
BLDG. CAVITY-1 H)	14.45	15.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	14.45	15.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0

0:58:06

1

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 4.5720  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 4.5700  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
	15.	20.37	1	1.0	1.0	320.0	.00	7.65	3.0
9	SS								
	100.	6.918	6	1.0	1.0	10000.0	.00	11.72	5.9
3	SS								
	200.	4.337	6	1.0	1.0	10000.0	.00	15.11	7.3

3	SS								
	300.	3.008	6	1.0	1.0	10000.0	.00	18.43	8.6
7	SS								
	400.	2.227	6	1.0	1.0	10000.0	.00	21.69	9.9
5	SS								
	500.	1.794	6	1.0	1.0	10000.0	.00	24.91	10.7
6	SS								
	600.	1.447	6	1.0	1.0	10000.0	.00	28.08	11.8
3	SS								
	700.	1.199	6	1.0	1.0	10000.0	.00	31.22	12.8
4	SS								
	800.	1.013	6	1.0	1.0	10000.0	.00	34.32	13.8
2	SS								
	900.	.8881	6	1.0	1.0	10000.0	.00	37.39	14.4
7	SS								
	1000.	.7756	6	1.0	1.0	10000.0	.00	40.44	15.3
2	SS								
	1100.	.6849	6	1.0	1.0	10000.0	.00	43.47	16.1
4	SS								
	1200.	.6105	6	1.0	1.0	10000.0	.00	46.47	16.9
4	SS								
	1300.	.5485	6	1.0	1.0	10000.0	.00	49.45	17.7
2	SS								
	1400.	.4963	6	1.0	1.0	10000.0	.00	52.41	18.4
8	SS								
	1500.	.4518	6	1.0	1.0	10000.0	.00	55.35	19.2
2	SS								
	1600.	.4135	6	1.0	1.0	10000.0	.00	58.28	19.9
4	SS								
	1700.	.3803	6	1.0	1.0	10000.0	.00	61.19	20.6
5	SS								
	1800.	.3513	6	1.0	1.0	10000.0	.00	64.08	21.3
5	SS								
	1900.	.3322	6	1.0	1.0	10000.0	.00	66.96	21.6
1	SS								
	2000.	.3102	6	1.0	1.0	10000.0	.00	69.83	22.1
9	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 15. 20.37 1 1.0 1.0 320.0 .00 7.65 3.0  
 9 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB.

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 14.45  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 4.67  
 CAVITY LENGTH (M) = 14.54  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 14.45  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 4.67  
 CAVITY LENGTH (M) = 14.54  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	20.37	15.	5.
BLDG. CAVITY-1 H)	14.45	15.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	14.45	15.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:32

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
1	15.	233.7	6	1.0	1.0	10000.0	.00	1.68	1.2
2	NO 100.	5.959	5	1.0	1.0	10000.0	.00	10.79	7.4
7	NO 200.	1.617	5	1.0	1.0	10000.0	.00	21.17	14.0

Hyp20.ou2

4	NO								
	300.	.7731	5	1.0	1.0	10000.0	.00	31.18	19.9
4	NO								
	400.	.4650	5	1.0	1.0	10000.0	.00	40.86	25.3
0	NO								
	500.	.3166	5	1.0	1.0	10000.0	.00	50.21	30.2
4	NO								
	600.	.2329	5	1.0	1.0	10000.0	.00	59.27	34.8
3	NO								
	700.	.1805	5	1.0	1.0	10000.0	.00	68.06	39.1
1	NO								
	800.	.1454	5	1.0	1.0	10000.0	.00	76.60	43.1
5	NO								
	900.	.1205	5	1.0	1.0	10000.0	.00	84.89	46.9
7	NO								
	1000.	.1022	5	1.0	1.0	10000.0	.00	92.97	50.6
0	NO								
	1100.	.8818E-01	5	1.0	1.0	10000.0	.00	100.83	54.0
6	NO								
	1200.	.7721E-01	5	1.0	1.0	10000.0	.00	108.50	57.3
7	NO								
	1300.	.6843E-01	5	1.0	1.0	10000.0	.00	115.99	60.5
5	NO								
	1400.	.6128E-01	5	1.0	1.0	10000.0	.00	123.30	63.6
1	NO								
	1500.	.5535E-01	5	1.0	1.0	10000.0	.00	130.44	66.5
7	NO								
	1600.	.5038E-01	5	1.0	1.0	10000.0	.00	137.43	69.4
2	NO								
	1700.	.4615E-01	5	1.0	1.0	10000.0	.00	144.27	72.1
8	NO								
	1800.	.4253E-01	5	1.0	1.0	10000.0	.00	150.97	74.8
6	NO								
	1900.	.3938E-01	5	1.0	1.0	10000.0	.00	157.54	77.4
7	NO								
	2000.	.3664E-01	5	1.0	1.0	10000.0	.00	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	233.7	6	1.0	1.0	10000.0	.00	1.68	1.2
2	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
5.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	233.7	15.	5.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

0  
1

3/24/97

0:58:07

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 4.5720  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 5. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
4	15.	1216.	6	1.0	1.0	10000.0	.00	.73	.5
6	100.	49.71	6	1.0	1.0	10000.0	.00	4.09	2.3
6	200.	15.09	6	1.0	1.0	10000.0	.00	7.74	4.1

Hyp20.out

1	NO								
	300.	7.581	6	1.0	1.0	10000.0	.00	11.24	5.6
4	NO								
	400.	4.649	6	1.0	1.0	10000.0	.00	14.64	7.0
6	NO								
	500.	3.182	6	1.0	1.0	10000.0	.00	17.97	8.4
1	NO								
	600.	2.334	6	1.0	1.0	10000.0	.00	21.24	9.6
9	NO								
	700.	1.797	6	1.0	1.0	10000.0	.00	24.46	10.9
4	NO								
	800.	1.451	6	1.0	1.0	10000.0	.00	27.64	11.9
8	NO								
	900.	1.202	6	1.0	1.0	10000.0	.00	30.78	12.9
9	NO								
	1000.	1.016	6	1.0	1.0	10000.0	.00	33.89	13.9
6	NO								
	1100.	.8770	6	1.0	1.0	10000.0	.00	36.97	14.8
3	NO								
	1200.	.7668	6	1.0	1.0	10000.0	.00	40.02	15.6
6	NO								
	1300.	.6777	6	1.0	1.0	10000.0	.00	43.04	16.4
8	NO								
	1400.	.6045	6	1.0	1.0	10000.0	.00	46.05	17.2
7	NO								
	1500.	.5435	6	1.0	1.0	10000.0	.00	49.03	18.0
4	NO								
	1600.	.4921	6	1.0	1.0	10000.0	.00	52.00	18.7
9	NO								
	1700.	.4482	6	1.0	1.0	10000.0	.00	54.94	19.5
2	NO								
	1800.	.4104	6	1.0	1.0	10000.0	.00	57.87	20.2
4	NO								
	1900.	.3776	6	1.0	1.0	10000.0	.00	60.78	20.9
4	NO								
	2000.	.3490	6	1.0	1.0	10000.0	.00	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	1216.	6	1.0	1.0	10000.0	.00	.73	.5
4	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	-----	-----
5.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	1216.	15.	5.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

3/24/97

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0:58:33

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\*\*\* SCREEN3 MODEL RUN \*\*\*

\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE           =          POINT
EMISSION RATE (G/S)  =      .151000E-02
STACK HEIGHT (M)     =          9.1440
STK INSIDE DIAM (M)  =          1.2190
STK EXIT VELOCITY (M/S) =      .4044
STK GAS EXIT TEMP (K) =      293.0000
AMBIENT AIR TEMP (K) =      293.0000
RECEPTOR HEIGHT (M) =          .0000
URBAN/RURAL OPTION   =          URBAN
BUILDING HEIGHT (M)  =          6.0600
MIN HORIZ BLDG DIM (M) =      15.2400
MAX HORIZ BLDG DIM (M) =      15.2400
    
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	4.465	5	1.0	1.0 10000.0	.00	10.79	9.9
7	HS							
	200.	1.395	5	1.0	1.0 10000.0	.00	21.17	16.2

7	HS								
	300.	.7018	5	1.0	1.0	10000.0	.00	31.18	21.9
6	HS								
	400.	.4332	5	1.0	1.0	10000.0	.00	40.86	27.1
6	HS								
	500.	.2995	5	1.0	1.0	10000.0	.00	50.21	31.9
6	HS								
	600.	.2226	5	1.0	1.0	10000.0	.00	59.27	36.4
3	HS								
	700.	.1738	5	1.0	1.0	10000.0	.00	68.06	40.6
2	HS								
	800.	.1408	5	1.0	1.0	10000.0	.00	76.60	44.5
8	HS								
	900.	.1172	5	1.0	1.0	10000.0	.00	84.89	48.3
2	HS								
	1000.	.9964E-01	5	1.0	1.0	10000.0	.00	92.97	51.8
9	HS								
	1100.	.8621E-01	5	1.0	1.0	10000.0	.00	100.83	55.2
9	HS								
	1200.	.7565E-01	5	1.0	1.0	10000.0	.00	108.50	58.5
5	HS								
	1300.	.6717E-01	5	1.0	1.0	10000.0	.00	115.99	61.6
9	HS								
	1400.	.6024E-01	5	1.0	1.0	10000.0	.00	123.30	64.7
1	HS								
	1500.	.5449E-01	5	1.0	1.0	10000.0	.00	130.44	67.6
2	HS								
	1600.	.4965E-01	5	1.0	1.0	10000.0	.00	137.43	70.4
4	HS								
	1700.	.4553E-01	5	1.0	1.0	10000.0	.00	144.27	73.1
8	HS								
	1800.	.4199E-01	5	1.0	1.0	10000.0	.00	150.97	75.8
3	HS								
	1900.	.3891E-01	5	1.0	1.0	10000.0	.00	157.54	78.4
1	HS								
	2000.	.3623E-01	5	1.0	1.0	10000.0	.00	163.98	80.9
1	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

7	HS								
	19.	53.38	6	1.0	1.0	10000.0	.00	2.20	4.3

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 9.1440  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 7.5600  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)
)	DWASH							
-	-----	-----	-----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.00
0	NA							
	100.	4.755	5	1.0	1.0	10000.0	.00	10.79
7	SS							
	200.	1.443	5	1.0	1.0	10000.0	.00	21.17

4	SS								
	300.	.7177	5	1.0	1.0	10000.0	.00	31.18	21.4
8	SS								
	400.	.4404	5	1.0	1.0	10000.0	.00	40.85	26.7
1	SS								
	500.	.3034	5	1.0	1.0	10000.0	.00	50.21	31.5
5	SS								
	600.	.2250	5	1.0	1.0	10000.0	.00	59.27	36.0
5	SS								
	700.	.1754	5	1.0	1.0	10000.0	.00	68.06	40.2
6	SS								
	800.	.1419	5	1.0	1.0	10000.0	.00	76.59	44.2
3	SS								
	900.	.1180	5	1.0	1.0	10000.0	.00	84.89	48.0
0	SS								
	1000.	.1002	5	1.0	1.0	10000.0	.00	92.97	51.5
8	SS								
	1100.	.8667E-01	5	1.0	1.0	10000.0	.00	100.83	55.0
0	SS								
	1200.	.7602E-01	5	1.0	1.0	10000.0	.00	108.50	58.2
7	SS								
	1300.	.6747E-01	5	1.0	1.0	10000.0	.00	115.99	61.4
2	SS								
	1400.	.6049E-01	5	1.0	1.0	10000.0	.00	123.30	64.4
5	SS								
	1500.	.5469E-01	5	1.0	1.0	10000.0	.00	130.44	67.3
7	SS								
	1600.	.4982E-01	5	1.0	1.0	10000.0	.00	137.43	70.2
0	SS								
	1700.	.4568E-01	5	1.0	1.0	10000.0	.00	144.27	72.9
4	SS								
	1800.	.4211E-01	5	1.0	1.0	10000.0	.00	150.97	75.6
0	SS								
	1900.	.3903E-01	5	1.0	1.0	10000.0	.00	157.54	78.1
8	SS								
	2000.	.3632E-01	5	1.0	1.0	10000.0	.00	163.98	80.6
9	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

23.	42.31		5	1.0	1.0	10000.0	.00	2.63	4.5
7	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 8.737  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 8.44  
 CAVITY LENGTH (M) = 17.73  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 8.737  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 8.44  
 CAVITY LENGTH (M) = 17.73  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	42.31	23.	9.
BLDG. CAVITY-1 H)	8.737	18.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	8.737	18.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE           =           POINT
EMISSION RATE (G/S)  =      .151000E-02
STACK HEIGHT (M)     =           9.1440
STK INSIDE DIAM (M)  =           1.2190
STK EXIT VELOCITY (M/S) =      .4044
STK GAS EXIT TEMP (K) =      293.0000
AMBIENT AIR TEMP (K) =      293.0000
RECEPTOR HEIGHT (M) =           .0000
URBAN/RURAL OPTION   =           RURAL
BUILDING HEIGHT (M)  =           7.5600
MIN HORIZ BLDG DIM (M) =      15.2400
MAX HORIZ BLDG DIM (M) =      15.2400
    
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	14.71	6	1.0	1.0 10000.0	.00	4.07	8.0
3	SS							
	200.	6.661	6	1.0	1.0 10000.0	.00	7.73	9.3

Hyp22.out

4	SS								
	300.	4.040	6	1.0	1.0	10000.0	.00	11.23	10.5
9	SS								
	400.	2.880	6	1.0	1.0	10000.0	.00	14.64	11.4
0	SS								
	500.	2.153	6	1.0	1.0	10000.0	.00	17.97	12.4
3	SS								
	600.	1.687	6	1.0	1.0	10000.0	.00	21.24	13.4
2	SS								
	700.	1.395	6	1.0	1.0	10000.0	.00	24.46	14.0
9	SS								
	800.	1.163	6	1.0	1.0	10000.0	.00	27.63	14.9
5	SS								
	900.	.9895	6	1.0	1.0	10000.0	.00	30.78	15.7
8	SS								
	1000.	.8549	6	1.0	1.0	10000.0	.00	33.88	16.5
9	SS								
	1100.	.7482	6	1.0	1.0	10000.0	.00	36.96	17.3
8	SS								
	1200.	.6619	6	1.0	1.0	10000.0	.00	40.01	18.1
5	SS								
	1300.	.5910	6	1.0	1.0	10000.0	.00	43.04	18.9
0	SS								
	1400.	.5318	6	1.0	1.0	10000.0	.00	46.05	19.6
3	SS								
	1500.	.4819	6	1.0	1.0	10000.0	.00	49.03	20.3
4	SS								
	1600.	.4393	6	1.0	1.0	10000.0	.00	51.99	21.0
4	SS								
	1700.	.4144	6	1.0	1.0	10000.0	.00	54.94	21.1
1	SS								
	1800.	.3814	6	1.0	1.0	10000.0	.00	57.87	21.7
8	SS								
	1900.	.3537	6	1.0	1.0	10000.0	.00	60.78	22.3
6	SS								
	2000.	.3293	6	1.0	1.0	10000.0	.00	63.68	22.9
2	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 23. 102.8 6 1.0 1.0 10000.0 .00 1.08 4.5  
 7 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 8.737	CONC (UG/M**3) = 8.737
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.00	CRIT WS @ HS (M/S) = 1.00
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 8.44	CAVITY HT (M) = 8.44
CAVITY LENGTH (M) = 17.73	CAVITY LENGTH (M) = 17.73
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	102.8	23.	9.
BLDG. CAVITY-1 H)	8.737	18.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	8.737	18.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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0:58:34

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 9.1440  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 9.1440  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)
	DWASH							
-	15.	.0000	0	.0	.0	.0	.00	.00
0	NA							
	100.	3.330	5	1.0	1.0	10000.0	.00	13.02
9	SS							
	200.	1.193	5	1.0	1.0	10000.0	.00	23.32

8	SS								
	300.	.6318	5	1.0	1.0	10000.0	.00	33.26	22.8
8	SS								
	400.	.4005	5	1.0	1.0	10000.0	.00	42.86	28.0
0	SS								
	500.	.2815	5	1.0	1.0	10000.0	.00	52.15	32.7
4	SS								
	600.	.2115	5	1.0	1.0	10000.0	.00	61.15	37.1
6	SS								
	700.	.1665	5	1.0	1.0	10000.0	.00	69.89	41.3
1	SS								
	800.	.1356	5	1.0	1.0	10000.0	.00	78.37	45.2
3	SS								
	900.	.1134	5	1.0	1.0	10000.0	.00	86.62	48.9
4	SS								
	1000.	.9677E-01	5	1.0	1.0	10000.0	.00	94.65	52.4
8	SS								
	1100.	.8397E-01	5	1.0	1.0	10000.0	.00	102.47	55.8
6	SS								
	1200.	.7387E-01	5	1.0	1.0	10000.0	.00	110.10	59.1
0	SS								
	1300.	.6573E-01	5	1.0	1.0	10000.0	.00	117.55	62.2
1	SS								
	1400.	.5905E-01	5	1.0	1.0	10000.0	.00	124.82	65.2
1	SS								
	1500.	.5349E-01	5	1.0	1.0	10000.0	.00	131.94	68.1
1	SS								
	1600.	.4880E-01	5	1.0	1.0	10000.0	.00	138.89	70.9
1	SS								
	1700.	.4480E-01	5	1.0	1.0	10000.0	.00	145.70	73.6
3	SS								
	1800.	.4136E-01	5	1.0	1.0	10000.0	.00	152.37	76.2
7	SS								
	1900.	.3837E-01	5	1.0	1.0	10000.0	.00	158.91	78.8
4	SS								
	2000.	.3574E-01	5	1.0	1.0	10000.0	.00	165.32	81.3
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 28. 10.27 3 1.0 1.0 320.0 .00 7.65 6.2  
 4 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRES DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 7.224  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 10.82  
 CAVITY LENGTH (M) = 14.49  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 7.224  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.00  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 10.82  
 CAVITY LENGTH (M) = 14.49  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	10.27	28.	9.
BLDG. CAVITY-1 H)	7.224	14.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	7.224	14.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0

0:58:09

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	9.1440
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	9.1440
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
	-----	-----	-----	-----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	3.636	6	1.0	1.0	10000.0	.00	12.43	10.6
4	SS								
	200.	2.603	6	1.0	1.0	10000.0	.00	15.80	11.6

8	SS								
	300.	1.980	6	1.0	1.0	10000.0	.00	19.11	12.7
0	SS								
	400.	1.571	6	1.0	1.0	10000.0	.00	22.36	13.6
8	SS								
	500.	1.307	6	1.0	1.0	10000.0	.00	25.57	14.3
9	SS								
	600.	1.098	6	1.0	1.0	10000.0	.00	28.73	15.2
4	SS								
	700.	.9392	6	1.0	1.0	10000.0	.00	31.86	16.0
6	SS								
	800.	.8153	6	1.0	1.0	10000.0	.00	34.96	16.8
6	SS								
	900.	.7164	6	1.0	1.0	10000.0	.00	38.03	17.6
4	SS								
	1000.	.6359	6	1.0	1.0	10000.0	.00	41.07	18.4
0	SS								
	1100.	.5694	6	1.0	1.0	10000.0	.00	44.09	19.1
5	SS								
	1200.	.5137	6	1.0	1.0	10000.0	.00	47.09	19.8
7	SS								
	1300.	.4664	6	1.0	1.0	10000.0	.00	50.06	20.5
8	SS								
	1400.	.4260	6	1.0	1.0	10000.0	.00	53.02	21.2
8	SS								
	1500.	.4045	6	1.0	1.0	10000.0	.00	55.96	21.2
3	SS								
	1600.	.3731	6	1.0	1.0	10000.0	.00	58.88	21.8
8	SS								
	1700.	.3464	6	1.0	1.0	10000.0	.00	61.79	22.4
6	SS								
	1800.	.3228	6	1.0	1.0	10000.0	.00	64.68	23.0
2	SS								
	1900.	.3018	6	1.0	1.0	10000.0	.00	67.55	23.5
7	SS								
	2000.	.2830	6	1.0	1.0	10000.0	.00	70.42	24.1
2	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 28. 10.27 2 1.0 1.0 320.0 .00 7.65 6.2

4 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 7.224	CONC (UG/M**3) = 7.224
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.00	CRIT WS @ HS (M/S) = 1.00
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 10.82	CAVITY HT (M) = 10.82
CAVITY LENGTH (M) = 14.49	CAVITY LENGTH (M) = 14.49
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	10.27	28.	9.
BLDG. CAVITY-1 H)	7.224	14.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	7.224	14.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

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0:58:35

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	Y (M)	Z (M)	
)	DWASH								
-	-----	-----	-----	-----	-----	-----	-----	-----	
	15.	233.7	6	1.0	1.0	10000.0	.00	1.68	1.2
2	NO								
	100.	5.959	5	1.0	1.0	10000.0	.00	10.79	7.4
7	NO								
	200.	1.617	5	1.0	1.0	10000.0	.00	21.17	14.0

4	NO								
	300.	.7731	5	1.0	1.0	10000.0	.00	31.18	19.9
4	NO								
	400.	.4650	5	1.0	1.0	10000.0	.00	40.86	25.3
0	NO								
	500.	.3166	5	1.0	1.0	10000.0	.00	50.21	30.2
4	NO								
	600.	.2329	5	1.0	1.0	10000.0	.00	59.27	34.8
3	NO								
	700.	.1805	5	1.0	1.0	10000.0	.00	68.06	39.1
1	NO								
	800.	.1454	5	1.0	1.0	10000.0	.00	76.60	43.1
5	NO								
	900.	.1205	5	1.0	1.0	10000.0	.00	84.89	46.9
7	NO								
	1000.	.1022	5	1.0	1.0	10000.0	.00	92.97	50.6
0	NO								
	1100.	.8818E-01	5	1.0	1.0	10000.0	.00	100.83	54.0
6	NO								
	1200.	.7721E-01	5	1.0	1.0	10000.0	.00	108.50	57.3
7	NO								
	1300.	.6843E-01	5	1.0	1.0	10000.0	.00	115.99	60.5
5	NO								
	1400.	.6128E-01	5	1.0	1.0	10000.0	.00	123.30	63.6
1	NO								
	1500.	.5535E-01	5	1.0	1.0	10000.0	.00	130.44	66.5
7	NO								
	1600.	.5038E-01	5	1.0	1.0	10000.0	.00	137.43	69.4
2	NO								
	1700.	.4615E-01	5	1.0	1.0	10000.0	.00	144.27	72.1
8	NO								
	1800.	.4253E-01	5	1.0	1.0	10000.0	.00	150.97	74.8
6	NO								
	1900.	.3938E-01	5	1.0	1.0	10000.0	.00	157.54	77.4
7	NO								
	2000.	.3664E-01	5	1.0	1.0	10000.0	.00	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

15.	233.7		6	1.0	1.0	10000.0	.00	1.68	1.2
2	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	233.7	15.	9.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

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3/24/97

0:58:10

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 9.1440  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
)	DWASH								
-	15.	1216.	6	1.0	1.0	10000.0	.00	.73	.5
4	NO 100.	49.71	6	1.0	1.0	10000.0	.00	4.09	2.3
6	NO 200.	15.09	6	1.0	1.0	10000.0	.00	7.74	4.1

1	NO								
	300.	7.581	6	1.0	1.0	10000.0	.00	11.24	5.6
4	NO								
	400.	4.649	6	1.0	1.0	10000.0	.00	14.64	7.0
6	NO								
	500.	3.182	6	1.0	1.0	10000.0	.00	17.97	8.4
1	NO								
	600.	2.334	6	1.0	1.0	10000.0	.00	21.24	9.6
9	NO								
	700.	1.797	6	1.0	1.0	10000.0	.00	24.46	10.9
4	NO								
	800.	1.451	6	1.0	1.0	10000.0	.00	27.64	11.9
8	NO								
	900.	1.202	6	1.0	1.0	10000.0	.00	30.78	12.9
9	NO								
	1000.	1.016	6	1.0	1.0	10000.0	.00	33.89	13.9
6	NO								
	1100.	.8770	6	1.0	1.0	10000.0	.00	36.97	14.8
3	NO								
	1200.	.7668	6	1.0	1.0	10000.0	.00	40.02	15.6
6	NO								
	1300.	.6777	6	1.0	1.0	10000.0	.00	43.04	16.4
8	NO								
	1400.	.6045	6	1.0	1.0	10000.0	.00	46.05	17.2
7	NO								
	1500.	.5435	6	1.0	1.0	10000.0	.00	49.03	18.0
4	NO								
	1600.	.4921	6	1.0	1.0	10000.0	.00	52.00	18.7
9	NO								
	1700.	.4482	6	1.0	1.0	10000.0	.00	54.94	19.5
2	NO								
	1800.	.4104	6	1.0	1.0	10000.0	.00	57.87	20.2
4	NO								
	1900.	.3776	6	1.0	1.0	10000.0	.00	60.78	20.9
4	NO								
	2000.	.3490	6	1.0	1.0	10000.0	.00	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

4	NO	15.	1216.	6	1.0	1.0	10000.0	.00	.73	.5
---	----	-----	-------	---	-----	-----	---------	-----	-----	----

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
9.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	1216.	15.	9.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

3/24/97

0:58:36

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 15.2400  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 10.1000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
-	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	3.341	5	1.0	1.1	10000.0	.00	10.79	11.7
5	HS								
	200.	1.102	5	1.0	1.1	10000.0	.00	21.17	18.1

Hyp25.ou2

5	HS								
	300.	.5738	5	1.0	1.1	10000.0	.00	31.18	23.6
7	HS								
	400.	.3608	5	1.0	1.1	10000.0	.00	40.85	28.7
3	HS								
	500.	.2524	5	1.0	1.1	10000.0	.00	50.21	33.4
2	HS								
	600.	.1891	5	1.0	1.1	10000.0	.00	59.27	37.8
0	HS								
	700.	.1485	5	1.0	1.1	10000.0	.00	68.06	41.9
1	HS								
	800.	.1208	5	1.0	1.1	10000.0	.00	76.60	45.8
0	HS								
	900.	.1008	5	1.0	1.1	10000.0	.00	84.89	49.4
8	HS								
	1000.	.8598E-01	5	1.0	1.1	10000.0	.00	92.97	52.9
9	HS								
	1100.	.7455E-01	5	1.0	1.1	10000.0	.00	100.83	56.3
5	HS								
	1200.	.6553E-01	5	1.0	1.1	10000.0	.00	108.50	59.5
7	HS								
	1300.	.5827E-01	5	1.0	1.1	10000.0	.00	115.99	62.6
7	HS								
	1400.	.5233E-01	5	1.0	1.1	10000.0	.00	123.30	65.6
5	HS								
	1500.	.4738E-01	5	1.0	1.1	10000.0	.00	130.44	68.5
4	HS								
	1600.	.4321E-01	5	1.0	1.1	10000.0	.00	137.43	71.3
3	HS								
	1700.	.3966E-01	5	1.0	1.1	10000.0	.00	144.27	74.0
3	HS								
	1800.	.3660E-01	5	1.0	1.1	10000.0	.00	150.97	76.6
6	HS								
	1900.	.3394E-01	5	1.0	1.1	10000.0	.00	157.54	79.2
1	HS								
	2000.	.3162E-01	5	1.0	1.1	10000.0	.00	163.98	81.7
0	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

31.	17.52	6	1.0	1.1	10000.0	.00	3.50	7.1
9	HS							

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 6.540	CONC (UG/M**3) = 6.540
CRIT WS @10M (M/S) = 1.78	CRIT WS @10M (M/S) = 1.78
CRIT WS @ HS (M/S) = 1.94	CRIT WS @ HS (M/S) = 1.94
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 12.37	CAVITY HT (M) = 12.37
CAVITY LENGTH (M) = 15.90	CAVITY LENGTH (M) = 15.90
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	17.52	31.	15.
BLDG. CAVITY-1 H)	6.540	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	6.540	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

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0:58:10

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 15.2400  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 10.1000  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	7.950	6	1.0	1.3	10000.0	.00	4.08	11.7
4	HS								
	200.	3.758	6	1.0	1.3	10000.0	.00	7.74	13.1

Hyp25.out

2	HS								
	300.	2.432	6	1.0	1.3	10000.0	.00	11.24	13.9
5	HS								
	400.	1.757	6	1.0	1.3	10000.0	.00	14.64	14.8
2	HS								
	500.	1.355	6	1.0	1.3	10000.0	.00	17.97	15.6
6	HS								
	600.	1.090	6	1.0	1.3	10000.0	.00	21.24	16.4
7	HS								
	700.	.9031	6	1.0	1.3	10000.0	.00	24.46	17.2
6	HS								
	800.	.7651	6	1.0	1.3	10000.0	.00	27.64	18.0
3	HS								
	900.	.6596	6	1.0	1.3	10000.0	.00	30.78	18.7
8	HS								
	1000.	.5766	6	1.0	1.3	10000.0	.00	33.89	19.5
1	HS								
	1100.	.5098	6	1.0	1.3	10000.0	.00	36.96	20.2
3	HS								
	1200.	.4551	6	1.0	1.3	10000.0	.00	40.02	20.9
3	HS								
	1300.	.4096	6	1.0	1.3	10000.0	.00	43.04	21.6
3	HS								
	1400.	.3840	6	1.0	1.3	10000.0	.00	46.05	21.5
6	HS								
	1500.	.3509	6	1.0	1.3	10000.0	.00	49.03	22.1
6	HS								
	1600.	.3226	6	1.0	1.3	10000.0	.00	52.00	22.7
3	HS								
	1700.	.2980	6	1.0	1.3	10000.0	.00	54.94	23.2
9	HS								
	1800.	.2764	6	1.0	1.3	10000.0	.00	57.87	23.8
4	HS								
	1900.	.2573	6	1.0	1.3	10000.0	.00	60.78	24.3
7	HS								
	2000.	.2404	6	1.0	1.3	10000.0	.00	63.68	24.9
0	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 31. 38.77 6 1.0 1.3 10000.0 .00 1.42 7.1  
 9 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 6.540  
 CRIT WS @10M (M/S) = 1.78  
 CRIT WS @ HS (M/S) = 1.94  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 12.37  
 CAVITY LENGTH (M) = 15.90  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 6.540  
 CRIT WS @10M (M/S) = 1.78  
 CRIT WS @ HS (M/S) = 1.94  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 12.37  
 CAVITY LENGTH (M) = 15.90  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	38.77	31.	15.
BLDG. CAVITY-1 H)	6.540	16.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	6.540	16.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0  
1

0:58:36

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 15.2400  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 12.6000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
	100.	3.486	5	1.0	1.1 10000.0	.00	10.79	11.2
7	SS							
	200.	1.137	5	1.0	1.1 10000.0	.00	21.17	17.6

Hyp26.ou2

0	SS								
	300.	.5862	5	1.0	1.1	10000.0	.00	31.18	23.1
7	SS								
	400.	.3667	5	1.0	1.1	10000.0	.00	40.85	28.2
8	SS								
	500.	.2557	5	1.0	1.1	10000.0	.00	50.21	33.0
0	SS								
	600.	.1911	5	1.0	1.1	10000.0	.00	59.27	37.4
0	SS								
	700.	.1498	5	1.0	1.1	10000.0	.00	68.06	41.5
4	SS								
	800.	.1217	5	1.0	1.1	10000.0	.00	76.59	45.4
4	SS								
	900.	.1015	5	1.0	1.1	10000.0	.00	84.89	49.1
4	SS								
	1000.	.8651E-01	5	1.0	1.1	10000.0	.00	92.97	52.6
7	SS								
	1100.	.7496E-01	5	1.0	1.1	10000.0	.00	100.83	56.0
4	SS								
	1200.	.6586E-01	5	1.0	1.1	10000.0	.00	108.50	59.2
7	SS								
	1300.	.5854E-01	5	1.0	1.1	10000.0	.00	115.99	62.3
8	SS								
	1400.	.5255E-01	5	1.0	1.1	10000.0	.00	123.30	65.3
8	SS								
	1500.	.4756E-01	5	1.0	1.1	10000.0	.00	130.44	68.2
7	SS								
	1600.	.4337E-01	5	1.0	1.1	10000.0	.00	137.43	71.0
7	SS								
	1700.	.3979E-01	5	1.0	1.1	10000.0	.00	144.27	73.7
8	SS								
	1800.	.3671E-01	5	1.0	1.1	10000.0	.00	150.97	76.4
2	SS								
	1900.	.3404E-01	5	1.0	1.1	10000.0	.00	157.54	78.9
8	SS								
	2000.	.3171E-01	5	1.0	1.1	10000.0	.00	163.98	81.4
7	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 38. 13.32 5 1.0 1.1 10000.0 .00 4.26 7.7  
 2 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 5.242

CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 5.242

CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	13.32	38.	15.
BLDG. CAVITY-1 H)	5.242	19.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	5.242	19.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*



0

3/24/97

1

0:58:11

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 15.2400  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 12.6000  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	8.281	6	1.0	1.3 10000.0	.00	4.07	11.3	
1	SS								
	200.	3.552	6	1.0	1.3 10000.0	.00	7.73	13.8	

Hyp26.out

9	SS								
	300.	2.308	6	1.0	1.3	10000.0	.00	11.23	14.7
1	SS								
	400.	1.675	6	1.0	1.3	10000.0	.00	14.64	15.5
5	SS								
	500.	1.297	6	1.0	1.3	10000.0	.00	17.97	16.3
7	SS								
	600.	1.046	6	1.0	1.3	10000.0	.00	21.24	17.1
6	SS								
	700.	.8694	6	1.0	1.3	10000.0	.00	24.46	17.9
3	SS								
	800.	.7384	6	1.0	1.3	10000.0	.00	27.63	18.6
8	SS								
	900.	.6379	6	1.0	1.3	10000.0	.00	30.78	19.4
2	SS								
	1000.	.5586	6	1.0	1.3	10000.0	.00	33.88	20.1
4	SS								
	1100.	.4948	6	1.0	1.3	10000.0	.00	36.96	20.8
5	SS								
	1200.	.4424	6	1.0	1.3	10000.0	.00	40.01	21.5
4	SS								
	1300.	.4123	6	1.0	1.3	10000.0	.00	43.04	21.4
8	SS								
	1400.	.3748	6	1.0	1.3	10000.0	.00	46.05	22.0
9	SS								
	1500.	.3431	6	1.0	1.3	10000.0	.00	49.03	22.6
6	SS								
	1600.	.3157	6	1.0	1.3	10000.0	.00	51.99	23.2
2	SS								
	1700.	.2919	6	1.0	1.3	10000.0	.00	54.94	23.7
7	SS								
	1800.	.2710	6	1.0	1.3	10000.0	.00	57.87	24.3
1	SS								
	1900.	.2525	6	1.0	1.3	10000.0	.00	60.78	24.8
4	SS								
	2000.	.2361	6	1.0	1.3	10000.0	.00	63.68	25.3
6	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 38. 29.93 6 1.0 1.3 10000.0 .00 1.70 7.7  
 5 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 5.242  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 5.242  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 16.78  
 CAVITY LENGTH (M) = 19.27  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	29.93	38.	15.
BLDG. CAVITY-1 H)	5.242	19.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	5.242	19.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:37

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 15.2400  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 15.2400  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)
	DWASH							
	15.	.0000	0	.0	.0	.0	.00	.00
0	NA							
	100.	2.714	5	1.0	1.1 10000.0	.00	11.18	13.9
6	SS							
	200.	.9737	5	1.0	1.1 10000.0	.00	21.17	20.5

5	SS								
	300.	.5252	5	1.0	1.1	10000.0	.00	31.18	25.8
6	SS								
	400.	.3371	5	1.0	1.1	10000.0	.00	40.85	30.7
6	SS								
	500.	.2389	5	1.0	1.1	10000.0	.00	50.21	35.3
1	SS								
	600.	.1806	5	1.0	1.1	10000.0	.00	59.27	39.5
7	SS								
	700.	.1428	5	1.0	1.1	10000.0	.00	68.06	43.5
8	SS								
	800.	.1167	5	1.0	1.1	10000.0	.00	76.59	47.3
8	SS								
	900.	.9786E-01	5	1.0	1.1	10000.0	.00	84.89	50.9
9	SS								
	1000.	.8370E-01	5	1.0	1.1	10000.0	.00	92.97	54.4
3	SS								
	1100.	.7277E-01	5	1.0	1.1	10000.0	.00	100.83	57.7
3	SS								
	1200.	.6411E-01	5	1.0	1.1	10000.0	.00	108.50	60.9
0	SS								
	1300.	.5711E-01	5	1.0	1.1	10000.0	.00	115.99	63.9
4	SS								
	1400.	.5136E-01	5	1.0	1.1	10000.0	.00	123.30	66.8
8	SS								
	1500.	.4657E-01	5	1.0	1.1	10000.0	.00	130.44	69.7
3	SS								
	1600.	.4252E-01	5	1.0	1.1	10000.0	.00	137.43	72.4
8	SS								
	1700.	.3907E-01	5	1.0	1.1	10000.0	.00	144.27	75.1
5	SS								
	1800.	.3609E-01	5	1.0	1.1	10000.0	.00	150.97	77.7
5	SS								
	1900.	.3349E-01	5	1.0	1.1	10000.0	.00	157.54	80.2
8	SS								
	2000.	.3122E-01	5	1.0	1.1	10000.0	.00	163.98	82.7
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 46. 5.493 4 1.0 1.1 320.0 .00 7.63 10.4  
 8 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.493	46.	15.
BLDG. CAVITY-1 H)	4.334	22.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	4.334	22.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:12

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE           =           POINT
EMISSION RATE (G/S)  =           .151000E-02
STACK HEIGHT (M)     =           15.2400
STK INSIDE DIAM (M)  =           1.2190
STK EXIT VELOCITY (M/S) =           .4044
STK GAS EXIT TEMP (K) =           293.0000
AMBIENT AIR TEMP (K) =           293.0000
RECEPTOR HEIGHT (M) =           .0000
URBAN/RURAL OPTION   =           RURAL
BUILDING HEIGHT (M)  =           15.2400
MIN HORIZ BLDG DIM (M) =           15.2400
MAX HORIZ BLDG DIM (M) =           15.2400
    
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	HT (M)	Y (M)	Z (M)	
	DWASH								
	15.	.0000	0	.0	.0	.00	.00	.0	
0	NA								
	100.	2.900	4	1.0	1.1	320.0	.00	11.18	13.9
2	SS								
	200.	1.266	4	1.0	1.1	320.0	.00	18.56	19.2

Hyp27.out

0	SS								
	300.	.9994	6	1.0	1.3	10000.0	.00	20.07	19.0
1	SS								
	400.	.8288	6	1.0	1.3	10000.0	.00	23.30	19.7
4	SS								
	500.	.7035	6	1.0	1.3	10000.0	.00	26.50	20.4
5	SS								
	600.	.6079	6	1.0	1.3	10000.0	.00	29.65	21.1
5	SS								
	700.	.5445	6	1.0	1.3	10000.0	.00	32.77	21.3
6	SS								
	800.	.4835	6	1.0	1.3	10000.0	.00	35.86	21.9
9	SS								
	900.	.4341	6	1.0	1.3	10000.0	.00	38.92	22.5
6	SS								
	1000.	.3929	6	1.0	1.3	10000.0	.00	41.96	23.1
3	SS								
	1100.	.3580	6	1.0	1.3	10000.0	.00	44.97	23.6
8	SS								
	1200.	.3282	6	1.0	1.3	10000.0	.00	47.96	24.2
2	SS								
	1300.	.3024	6	1.0	1.3	10000.0	.00	50.93	24.7
5	SS								
	1400.	.2799	6	1.0	1.3	10000.0	.00	53.88	25.2
7	SS								
	1500.	.2602	6	1.0	1.3	10000.0	.00	56.82	25.7
9	SS								
	1600.	.2427	6	1.0	1.3	10000.0	.00	59.73	26.2
9	SS								
	1700.	.2272	6	1.0	1.3	10000.0	.00	62.63	26.7
9	SS								
	1800.	.2201	6	1.0	1.3	10000.0	.00	65.52	26.4
3	SS								
	1900.	.2070	6	1.0	1.3	10000.0	.00	68.39	26.9
3	SS								
	2000.	.1956	6	1.0	1.3	10000.0	.00	71.25	27.3
5	SS								

	MAXIMUM 1-HR CONCENTRATION AT OR BEYOND					15. M:			
	46.	5.865	3	1.0	1.0	320.0	.00	7.63	10.4
6	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 4.334  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.09  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 21.89  
 CAVITY LENGTH (M) = 22.43  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.865	46.	15.
BLDG. CAVITY-1 H)	4.334	22.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	4.334	22.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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0  
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0:58:38

\*\*\* SCREEN3 MODEL RUN \*\*\*

\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 15.2400  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = .0000  
 MIN HORIZ BLDG DIM (M) = .0000  
 MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)	
	15.	207.1	6	1.0	1.1	10000.0	.00	1.68	1.2
2	NO 100.	5.254	5	1.0	1.1	10000.0	.00	10.79	7.4
7	NO 200.	1.425	5	1.0	1.1	10000.0	.00	21.17	14.0

4	NO								
	300.	.6814	5	1.0	1.1	10000.0	.00	31.18	19.9
3	NO								
	400.	.4098	5	1.0	1.1	10000.0	.00	40.85	25.3
0	NO								
	500.	.2790	5	1.0	1.1	10000.0	.00	50.21	30.2
4	NO								
	600.	.2052	5	1.0	1.1	10000.0	.00	59.27	34.8
2	NO								
	700.	.1591	5	1.0	1.1	10000.0	.00	68.06	39.1
1	NO								
	800.	.1282	5	1.0	1.1	10000.0	.00	76.60	43.1
5	NO								
	900.	.1062	5	1.0	1.1	10000.0	.00	84.89	46.9
7	NO								
	1000.	.9005E-01	5	1.0	1.1	10000.0	.00	92.97	50.6
0	NO								
	1100.	.7771E-01	5	1.0	1.1	10000.0	.00	100.83	54.0
6	NO								
	1200.	.6804E-01	5	1.0	1.1	10000.0	.00	108.50	57.3
7	NO								
	1300.	.6031E-01	5	1.0	1.1	10000.0	.00	115.99	60.5
5	NO								
	1400.	.5400E-01	5	1.0	1.1	10000.0	.00	123.30	63.6
1	NO								
	1500.	.4878E-01	5	1.0	1.1	10000.0	.00	130.44	66.5
7	NO								
	1600.	.4440E-01	5	1.0	1.1	10000.0	.00	137.43	69.4
2	NO								
	1700.	.4067E-01	5	1.0	1.1	10000.0	.00	144.27	72.1
8	NO								
	1800.	.3748E-01	5	1.0	1.1	10000.0	.00	150.97	74.8
6	NO								
	1900.	.3471E-01	5	1.0	1.1	10000.0	.00	157.54	77.4
7	NO								
	2000.	.3229E-01	5	1.0	1.1	10000.0	.00	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

15.	207.1		6	1.0	1.1	10000.0	.00	1.68	1.2
2	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	207.1	15.	15.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 15.2400  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 15. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
1	15.	1011.	6	1.0	1.3	10000.0	.00	.72
2	NO 100.	39.74	6	1.0	1.3	10000.0	.00	4.08
5	NO 200.	12.00	6	1.0	1.3	10000.0	.00	7.74

Hyp28.out

1	NO								
	300.	6.021	6	1.0	1.3	10000.0	.00	11.24	5.6
3	NO								
	400.	3.690	6	1.0	1.3	10000.0	.00	14.64	7.0
6	NO								
	500.	2.525	6	1.0	1.3	10000.0	.00	17.97	8.4
0	NO								
	600.	1.852	6	1.0	1.3	10000.0	.00	21.24	9.6
9	NO								
	700.	1.425	6	1.0	1.3	10000.0	.00	24.46	10.9
3	NO								
	800.	1.151	6	1.0	1.3	10000.0	.00	27.64	11.9
8	NO								
	900.	.9538	6	1.0	1.3	10000.0	.00	30.78	12.9
9	NO								
	1000.	.8061	6	1.0	1.3	10000.0	.00	33.89	13.9
6	NO								
	1100.	.6957	6	1.0	1.3	10000.0	.00	36.96	14.8
2	NO								
	1200.	.6083	6	1.0	1.3	10000.0	.00	40.02	15.6
6	NO								
	1300.	.5376	6	1.0	1.3	10000.0	.00	43.04	16.4
7	NO								
	1400.	.4795	6	1.0	1.3	10000.0	.00	46.05	17.2
6	NO								
	1500.	.4312	6	1.0	1.3	10000.0	.00	49.03	18.0
3	NO								
	1600.	.3903	6	1.0	1.3	10000.0	.00	52.00	18.7
8	NO								
	1700.	.3555	6	1.0	1.3	10000.0	.00	54.94	19.5
2	NO								
	1800.	.3255	6	1.0	1.3	10000.0	.00	57.87	20.2
4	NO								
	1900.	.2995	6	1.0	1.3	10000.0	.00	60.78	20.9
4	NO								
	2000.	.2768	6	1.0	1.3	10000.0	.00	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	1011.	6	1.0	1.3	10000.0	.00	.72	.5
2	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
15.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	1011.	15.	15.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 20.2000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	1.900	5	1.0	1.4	10000.0	.00	10.79	16.7
8	HS								
	200.	.6920	5	1.0	1.4	10000.0	.00	21.17	23.4

8	HS								
	300.	.3783	5	1.0	1.4	10000.0	.00	31.18	29.1
6	HS								
	400.	.2490	5	1.0	1.4	10000.0	.00	40.85	33.8
2	HS								
	500.	.1795	5	1.0	1.4	10000.0	.00	50.21	38.1
8	HS								
	600.	.1373	5	1.0	1.4	10000.0	.00	59.27	42.2
6	HS								
	700.	.1096	5	1.0	1.4	10000.0	.00	68.06	46.1
3	HS								
	800.	.9020E-01	5	1.0	1.4	10000.0	.00	76.59	49.8
0	HS								
	900.	.7604E-01	5	1.0	1.4	10000.0	.00	84.89	53.3
0	HS								
	1000.	.6534E-01	5	1.0	1.4	10000.0	.00	92.97	56.6
4	HS								
	1100.	.5701E-01	5	1.0	1.4	10000.0	.00	100.83	59.8
5	HS								
	1200.	.5038E-01	5	1.0	1.4	10000.0	.00	108.50	62.9
4	HS								
	1300.	.4500E-01	5	1.0	1.4	10000.0	.00	115.99	65.9
1	HS								
	1400.	.4057E-01	5	1.0	1.4	10000.0	.00	123.30	68.7
9	HS								
	1500.	.3685E-01	5	1.0	1.4	10000.0	.00	130.44	71.5
7	HS								
	1600.	.3371E-01	5	1.0	1.4	10000.0	.00	137.43	74.2
7	HS								
	1700.	.3101E-01	5	1.0	1.4	10000.0	.00	144.27	76.8
9	HS								
	1800.	.2869E-01	5	1.0	1.4	10000.0	.00	150.97	79.4
4	HS								
	1900.	.2666E-01	5	1.0	1.4	10000.0	.00	157.54	81.9
2	HS								
	2000.	.2488E-01	5	1.0	1.4	10000.0	.00	163.98	84.3
4	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

61.	3.662	6	1.0	1.4	10000.0	.00	6.74	14.2
3	HS							

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 3.270  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 32.32  
 CAVITY LENGTH (M) = 27.61  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 3.270  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 32.32  
 CAVITY LENGTH (M) = 27.61  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.662	61.	30.
BLDG. CAVITY-1 H)	3.270	28.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	3.270	28.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

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0:58:13

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = 20.2000  
MIN HORIZ BLDG DIM (M) = 15.2400  
MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	DWASH								
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	3.811	6	1.0	1.8 10000.0	.00	4.07	16.7	
8	HS								
	200.	1.434	6	1.0	1.8 10000.0	.00	7.73	23.4	

Hyp29.out

8	HS								
	300.	.9360	6	1.0	1.8	10000.0	.00	11.23	24.7
6	HS								
	400.	.7035	6	1.0	1.8	10000.0	.00	14.64	25.2
8	HS								
	500.	.5618	6	1.0	1.8	10000.0	.00	17.97	25.8
0	HS								
	600.	.4662	6	1.0	1.8	10000.0	.00	21.24	26.3
0	HS								
	700.	.3973	6	1.0	1.8	10000.0	.00	24.46	26.8
0	HS								
	800.	.3504	6	1.0	1.8	10000.0	.00	27.64	26.8
9	HS								
	900.	.3097	6	1.0	1.8	10000.0	.00	30.78	27.3
2	HS								
	1000.	.2772	6	1.0	1.8	10000.0	.00	33.89	27.7
2	HS								
	1100.	.2505	6	1.0	1.8	10000.0	.00	36.96	28.1
3	HS								
	1200.	.2282	6	1.0	1.8	10000.0	.00	40.02	28.5
2	HS								
	1300.	.2093	6	1.0	1.8	10000.0	.00	43.04	28.9
1	HS								
	1400.	.1930	6	1.0	1.8	10000.0	.00	46.05	29.2
9	HS								
	1500.	.1790	6	1.0	1.8	10000.0	.00	49.03	29.6
7	HS								
	1600.	.1667	6	1.0	1.8	10000.0	.00	51.99	30.0
4	HS								
	1700.	.1559	6	1.0	1.8	10000.0	.00	54.94	30.4
1	HS								
	1800.	.1462	6	1.0	1.8	10000.0	.00	57.87	30.7
7	HS								
	1900.	.1376	6	1.0	1.8	10000.0	.00	60.78	31.1
3	HS								
	2000.	.1299	6	1.0	1.8	10000.0	.00	63.68	31.4
8	HS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

61.	7.137		6	1.0	1.8	10000.0	.00	2.61	14.2
3	HS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 3.270	CONC (UG/M**3) = 3.270
CRIT WS @10M (M/S) = 1.00	CRIT WS @10M (M/S) = 1.00
CRIT WS @ HS (M/S) = 1.25	CRIT WS @ HS (M/S) = 1.25
DILUTION WS (M/S) = 1.00	DILUTION WS (M/S) = 1.00
CAVITY HT (M) = 32.32	CAVITY HT (M) = 32.32
CAVITY LENGTH (M) = 27.61	CAVITY LENGTH (M) = 27.61
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.137	61.	30.
BLDG. CAVITY-1 H)	3.270	28.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	3.270	28.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:39

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 30.4800  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 25.3000  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M) DWASH	(UG/M**3)	STAB	(M/S)	(M/S)	(M) HT (M)	Y (M)	Z (M)
-	15.	.0000	0	.0	.0	.00	.00	.0
0	NA							
9	100.	2.114	5	1.0	1.4 10000.0	.00	10.79	15.0
	SS 200.	.7782	5	1.0	1.4 10000.0	.00	21.17	20.8

8	SS								
	300.	.4124	5	1.0	1.4	10000.0	.00	31.18	26.7
5	SS								
	400.	.2666	5	1.0	1.4	10000.0	.00	40.85	31.5
8	SS								
	500.	.1899	5	1.0	1.4	10000.0	.00	50.21	36.0
8	SS								
	600.	.1441	5	1.0	1.4	10000.0	.00	59.27	40.2
9	SS								
	700.	.1142	5	1.0	1.4	10000.0	.00	68.06	44.2
6	SS								
	800.	.9353E-01	5	1.0	1.4	10000.0	.00	76.59	48.0
3	SS								
	900.	.7854E-01	5	1.0	1.4	10000.0	.00	84.89	51.6
0	SS								
	1000.	.6726E-01	5	1.0	1.4	10000.0	.00	92.97	55.0
2	SS								
	1100.	.5853E-01	5	1.0	1.4	10000.0	.00	100.83	58.3
0	SS								
	1200.	.5161E-01	5	1.0	1.4	10000.0	.00	108.50	61.4
4	SS								
	1300.	.4601E-01	5	1.0	1.4	10000.0	.00	115.99	64.4
7	SS								
	1400.	.4141E-01	5	1.0	1.4	10000.0	.00	123.30	67.3
9	SS								
	1500.	.3756E-01	5	1.0	1.4	10000.0	.00	130.44	70.2
2	SS								
	1600.	.3431E-01	5	1.0	1.4	10000.0	.00	137.43	72.9
6	SS								
	1700.	.3154E-01	5	1.0	1.4	10000.0	.00	144.27	75.6
2	SS								
	1800.	.2914E-01	5	1.0	1.4	10000.0	.00	150.97	78.2
0	SS								
	1900.	.2706E-01	5	1.0	1.4	10000.0	.00	157.54	80.7
1	SS								
	2000.	.2523E-01	5	1.0	1.4	10000.0	.00	163.98	83.1
6	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

65.	3.731		5	1.0	1.4	10000.0	.00	7.17	13.1
2	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 2.611

CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 2.611

CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.731	65.	30.
BLDG. CAVITY-1 H)	2.611	32.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.611	32.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0  
1

0:58:14

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	30.4800
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	25.3000
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
-	-----	-----	----	-----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	4.218	6	1.0	1.8	10000.0	.00	4.07	15.1
7	SS								
	200.	1.605	6	1.0	1.8	10000.0	.00	7.73	20.9

Hyp30.out

9	SS								
	300.	1.010	6	1.0	1.8	10000.0	.00	11.23	22.9
6	SS								
	400.	.7566	6	1.0	1.8	10000.0	.00	14.64	23.5
1	SS								
	500.	.6025	6	1.0	1.8	10000.0	.00	17.97	24.0
6	SS								
	600.	.4986	6	1.0	1.8	10000.0	.00	21.24	24.5
9	SS								
	700.	.4239	6	1.0	1.8	10000.0	.00	24.46	25.1
2	SS								
	800.	.3676	6	1.0	1.8	10000.0	.00	27.63	25.6
3	SS								
	900.	.3237	6	1.0	1.8	10000.0	.00	30.78	26.1
4	SS								
	1000.	.2885	6	1.0	1.8	10000.0	.00	33.88	26.6
4	SS								
	1100.	.2655	6	1.0	1.8	10000.0	.00	36.96	26.5
4	SS								
	1200.	.2408	6	1.0	1.8	10000.0	.00	40.01	27.0
2	SS								
	1300.	.2205	6	1.0	1.8	10000.0	.00	43.04	27.4
4	SS								
	1400.	.2031	6	1.0	1.8	10000.0	.00	46.05	27.8
4	SS								
	1500.	.1880	6	1.0	1.8	10000.0	.00	49.03	28.2
4	SS								
	1600.	.1749	6	1.0	1.8	10000.0	.00	51.99	28.6
4	SS								
	1700.	.1633	6	1.0	1.8	10000.0	.00	54.94	29.0
2	SS								
	1800.	.1530	6	1.0	1.8	10000.0	.00	57.87	29.4
0	SS								
	1900.	.1439	6	1.0	1.8	10000.0	.00	60.78	29.7
8	SS								
	2000.	.1356	6	1.0	1.8	10000.0	.00	63.68	30.1
5	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

65.	7.268		6	1.0	1.8	10000.0	.00	2.77	13.1
9	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 2.611  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 2.611  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 43.80  
 CAVITY LENGTH (M) = 32.19  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.268	65.	30.
BLDG. CAVITY-1 H)	2.611	32.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.611	32.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

0:58:40

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	30.4800
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	30.4800
MIN HORIZ BLDG DIM (M)	=	15.2400
MAX HORIZ BLDG DIM (M)	=	15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

	DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
A	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
)	DWASH								
-	-----	-----	----	-----	-----	-----	-----	-----	-----
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	1.857	5	1.0	1.4	10000.0	.00	10.79	17.1
8	SS								
	200.	.6837	5	1.0	1.4	10000.0	.00	21.17	23.7

Hyp31.ou2

7	SS								
	300.	.3722	5	1.0	1.4	10000.0	.00	31.18	29.6
4	SS								
	400.	.2458	5	1.0	1.4	10000.0	.00	40.85	34.2
7	SS								
	500.	.1776	5	1.0	1.4	10000.0	.00	50.21	38.5
9	SS								
	600.	.1361	5	1.0	1.4	10000.0	.00	59.27	42.6
6	SS								
	700.	.1087	5	1.0	1.4	10000.0	.00	68.06	46.5
0	SS								
	800.	.8956E-01	5	1.0	1.4	10000.0	.00	76.59	50.1
5	SS								
	900.	.7556E-01	5	1.0	1.4	10000.0	.00	84.89	53.6
3	SS								
	1000.	.6497E-01	5	1.0	1.4	10000.0	.00	92.97	56.9
6	SS								
	1100.	.5672E-01	5	1.0	1.4	10000.0	.00	100.83	60.1
6	SS								
	1200.	.5014E-01	5	1.0	1.4	10000.0	.00	108.50	63.2
4	SS								
	1300.	.4481E-01	5	1.0	1.4	10000.0	.00	115.99	66.2
0	SS								
	1400.	.4040E-01	5	1.0	1.4	10000.0	.00	123.30	69.0
7	SS								
	1500.	.3671E-01	5	1.0	1.4	10000.0	.00	130.44	71.8
4	SS								
	1600.	.3359E-01	5	1.0	1.4	10000.0	.00	137.43	74.5
3	SS								
	1700.	.3091E-01	5	1.0	1.4	10000.0	.00	144.27	77.1
4	SS								
	1800.	.2860E-01	5	1.0	1.4	10000.0	.00	150.97	79.6
9	SS								
	1900.	.2658E-01	5	1.0	1.4	10000.0	.00	157.54	82.1
6	SS								
	2000.	.2481E-01	5	1.0	1.4	10000.0	.00	163.98	84.5
8	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:  
 65. 3.058 5 1.0 1.4 10000.0 .00 7.63 14.9  
 4 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*

\*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)

\*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 2.167

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 2.167

CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	3.058	65.	30.
BLDG. CAVITY-1 H)	2.167	36.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.167	36.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

Hyp31.out

5	SS								
	300.	.6076	4	1.0	1.2	320.0	.00	24.23	27.6
2	SS								
	400.	.4327	4	1.0	1.2	320.0	.00	31.04	30.2
8	SS								
	500.	.3535	6	1.0	1.8	10000.0	.00	27.51	26.7
8	SS								
	600.	.3120	6	1.0	1.8	10000.0	.00	30.65	27.2
2	SS								
	700.	.2791	6	1.0	1.8	10000.0	.00	33.76	27.6
3	SS								
	800.	.2521	6	1.0	1.8	10000.0	.00	36.84	28.0
4	SS								
	900.	.2295	6	1.0	1.8	10000.0	.00	39.89	28.4
3	SS								
	1000.	.2105	6	1.0	1.8	10000.0	.00	42.92	28.8
2	SS								
	1100.	.1941	6	1.0	1.8	10000.0	.00	45.93	29.2
1	SS								
	1200.	.1799	6	1.0	1.8	10000.0	.00	48.91	29.5
9	SS								
	1300.	.1675	6	1.0	1.8	10000.0	.00	51.88	29.9
6	SS								
	1400.	.1566	6	1.0	1.8	10000.0	.00	54.82	30.3
3	SS								
	1500.	.1469	6	1.0	1.8	10000.0	.00	57.75	30.6
9	SS								
	1600.	.1382	6	1.0	1.8	10000.0	.00	60.66	31.0
5	SS								
	1700.	.1305	6	1.0	1.8	10000.0	.00	63.56	31.4
0	SS								
	1800.	.1234	6	1.0	1.8	10000.0	.00	66.44	31.7
5	SS								
	1900.	.1171	6	1.0	1.8	10000.0	.00	69.31	32.1
0	SS								
	2000.	.1112	6	1.0	1.8	10000.0	.00	72.16	32.4
4	SS								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

65.	3.634		4	1.0	1.2	320.0	.00	7.63	14.8
6	SS								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

3/24/97

0

0:58:15

1

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 30.4800  
 STK INSIDE DIAM (M) = 1.2190  
 STK EXIT VELOCITY (M/S) = .4044  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 30.4800  
 MIN HORIZ BLDG DIM (M) = 15.2400  
 MAX HORIZ BLDG DIM (M) = 15.2400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A	DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGM Z (M)
	15.	.0000	0	.0	.0	.0	.00	.00	.0
0	NA								
	100.	2.401	4	1.0	1.2	320.0	.00	9.91	17.0
9	SS								
	200.	1.035	4	1.0	1.2	320.0	.00	16.61	23.6

3/24/97

0:58:15

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .151000E-02  
STACK HEIGHT (M) = 30.4800  
STK INSIDE DIAM (M) = 1.2190  
STK EXIT VELOCITY (M/S) = .4044  
STK GAS EXIT TEMP (K) = 293.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = .0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM
	(M)	(UG/M**3)	STAB (M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	DWASH							
	15.	718.3	6	1.0	1.8	10000.0	.00	.71 .5
1	NO							
	100.	27.45	6	1.0	1.8	10000.0	.00	4.07 2.3
3	NO							
	200.	8.215	6	1.0	1.8	10000.0	.00	7.73 4.1

Hyp32.out

0	NO								
	300.	4.117	6	1.0	1.8	10000.0	.00	11.23	5.6
3	NO								
	400.	2.522	6	1.0	1.8	10000.0	.00	14.64	7.0
5	NO								
	500.	1.726	6	1.0	1.8	10000.0	.00	17.97	8.4
0	NO								
	600.	1.266	6	1.0	1.8	10000.0	.00	21.24	9.6
9	NO								
	700.	.9739	6	1.0	1.8	10000.0	.00	24.46	10.9
3	NO								
	800.	.7866	6	1.0	1.8	10000.0	.00	27.64	11.9
8	NO								
	900.	.6516	6	1.0	1.8	10000.0	.00	30.78	12.9
8	NO								
	1000.	.5507	6	1.0	1.8	10000.0	.00	33.89	13.9
5	NO								
	1100.	.4753	6	1.0	1.8	10000.0	.00	36.96	14.8
2	NO								
	1200.	.4155	6	1.0	1.8	10000.0	.00	40.02	15.6
6	NO								
	1300.	.3673	6	1.0	1.8	10000.0	.00	43.04	16.4
7	NO								
	1400.	.3276	6	1.0	1.8	10000.0	.00	46.05	17.2
6	NO								
	1500.	.2945	6	1.0	1.8	10000.0	.00	49.03	18.0
3	NO								
	1600.	.2666	6	1.0	1.8	10000.0	.00	51.99	18.7
8	NO								
	1700.	.2428	6	1.0	1.8	10000.0	.00	54.94	19.5
2	NO								
	1800.	.2224	6	1.0	1.8	10000.0	.00	57.87	20.2
3	NO								
	1900.	.2046	6	1.0	1.8	10000.0	.00	60.78	20.9
4	NO								
	2000.	.1891	6	1.0	1.8	10000.0	.00	63.68	21.6
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

15.	718.3	6	1.0	1.8	10000.0	.00	.71	.5
1	NO							

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	169.2	15.	30.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

Hyp32.ou2

4	NO								
	300.	.5535	5	1.0	1.4	10000.0	.00	31.18	19.9
3	NO								
	400.	.3329	5	1.0	1.4	10000.0	.00	40.85	25.3
0	NO								
	500.	.2266	5	1.0	1.4	10000.0	.00	50.21	30.2
4	NO								
	600.	.1667	5	1.0	1.4	10000.0	.00	59.27	34.8
2	NO								
	700.	.1292	5	1.0	1.4	10000.0	.00	68.06	39.1
1	NO								
	800.	.1041	5	1.0	1.4	10000.0	.00	76.59	43.1
5	NO								
	900.	.8629E-01	5	1.0	1.4	10000.0	.00	84.89	46.9
7	NO								
	1000.	.7314E-01	5	1.0	1.4	10000.0	.00	92.97	50.6
0	NO								
	1100.	.6312E-01	5	1.0	1.4	10000.0	.00	100.83	54.0
6	NO								
	1200.	.5527E-01	5	1.0	1.4	10000.0	.00	108.50	57.3
7	NO								
	1300.	.4899E-01	5	1.0	1.4	10000.0	.00	115.99	60.5
5	NO								
	1400.	.4387E-01	5	1.0	1.4	10000.0	.00	123.30	63.6
1	NO								
	1500.	.3962E-01	5	1.0	1.4	10000.0	.00	130.44	66.5
6	NO								
	1600.	.3606E-01	5	1.0	1.4	10000.0	.00	137.43	69.4
2	NO								
	1700.	.3304E-01	5	1.0	1.4	10000.0	.00	144.27	72.1
8	NO								
	1800.	.3044E-01	5	1.0	1.4	10000.0	.00	150.97	74.8
6	NO								
	1900.	.2819E-01	5	1.0	1.4	10000.0	.00	157.54	77.4
7	NO								
	2000.	.2623E-01	5	1.0	1.4	10000.0	.00	163.98	80.0
0	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 15. M:

	15.	169.2	6	1.0	1.4	10000.0	.00	1.68	1.2
1	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
 \* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
 \*\*\*\*\*

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
30.	15.	2000.

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = 2.167  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = 2.167  
 CRIT WS @10M (M/S) = 1.00  
 CRIT WS @ HS (M/S) = 1.25  
 DILUTION WS (M/S) = 1.00  
 CAVITY HT (M) = 55.94  
 CAVITY LENGTH (M) = 36.31  
 ALONGWIND DIM (M) = 15.24

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.634	65.	30.
BLDG. CAVITY-1 H)	2.167	36.	-- (DIST = CAVITY LENGT
BLDG. CAVITY-2 H)	2.167	36.	-- (DIST = CAVITY LENGT

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

3/24/97

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0:58:41

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\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

HYPOTHETICAL FACILITY - WORST CASE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.151000E-02
STACK HEIGHT (M)	=	30.4800
STK INSIDE DIAM (M)	=	1.2190
STK EXIT VELOCITY (M/S)	=	.4044
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	URBAN
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 1000.0000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .061 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 30. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	15.	169.2	6	1.0	1.4	10000.0	.00	1.68	1.2
1	NO								
	100.	4.273	5	1.0	1.4	10000.0	.00	10.79	7.4
6	NO								
	200.	1.158	5	1.0	1.4	10000.0	.00	21.17	14.0

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0

1

0:58:43

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

REPRESENTATIVE FACILITY - CONSERVATIVE EMISSIONS - URBAN

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 10.9730  
 STK INSIDE DIAM (M) = .6780  
 STK EXIT VELOCITY (M/S) = 18.6931  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = URBAN  
 BUILDING HEIGHT (M) = 7.6200  
 MIN HORIZ BLDG DIM (M) = 121.9200  
 MAX HORIZ BLDG DIM (M) = 121.9200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 14300.000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = 40.157 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A ) )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	
	DWASH								
	229.	.3111	6	1.0	1.0	10000.0	26.65	24.48	16.4
0	NO								
	300.	.3102	6	1.0	1.0	10000.0	26.65	31.50	20.4
3	NO								
	400.	.2585	6	1.0	1.0	10000.0	26.65	41.10	25.6

TERRAIN HT (M)	DISTANCE RANGE (M)	
-----	-----	-----
30.	15.	2000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	718.3	15.	30.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

3/24/97

0:58:18

\*\*\* SCREEN3 MODEL RUN \*\*\*  
 \*\*\* VERSION DATED 96043 \*\*\*

REPRESENTATIVE FACILITY - CONSERVATIVE EMISSIONS - RURAL

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
 EMISSION RATE (G/S) = .151000E-02  
 STACK HEIGHT (M) = 10.9730  
 STK INSIDE DIAM (M) = .6780  
 STK EXIT VELOCITY (M/S) = 18.6931  
 STK GAS EXIT TEMP (K) = 293.0000  
 AMBIENT AIR TEMP (K) = 293.0000  
 RECEPTOR HEIGHT (M) = .0000  
 URBAN/RURAL OPTION = RURAL  
 BUILDING HEIGHT (M) = 7.6200  
 MIN HORIZ BLDG DIM (M) = 121.9200  
 MAX HORIZ BLDG DIM (M) = 121.9200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM  
 VOLUME FLOW RATE = 14300.000 (ACFM)

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = 40.157 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
 \*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
 \*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

A )	DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGM	
	(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)
	DWASH								
	229.	.1884	4	5.0	5.1	1600.0	14.14	17.60	9.5
5	SS								
	300.	.1879	5	5.0	5.2	10000.0	13.97	16.89	9.1
6	SS								
	400.	.1738	5	5.0	5.2	10000.0	13.97	22.01	11.2

Repl.out

4	SS								
	500.	.1511	5	4.5	4.6	10000.0	15.01	27.02	12.9
7	SS								
	600.	.1783	5	1.0	1.0	10000.0	28.15	32.31	15.4
9	NO								
	700.	.1915	5	1.0	1.0	10000.0	28.15	37.10	17.2
3	NO								
	800.	.1942	5	1.0	1.0	10000.0	28.15	41.84	18.9
2	NO								
	900.	.1905	5	1.0	1.0	10000.0	28.15	46.53	20.5
7	NO								
	1000.	.1832	5	1.0	1.0	10000.0	28.15	51.17	22.1
8	NO								
	1100.	.1823	6	1.0	1.1	10000.0	26.53	37.23	15.4
7	NO								
	1200.	.1847	6	1.0	1.1	10000.0	26.53	40.26	16.2
8	NO								
	1300.	.1847	6	1.0	1.1	10000.0	26.53	43.27	17.0
6	NO								
	1400.	.1830	6	1.0	1.1	10000.0	26.53	46.26	17.8
2	NO								
	1500.	.1801	6	1.0	1.1	10000.0	26.53	49.23	18.5
7	NO								
	1600.	.1763	6	1.0	1.1	10000.0	26.53	52.18	19.3
0	NO								
	1700.	.1720	6	1.0	1.1	10000.0	26.53	55.12	20.0
1	NO								
	1800.	.1673	6	1.0	1.1	10000.0	26.53	58.04	20.7
2	NO								
	1900.	.1624	6	1.0	1.1	10000.0	26.53	60.94	21.4
0	NO								
	2000.	.1575	6	1.0	1.1	10000.0	26.53	63.83	22.0
8	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 229. M:  
 784. .1943 5 1.0 1.0 10000.0 28.15 41.13 18.6  
 7 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

9	NO								
	500.	.2075	6	1.0	1.0	10000.0	26.65	50.41	30.5
7	NO								
	600.	.1679	6	1.0	1.0	10000.0	26.65	59.44	35.1
1	NO								
	700.	.1384	6	1.0	1.0	10000.0	26.65	68.21	39.3
7	NO								
	800.	.1163	6	1.0	1.0	10000.0	26.65	76.72	43.3
8	NO								
	900.	.9936E-01	6	1.0	1.0	10000.0	26.65	85.01	47.1
8	NO								
	1000.	.8616E-01	6	1.0	1.0	10000.0	26.65	93.07	50.7
9	NO								
	1100.	.7567E-01	6	1.0	1.0	10000.0	26.65	100.93	54.2
4	NO								
	1200.	.6720E-01	6	1.0	1.0	10000.0	26.65	108.60	57.5
5	NO								
	1300.	.6024E-01	6	1.0	1.0	10000.0	26.65	116.07	60.7
2	NO								
	1400.	.5444E-01	6	1.0	1.0	10000.0	26.65	123.38	63.7
7	NO								
	1500.	.4957E-01	6	1.0	1.0	10000.0	26.65	130.52	66.7
1	NO								
	1600.	.4541E-01	6	1.0	1.0	10000.0	26.65	137.51	69.5
6	NO								
	1700.	.4184E-01	6	1.0	1.0	10000.0	26.65	144.34	72.3
2	NO								
	1800.	.3874E-01	6	1.0	1.0	10000.0	26.65	151.04	75.0
0	NO								
	1900.	.3603E-01	6	1.0	1.0	10000.0	26.65	157.60	77.6
0	NO								
	2000.	.3365E-01	6	1.0	1.0	10000.0	26.65	164.04	80.1
3	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 229. M:  
 259. .3188 6 1.0 1.0 10000.0 26.65 27.63 18.2  
 3 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = .0000  
 CRIT WS @10M (M/S) = 99.99  
 CRIT WS @ HS (M/S) = 99.99  
 DILUTION WS (M/S) = 99.99  
 CAVITY HT (M) = 7.62  
 CAVITY LENGTH (M) = 42.67  
 ALONGWIND DIM (M) = 121.92

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = .0000  
 CRIT WS @10M (M/S) = 99.99  
 CRIT WS @ HS (M/S) = 99.99  
 DILUTION WS (M/S) = 99.99  
 CAVITY HT (M) = 7.62  
 CAVITY LENGTH (M) = 42.67  
 ALONGWIND DIM (M) = 121.92

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

\*\*\*\*\*

END OF CAVITY CALCULATIONS

\*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.3188	259.	0.

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

\*\*\* CAVITY CALCULATION - 1 \*\*\*  
 CONC (UG/M\*\*3) = .0000  
 CRIT WS @10M (M/S) = 99.99  
 CRIT WS @ HS (M/S) = 99.99  
 DILUTION WS (M/S) = 99.99  
 CAVITY HT (M) = 7.62  
 CAVITY LENGTH (M) = 42.67  
 ALONGWIND DIM (M) = 121.92

\*\*\* CAVITY CALCULATION - 2 \*\*\*  
 CONC (UG/M\*\*3) = .0000  
 CRIT WS @10M (M/S) = 99.99  
 CRIT WS @ HS (M/S) = 99.99  
 DILUTION WS (M/S) = 99.99  
 CAVITY HT (M) = 7.62  
 CAVITY LENGTH (M) = 42.67  
 ALONGWIND DIM (M) = 121.92

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.1943	784.	0.

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*



