APPENDIX C

Section I

Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel measurements, revised vacant land classifications, and GIS-based mapping of vacant lands

Supplemental Task:
Estimation of Stabilized land PM_{10} emission using data from 1998-1999 UNLV wind tunnel study of PM_{10} emissions from different dust suppressants

March 28, 2000 - Draft Report

Section II

Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands
September 13, 2000 – Draft Final Report

Section III

Estimation of PM_{10} vacant land emissions factors for Unstable, Stable and Stabilized lands using data from 1995 and 1998-1999 UNLV wind tunnel studies of vacant and dust-suppressant treated lands
January 16, 2001 – Second Final Report

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Supplemental Task: Estimation of stabilized land PM-10 emissions using data from 1998-1999 UNLV wind tunnel study of PM-10 emissions from different dust suppressants

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EXECUTIVE SUMMARY – SUPPLEMENTAL REPORT

The UNLV wind tunnel database developed from a year-long study of PM-10 emissions from land surfaces treated with nine different dust suppressants, was combined with the 1999 Clark County Health District wind database and the Clark County Comprehensive Planning vacant land database to estimate the reduction in Valley-wide annual (1999) and design day (February 25, 1999) PM-10 emissions from vacant lands that could occur if vacant lands currently rated as "unstable" were all successfully treated with dust suppressants to reduce emissions.

Stabilized land emissions factors in ton/acre/hour have been computed for the Phase I and Phase II dust suppressant treatments from the 1998-1999 UNLV wind tunnel study. Preliminary stabilized land emissions factors are typically on the order of $2x10^{-4}$ ton/acre/hour, 2-6% of unstable land emissions factors (typically $1x10^{-2}$ ton/acre/hour, and are 8-50% of stable land emissions factors (typically $2x10^{-3}$ ton/acre/hour).

Estimates of emissions reductions that can be obtained using the above emission factors for application of dust suppressants unstable vacant lands are shown below using *preliminary* values of dust suppressant PM-10 emissions from Phase II of the 1998-1999 wind tunnel study:

Preliminary 1999 annual emissions reductions estimates

Assumed ratio stable/unstable	baseline unstabilized emissions tons	stabilized emissions tons	reduction in emissions tons	percent reduction
90/10	19,959	14,705	5,254	26%
80/20	22,933	13,424	9,509	41%
variable*	23,011	13,395	9,616	42%
70/30	26,407	12,144	14,263	54%

Preliminary 1999 design day (February 25, 1999) emissions reduction estimates

Assumed ratio stable/unstable	baseline unstabilized emissions tons	stabilized emissions tons	reduction in emissions tons	percent reduction
90/10	836	580	256	31%
80/20	998	529	469	47%
variable*	1006	527	480	48%
70/30	1051	478	573	55%

*variable means 80/20 stable/unstable ratio in outlying areas and higher ratios (70/30 or 60/40) in small polygons near Las Vegas' urban core.

The methodology for calculating the Valley-wide estimate was identical to that used in the first UNLV report, dated February 22, 2000, that estimated 1999 annual and design day emissions from unstable lands, except that the source of data for emissions from vacant disturbed (unstable) lands was changed from the 1995 UNLV wind tunnel study of desert lands to the 1998-1999 UNLV wind tunnel study of disturbed soil treated with commercial dust suppressants. The source of data for estimation of emissions from vacant *undisturbed (stable)* lands, the 1995 UNLV wind tunnel database, remains the same in both the February 22 and March 29 reports.

Emission factors used for the stabilized lands in this supplemental study were derived from the Phase II treated surface PM-10 fluxes as a function of wind speed, averaged over eight types of dust suppressants. Averaging was done in this way because it was assumed that a variety of dust suppressants would be used in the Las Vegas Valley, and so, a reduction averaged over different suppressant types should be employed to reflect a population of different land surfaces treated with a variety of dust suppressant products. It should be noted that the 1998-1999 UNLV wind tunnel study showed that some types of suppressants, notably mulches and acrylic polymer emulsions, performed better than others.

Preliminary results for stabilized land surfaces were computed using 1998-1999 wind tunnel emissions estimates that still contain the initial "spike" of loose PM-10. Processing of spike removal from 400 computer data files has consumed more time than expected, and the Phase II flux data set was not completely analyzed by March 28. However, initial review of Phase I spike-corrected flux values indicates that their geometric means are typically within 15% of the uncorrected flux geometric means. The difference between corrected and uncorrected flux values is small because, on dust-suppressant-treated surfaces, the observed initial "spike" is often of low amplitude or non-existent. In contrast, on untreated surfaces (1995 UNLV study), and on torn-up surfaces, the initial spike is usually much higher than the rest of the signal, and the spike-corrected flux can be much smaller than the uncorrected flux.

When the above calculations are repeated using spike-corrected values, it is anticipated that the estimated reductions in PM-10 emissions will change slightly from the estimates cited on page i. The effect of using the spike-corrected values and spikes may be to slightly *decrease* the stabilized PM-10 emissions, to slightly *increase* the PM-10 reductions (in tons) and also slightly *increase* the percentage PM-10 reductions. For a scenario using 20% vacant stabilized land and spike-corrected fluxes for stabilized lands that are 10% smaller than uncorrected fluxes, the spike corrections will slightly *decrease* estimated PM-10 *emissions* by 1-2 percent , and will slightly *increase* estimated PM-10 *emissions reductions* by 1-2 percent. For example, in the 1999 Valley-wide annual estimates, we may see an *increase* in PM-10 reduction from 41% to 43% for an 80/20 stable/stabilized scenario). Reprocessed data should be incorporated into the second draft of this report by the beginning of next week.

For available wind speed data used in this study (1999 Clark County Health District average hourly wind speeds in excess of 20 mph), the above tables show that:

1) Degree of reduction of emissions from the unstabilized baseline value strongly depends on the estimated ratio of stable (untreated) lands to stable (treated) vacant lands.

2) 1999 *design day* reductions using suppressants are higher than 1999 *annual* reductions

Plots of the geometric means of the stabilized land emission factors show very large variability and a declining trend of the means with increasing wind speeds. Because of the high variability in the data, the declining trend is not statistically significant. The high variability is partially an effect of experimental variation in the field, and also an effect to averaging PM-10 emissions over all suppressant types. Slight additional reductions in predicted stabilized land emissions could be obtained if only data from the best-performing (lowest emitting) suppressants were used.

Keywords: PM-10, dust suppressants; emissions estimates, wind tunnel, GIS, database, Clark County, Valley-wide

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I. METHODOLOGY FOR COMPUTING SUPPLEMENTAL EMISSIONS FACTORS

Spike Removal

PM-10 data in the 1998-99 UNLV wind tunnel dust suppressant study were acquired using a TSI Dust-Trak(r) laser-diode sensor, factory-calibrated to Arizona Road dust. The TSI continuously samples the flow in the wind tunnel and stores 1 data point per second in memory. Data are then downloaded to laboratory computers for processing.

Typically, on untreated soil surfaces an initial "spike" of high PM-10 concentration is seen in the first one to two minutes of a wind tunnel run, corresponding to erosion of loose PM-10 material from the soil surface. Wind tunnel runs have durations of 5 and 10 minutes. Five minute runs were used to determine surface roughness properties, and 10 minute runs were used to measure eroded material. To avoid undue influence of the spikes on estimated hourly averages, the spikes need to be removed from the data and processed separately when 5 and 10 minute runs are converted to hourly average emission rates. The spike-removed fluxes (called spike-corrected) are converted to hourly averages in ton/acre/hour. Spike data are converted into masses per unit area (ton/acre).

When computing erosion using wind data at a particular station, spikes are added to the rsults at the start of each erosive wind result. For example, when estimating of wind tunnel emissions during a two-hour erosive wind event, the spike-corrected average in ton/acre/hour is multiplied by 2 hours, the spike in ton/acre is added, and then the result in ton/acre is multiplied by the estimated land area.

The 1998-1999 UNLV wind tunnel study data showed that, for soil surfaces treated with dust suppressants, spikes were typically very small, much smaller than for untreated surfaces. A typical plot of a small-spike wind tunnel run on a treated surface is shown in Figure A. The rising diagonal line of integrated concentration (area under the curve) has a nearly constant slope, indicating a very small initial spike for this run. In Figure A, the uncorrected average PM-10 concentration is 0.0164 mg/m^3, and the spike-corrected concentration is 0.0159 mg/m^3, a difference of 3%.

A typical plot of a moderate-spike wind tunnel run on a treated surface is shown in Figure B. An initial spike in the range of 0.3 to 1.0 mg/m^3 can be observed in the raw data line. The corresponding line of integrated concentration changes in slope until about 50 seconds into the run. The "knee" in the integrated concentration curve arises from the spike. The initial spike mass in this plot corresponds to the area under the spike after removal of the long-term average concentration. In Figure B, the uncorrected average PM-10 concentration is 0.0991 mg/m^3, and the spike-corrected concentration is 0.0773 mg/m^3, a difference of 22%.

Measured PM-10 vs time plots for soils with intact suppressant-treated surfaces generally resembled Figure A. Several suppressants that performed less well in the wind tunnel tests generally resembled Figure B.

Dust suppressants used for computation of flux data

It is difficult at the time of this writing to predict what types of suppressants might be generally employed in a Valley-wide dust control program. Therefore, it was decided to compute flux values averaged over a set of dust suppressants that might be in common use in the Valley. Geometric means across eight different types of dust suppressants were computed for 5 mph wind ranges. The following dust suppressants were used in the Phase I and Phase II calculations.

Type	Supplier and Trade name		Application rates pounds/100 square feet	
			Phase I	Phase II
$MgCl_2$ solution	BMI	Chlor-Tex	17.6	17.6
Acrylic emulsion	Rohm & Haas	Poly-Tex	2.9	2.9
Plaster of Paris-mulch	Soil-Tech	Plas-Tex	15.0	15.0
Lignin sulfonate emulsion	Georgia Pacific	Dustac	13.9	13.9
Petroleum resin emulsion	Pennzoil	PennzSuppressD	4.5	3.5
Acrylic emulsion	Midwest Ind	Soil Sement	1.9	3.1
Reclaimed water	City of Las Vegas	none	0.0	0.0
Recycled road aggregate	Las Vegas Paving	RAP	3,249	3,249*

*RAP was applied only once in Phase I, and not reapplied in Phase II. All other suppressants were reapplied in Phase II

Details of the application methods may be found in the UNLV Report "Field Testing of Dust Suppressants using a Portable Wind Tunnel", dated December 8, 1999.

Flux Calculation

Measured wind-tunnel PM-10 concentrations were converted to fluxes by using a mass balance on the wind tunnel sampling train, the known flow velocity in the tunnel, the floor area of the tunnel, and a small background PM-10 concentration from ambient air. The mathematical conversion from concentration to flux is as follows:

$$\text{Flux} = \frac{(\text{Tunnel flow+cylcone flow}) * (\text{corrected TSI PM-10 concentr} - \text{background PM-10})}{\text{Tunnel floor area}}$$

For flow rates in m^3/minute, spike-corrected PM-10 concentrations in mg/m^3, and floor area in m^2, this computation gives fluxes in mg/m^2/min. Values in mg/m^2/min were then converted to ton/acre/hour. Background PM-10 was typically set at .020 mg/m^3.

Spike Calculation

Numerical integrals of PM-10 concentration vs. time were computed using the formula:

$$\sum_{i=1}^{n} (\text{concentration})_i \times (\text{delta } t)_i$$

where n = 300 or 600 seconds, depending on the length of the wind tunnel run

The numerical integrals were computed for both the entire duration of the record (usually i = 1 to i=300 or 600), and for the duration of record that did not include the spike (usually i = 100 to i=300 or 600).

The numerical integral over the entire record duration is called Integrated PM-10 (mg-sec/m^3).

The numerical integral over the record duration that did not include the spike is called Spike-corrected PM-10 (mg-sec/m^3).

Average spike concentrations (mg/m^3) were then computed by the formula:

$$\frac{[\text{Integrated PM-10 (mg-sec/m}^3) - \text{spike-corrected PM-10 (mg-sec/m}^3)\,]}{\text{spike duration (seconds)}}$$

Spike mass per unit area was then computed by the following relationship:

$$\text{Spike mass/area} = \frac{(\text{Average spike concentration}) \times (\text{tunnel flow rate}) \times (\text{spike duration})}{\text{Tunnel floor area}}$$

This computation produced a spike mass in milligrams per square meter. This result was then converted to ton per acre using numerical conversion factors.

Rationale for selection of Phase II data for use in estimation of fluxes from stabilized vacant lands

Wind tunnel data are available for two phases in the 1998-1999 wind tunnel study. Phase I data were obtained from August 1, 1998 through January 30, 1999. Phase II data were obtained from February 1999 through June 30, 1999. During Phase I, the Las Vegas Valley was experiencing an El Nino (usually warmer and wetter than normal) weather cycle. Unusually heavy rains in September and October 1998 inundated the suppressant test beds with two-to-three inches of standing water. Unusually cold conditions in

December 1998 produced snowfall on the beds and may have subjected the test suppressants to a freeze-thaw cycle. The result was that several suppressants dissolved in the standing water. Phase I testing of the suppressants employed the technique of measuring PM-10 emissions from the suppressants as they weathered over time. Phase II emission factors for each suppressant were derived from a strategy of making single sampling runs of the beds at intervals of one to two weeks, for a period of 10 weeks.

To eliminate effects of unusual weathering, a Phase II study was launched in January 1888. All suppressants except for RAP were reapplied between January 31 and February 14, 1999. After February 14, Las Vegas experienced an unusually dry spring as a result of a La Nina (usually cooler and dryer than normal) weather cycle. The suppressants were not subjected to heavy precipitation until July 8, 1999, after the completion of wind tunnel testing. Phase II testing employed a strategy of intensive replicate sampling of the PM-10 emissions from the suppressants in a short period of time. PM-10 emissions were measured after the beds had typically been subjected to one to three months of weathering.

Phase I and Phase II geometric mean uncorrected fluxes in each 5mph wind speed category are presented in Table A and in Figures 1, 2, and 3. The large standard deviations shown in the Figures indicate considerable scatter in the data. The scatter is the result of computing averages from measurements collected over periods of several months, and from averages over different suppressant types.

Comparison of the Phase I and Phase II tabulated uncorrected fluxes and the plots of the (geometric mean $\pm$ 1 standard deviation) average fluxes (Figures 2 and 3) shows that the geometric means of the Phase II fluxes are 30% to 60% of the geometric means of Phase I fluxes. When statistical testing is completed, it is anticipated that there will be few cases of significant differences between the means of the Phase I and Phase II samples.

This author believes that the Phase II results are more representative of actual field applications, largely due to the absence of the extreme weathering conditions that subjected the Phase I beds to inundations of standing water. This is the main reason why the Phase II data were selected for use in Valley-wide emission factor estimates.

Preliminary results of spike correction calculations - Phase I

Preliminary results from spike removal calculations for the Phase I dataset shows minimal effects of spike correction on Phase I data. Comparison of geometric means and standard deviations in Table A and Figure 1 (fluxes uncorrected for presence of spike) to Table B and Figure 1A (fluxes corrected for presence of spike) shows that the fluxes are nearly identical. This result indicates that spike magnitudes in the Phase I dataset were small compared to the steady-state fluxes.

Sources of data for the Valley-wide PM-10 emission calculation

1. PM-10 Emissions factors: Undisturbed (stable) land emission factors were assigned to each wind speed using 1995 wind tunnel study data from the Excel spreadsheet FLUXDRAFT3.XLS. Stabilized disturbed land emission factors were assigned to each wind speed using 1998-1999 wind tunnel study data from STABLFLUX.XLS.

2. Threshold velocities for initiation of a wind erosion event. SPIKESOIL.XLS, another Excel 5.0 spreadsheet, contains the estimated 10-meter threshold velocity (called a spike velocity) for initiation of a PM-10 event, classified for disturbed (unstable) and undisturbed (stable) soils and also classified by major soil type. Following analysis of the data in this spreadsheet, 20 mph was uniformly used as the spike velocity, which is close the (geometric mean - 1 standard deviation) value averaged over all soil types. Average observed 10-meter spike velocities usually exceeded 20 mph. A pessimistic value of 20 mph, representing a value approximately equal to the (geometric mean – 1 standard deviation) of the initiation velocities observed in the wind tunnel data, was used to select erosive winds. This assumption leads to higher emission estimates than if the geometric mean spike velocity value had been selected as the threshold, as there are more hours of erosive winds above 20 mph in the record than there are hours of erosive winds above 26 mph.

In computing emissions estimates, spike values were used only in the first hour of erosive wind events separated by more than 24 hours, to allow for weathering and deposition to renew a layer of loose material on the surface. The actual time required for renewal of the loose layer is not known.

3. Wind data: Wind data came from the Clark County Health District monitoring network:

a. Hourly average wind data for 18 monitoring stations inside the BLM land disposal boundary were imported into a Microsoft Access 97 database, and identified by station id#.

b. Queries were run on the database to obtain hourly average wind records greater than or equal to 20 mph for each station. Missing wind records (indicated by 9999) in the data from Clark County were not used. No attempt was made to adjust or patch missing records in the database.

c. For each station, hourly average wind records exceeding 20 mph for each monitoring station (polygon) resulting from the query were exported to separate MS Excel 5.0 spreadsheets. Wind tunnel study emission factors were assigned to each hourly average wind speed using emission factor data from the Excel spreadsheets FLUXDRAFT3.XLS and STABLFLUX.XLS.

4. Vacant land areas: Vacant land estimates came from Clark County Comprehensive Planning as ASCII data showing the number of acres of vacant land in each grid cell. Each grid cell corresponds to one section in a township and range map. Each cell is approximately one square mile (640 acres) in area. As described in the February 22, 2000 report, Thiessen polygons were constructed between the locations of the monitoring stations. Each polygon encloses six to several hundred grid cells. Vacant land area inside each Thiessen polygon was obtained by the following method:

a. A grid surface of the land inside the BLM disposal boundary was developed from UNLV's GIS database. The number of acres of vacant land in each grid cell had been estimated by Clark County Comp Planning, from the Spring 1999 aerial photos, and assigned to each township, range and section.

b. Locations of CCHD AQD monitoring stations were converted to UTM coordinates and overlaid on the southern Clark County township and range grid.

c. The BLM Land Disposal Boundary was overlaid on the same grid to provide exterior limits.

d. Thiessen polygons were created around each monitoring station. The polygons were converted into a layer on the map grid.

e. A GIS query was run on the number of grid cells touched or contained by each polygon to compute the total area of all grid cells touched or contained within a polygon. This approach means that the areas of grid cells straddling a polygon boundary were incorporated into polygons on each side of a boundary. This means that the polygons have more area assigned to them than they really contain. A correction technique is needed to repair this area.

f. Areas of straddling grid cells assigned to two polygons were found by creating a second MS Access97 database of all grid cells contained in or straddling each polygon. A third MS Access97 database that contains only the duplicated cells was then created by running a "find duplicates" query in the second database on the unique record identifier for each grid cell. This second database was used to compute the vacant land area corrections that were to be applied to each polygon. To compute the correction, the total vacant land area of duplicated grid cells in each polygon was calculated, then divided by two and subtracted from the total vacant area assigned to each polygon.

5. Summary: The following databases were combined to estimate Valley-wide PM-10 emissions:

a. Wind speed data from Clark County Health District, sorted by day and time within each polygon, in units of miles per hour, and selected to include only hourly average winds exceeding 20 mph (based on observed spike velocity data from the 1995 UNLV wind tunnel study.

b. PM-10 emission factor data from 1995 and 1998-1999 UNLV Phase II wind tunnel studies, computed as geometric means for stable (undisturbed) and unstable (disturbed) soil conditions, in units of ton/acre/hour for 5 mph increments of wind speed, beginning at 15-19.9 mph, then 20-24.9 mph, 25-29.9 mph, etc.

c. Corrected polygon vacant land areas from Clark County Comprehensive Planning, in units of acres.

Sample calculation of PM-10 emissions in a polygon

For each hour of erosive wind in each erosion event in each polygon, PM-10 emissions in each polygon were computed in the following manner:

A. *For stable lands:*

1) estimated fraction stable land

x

2) area vacant land (acre) in the polygon

x

3) stable land emission factor (1995 wind tunnel study) in ton/acre/hour corresponding to observed average wind speed in that hour

x

4) duration of that average wind speed (always 1 hour)

=

5) estimated stable land emissions of PM-10 in tons for that hour in that polygon

6) For the first hour of each erosion event separated by more than one day, the spike emission factor (ton/acre) was multiplied by 1) and 2) above to get a spike value in tons, and added to the first hour of steady emissions.

B. *For stabilized disturbed lands*, the procedure was the same as in A., except that changes were made in the following steps,

1) the estimated fraction *unstable (disturbed)* land was used. The unstable fraction is (1 - estimated fraction of stable land)

3) the Phase II stabilized land emission factor (1998-1999 study) was used instead of the stable land emission factor

6) if available, the stabilized spike value was used instead of the stable spike value (at the time of this writing, spike values for stabilized lands were unavailable for Phase II)

C. Emissions from steps A and B were summed for each erosion event (hourly average winds > 20 mph) over the entire period of record for that monitoring station. These summed values are found in column N of each individual spreadsheet in the workbook STABL99PM10.XLS. Each spreadsheet represents a different polygon on the Valley-wide grid.

A sample calculation is shown in Table A.7 for Polygon number 14, surrounding the CCHD Green Valley (GV) monitoring station, for the 80% stable, 20% unstable case. Table A.7 shows 33 erosive wind hours documented to be exceeding 20 mph in this polygon. The 33 hours are divided among 11 different erosive wind events. Vacant land area assigned to the polygon comprises 26,020 acres in the southeast portion of the Valley.

For an example calculation, look at the first row of Table A.7. The indicated erosive wind speed is 20.1 mph for an event that started at 7 pm (hour 20) on January 20, 1999. From Table B, the stable land emission factor corresponding to 20.1 mph is $1.38x10^{-3}$ ton/acre/hour. This emission factor is multiplied by the assumed area of stable vacant land in the polygon, corresponding to 80% of the total area (20,816 acres) to produce an emission of 28.73 tons in that hour. Since this is the first hour of the wind event, a stable land spike emission factor of $2.12x10^{-4}$ ton/acre is multiplied by the stable land area, 20,816 acres, to produce an estimated spike emission of 4.41 tons.

For the 20% of land assumed to be previously unstable, but now stabilized, the unstable land emission factor corresponding to 20.1 mph is **$3.42x10^{-4}$ ** ton/acre/hour (Table A). This is multiplied by the assumed area of unstable vacant land in the polygon, 5,204 acres, to estimate a value of **1.78** tons of PM-10 in that first hour. Since this is the first hour of the wind event, a stabilized land spike emission factor of **$0.0x10^{-4}$** ton/acre is multiplied by the unstable land area, 5,204 acres to produce an estimated spike emission of **0.00** tons.

The emissions corresponding to the first hour of the event are then summed, (stable: 28.73 tons + 4.41 tons) + (stabilized: **1.78 tons + 0.00** tons), to produce an estimated total emission in that polygon of 34.9 tons. *The ** indicates that a spike value and spike-corrected flux are missing and will be applied as soon as data become available.*
This process is repeated for each hour of each wind event, except that, for erosive hours other than the first hour of each event, the spike values are not used.

When computations in each polygon are completed, then emissions for each polygon are summed to develop the Valley-wide estimate. The Valley-wide 1999 annual estimates were computed in the Excel workbook STAB99LSUM.XLS. Results from this spreadsheet are printed out for different assumed ratios of stable to stabilized vacant land area as Tables 1 through 4 and Tables 1-II through 4-II, and are presented and discussed below.

Data from the individual station spreadsheets were also tabulated for February 25, 1999, to develop Valley-wide estimates of emissions for the specified Design Day. The Valley-wide 1999 design day estimates were computed in the Excel workbook STAB99LSUM.XLS. Results from this spreadsheet are printed out for different assumed ratios of stable to stabilized vacant land area as Tables 5 through 8 and Tables 5-II through 8-II, and are presented and discussed below.

II. PRELIMINARY RESULTS - STABILIZED LAND EMISSION FACTORS

Stabilized land emission factors ranged from 3% to 19% of the magnitude of *unstable* land emission factors. The following data compare geometric means for unstable lands (Table A - February 22 report - 1995 UNLV wind tunnel data) to geometric means for stabilized lands (Tables A and B - this report – 1998-99 wind tunnel data).

Wind speed (mph)	Unstable lands spike-corrected geometric mean (ton/acre/hour)	Phase I stabilized uncorrected geometric mean (ton/acre/hour)	Phase II stabilized uncorrected geometric mean (ton/acre/hour)
15-19.9	4.95×10^{-3}	9.45×10^{-4}	4.20×10^{-4}
20-24.9	5.21×10^{-3}	5.44×10^{-4}	3.42×10^{-4}
25-29.9	6.40×10^{-3}	6.50×10^{-4}	1.94×10^{-4}
30-34.9	4.62×10^{-3}	4.83×10^{-4}	

When ratios are computed, the data are:

Wind speed (mph)	Ratio Phase I uncorrected data to unstable corrected data	Ratio Phase II uncorrected data to unstable corrected data
15-19.9	19.1%	8.5%
20-24.9	10.4%	6.6%
25-29.9	10.2%	3.0%
30-34.9	10.4%	

Stabilized land emissions factors (Tables A and B - this report) ranged from 8% to 49% of the value of emissions factors computed for *stable* lands (Table B - February 22, 2000 report):

Wind speed (mph)	Stable lands spike-corrected geometric mean (ton/acre/hour)	Phase I stabilized uncorrected geometric mean (ton/acre/hour)	Phase II stabilized uncorrected geometric mean (ton/acre/hour)
15-19.9	1.95×10^{-3}	9.45×10^{-4}	4.20×10^{-4}
20-24.9	1.38×10^{-3}	5.44×10^{-4}	3.42×10^{-4}
25-29.9	2.57×10^{-3}	6.50×10^{-4}	1.94×10^{-4}
30-34.9	3.16×10^{-3}	4.83×10^{-4}	

When ratios are computed, the data are:

Wind speed (mph)	Ratio Phase I uncorrected data to stable corrected data	Ratio Phase II uncorrected data to stable corrected data
15-19.9	48.5%	21.5%
20-24.9	39.4%	24.8%
25-29.9	25.3%	7.5%
30-34.9	15.3%	

There are several potential reasons for the lower values of stabilized emissions factors:

1) The short duration of each Phase of the 1998-1999 suppressant weathering study (five months for each phase), compared to the long duration of weathering and background PM-10 deposition on stable desert surfaces may have limited the accumulation of PM-10 on the surfaces from background deposition and in-situ weathering.

2) Isolation of the suppressant-treated beds from adjacent erodible soils that could have limited surface transport of PM-10 from erodible soils to the beds.

3) Cleaner wind tunnel sampling techniques were developed by UNLV for the 1998-1999 study when low PM-10 concentrations were initially observed.

4) Lower loose PM-10 concentrations on the surface and greater resistance to erodibility during wind events by the suppressant-treated surfaces (i.e. the suppressants actually worked).

The lower flux values for suppressant-treated (stabilized) surfaces will have two principal effects on Valley-wide estimates:

1. Estimated PM-10 emissions from stabilized disturbed lands will decrease significantly compared to emissions from unstable disturbed lands.

2. The effect of changes in estimated proportion of disturbed land surfaces on Valley-wide PM-10 emissions will be changed:

a. For scenarios where dust suppressant is not applied to any land surfaces, an *increase* in the assumed proportion of disturbed land will produce an *increase* in estimated PM-10 emissions, because the disturbed (unstable) land emissions factors are *higher* than the undisturbed (stable) land emissions factors

b. For scenarios where dust suppressants are assumed to be applied Valley-wide to all unstable land surfaces, an *increase* in the assumed proportion of disturbed land will produce a *decrease* in estimated PM-10 emissions, because the stabilized land emissions factors are *lower* than the undisturbed (stable) land emissions factors.

III. PRELIMINARY RESULTS - VALLEY-WIDE ESTIMATES

Valley-wide results were calculated for unstable (disturbed) lands without treatment, and for unstable lands after treatment (stabilization) with dust suppressants. The sensitivity of the model to changes in estimated fraction stable land area was tested by running the computations for estimated conditions of 10%, 20% and 30% unstable vacant lands over the entire Las Vegas Valley. For a pessimistic estimate that includes varying degrees of soil instability, an additional sensitivity calculation was performed, using high estimates (a mixture of 30% and 40%) of unstable land in the urban core, where human activity is more likely to have adversely impacted vacant properties, and lower estimates (20%) of unstable vacant land on the periphery. Results of this calculation are shown in Table C, 3, 3-ii, 7, and 7-ii under the label "variable".

1) Spreadsheets containing results for the 80/20 stable/stabilized case for each polygon are contained in Appendix A.

2) Results from individual polygon spreadsheets are condensed into Valley-wide estimates in Tables 1 through 8 and 1-ii through 8-ii. Tables 1-8 repeat the Valley-wide estimates of emissions from stable and *unstable* lands that was presented in the February 22, 2000 UNLV report. Tables 1ii-8ii contain the Valley-wide estimates of emissions from stable and *stabilized* lands.

Tables 1 through 8 (untreated unstable surfaces) and 1-ii through 8-ii (treated (stabilized) unstable surfaces) are organized according the following guide.

1999 annual estimates

Ratio stable/unstable	Table #	Ratio unstable/stabilized	Table #
90/10	1	90/10	1-ii
80/20	2	80/20	2-ii
variable	3	variable	3-ii
70/30	4	70/30	4-ii

1999 design day estimates

Ratio stable/unstable	Table #	Ratio unstable/stabilized	Table #
90/10	5	90/10	5-ii
80/20	6	80/20	6-ii
variable	7	variable	7-ii
70/30	8	70/30	8-ii

3) Table C condenses the totals from Tables 1 through 8 and 1-ii through 8-ii into one page. Table C shows that:

a. For unstable vacant lands that *have not* been stabilized with application of dust suppressants, annual and design day emissions *increase* as the fraction of unstable land *increases.* This is the expected pattern, as PM-10 emission factors for unstable land are *higher* than PM-10 emissions factors for stable land.

b. For unstable vacant lands that *have* been stabilized with application of dust suppressants, annual and design day emissions *decrease* as the fraction of stabilized unstable land *increases.* This occurs because UNLV's measured emissions from *stabilized (treated with dust suppressant)* lands are *lower* than emissions from stable, undisturbed desert. Therefore, as the relative proportion of treated (stabilized) land increases from 10% (90% stable land) to 30% (70% stable land), Valley-wide emissions are predicted to *decrease*.

c. The "variable" case is very similar to the 80/20 scenario, indicating that urban core polygons make a small contribution to the Valley-wide estimate.

d. The proportion of unstable lands present in the Valley is a key parameter in the estimation of the degree of Valley-wide emissions reduction that could be obtained from Valley-wide application of dust suppressants. The following tables, reproduced from Table C, show the effects of choosing different estimated proportions of stabilized disturbed vacant land.

Preliminary 1999 annual emissions reductions estimates

Assumed ratio stable/unstable	baseline unstabilized emissions	stabilized emissions	reduction in emissions	percent reduction
	tons	tons	tons	
90/10	19,959	14,705	5,254	26%
80/20	22,933	13,424	9,509	41%
variable*	23,011	13,395	9,616	42%
70/30	26,407	12,144	14,263	54%

Preliminary 1999 design day (February 25, 1999) emissions reduction estimates

Assumed ratio stable/unstable	baseline unstabilized emissions tons	stabilized emissions tons	reduction in emissions tons	percent reduction
90/10	836	580	256	31%
80/20	998	529	469	47%
variable*	1006	527	480	48%
70/30	1051	478	573	55%

*variable means 80/20 stable/unstable ratio in outlying areas and higher ratios (70/30 or 60/40) in small polygons near Las Vegas' urban core.

The dependence of emissions reduction on proportion of stabilized/disturbed vacant land is plotted, for the 1999 design year, in Figure 4. A 50% reduction in annual estimated Valley-wide emissions is achieved at approximately a 27% proportion of stabilized disturbed land, and corresponds approximately to a PM-10 emissions reduction of about 13,000 tons (from 26,000 tons of emissions to 13,000 tons of emissions).

The February 25, 1999 design day results are plotted in Figure 5. A 50% reduction in design day emissions is estimated to be achieved at about 24% stabilized disturbed land., and corresponds approximately to a PM-10 emissions reduction of about 520 tons.

Notification of error in February 22, 2000 UNLV report

The data shown in the first column of Table C, and in Tables 1 through 8 are repeats of the data tables presented in the February 22, 2000 UNLV report. Computed values for stable/unstable lands reported in Table C and Tables 1-4 of this (March 29, 2000) report are slightly higher than in the February 22, 2000 report. In carrying out the computations for this report, an error was discovered in the Green Valley polygon (gv, Polygon 14) spreadsheet. The error consisted of omission of about 20 hours of computations of PM-10 emissions, and when corrected, estimated 1999 annual PM-10 emissions increased substantially for this polygon. The following table summarizes the errors contained in the February 22, 2000 report for the case of *unstable* vacant lands

Ratio stable/ unstable	Feb 22 Incorrect gv estimate tons	Mar 29 Correct gv estimate tons	Feb 22 Incorrect annual estimate tons	Mar 29 Correct annual estimate tons
90/10	582	1,685	18,857	19,959
80/20	709	2,031	21,612	22,933
variable	709	2,031	21,690	23,011
70/30	836	2,377	24,866	26,407

Design day emissions were not affected by the omission on the Green Valley spreadsheet, as there were no wind records available for the Green Valley polygon on February 25, 1999. A revised version of the February 22,2000 report will be issued with this correction, along with any other corrections suggested by Clark County.

IV. DISCUSSION

Preliminary results indicate that the degree of emission reduction obtained by stabilization of vacant lands with dust suppressants will depend on the proportion of unstable vacant lands that exist in the Valley. Since treatment of unstable land surfaces with dust suppressants will likely produce a surface with a lower emission rate than undisturbed (stable) desert surfaces, higher assumed proportions of unstable vacant lands will give larger reductions of PM-10 emissions from the baseline case. It therefore becomes a crucial matter to accurately document the extent of unstable vacant lands in the Valley.

Current estimates of vacant land proportions in the Valley vary widely. Here is a summary of information sources known to this author:

1) To date, results from the field work component of the UNLV project (Table D of the original report dated February 22, 2000), indicate that, if the procedures in the Maricopa County rule are followed, only five of 68 sites surveyed to date (7.4%) would be rated as "unstable".

2) Clark County Health District dust inspectors stated in a meeting on February 24 that they estimate the percentage of disturbed, unstable lands on the periphery of the Valley to be as high as 25%, in areas where there is a lot of active development.

3) Examination of the Clark County Health District dust permit database indicates that about 20,000 acres are permitted for active construction at any one time. When compared to the 150,000 acres of vacant land in the land disposal boundary, the ratio 20,000/150,000 gives an estimated proportion of 13% *potentially unstable* vacant lands.

4) Dames and Moore estimates of proportion of unstable lands in their February, 2000 microinventory study for Clark County Comprehensive Planning.

5) The current Kleinfelder satellite study, if it can really distinguish between disturbed (unstable) and undisturbed (stable) land surfaces, may produce the most relevant estimate of proportion of vacant lands.

V. PRELIMINARY CONCLUSIONS

1. Preliminary stabilized land emissions factors in ton/acre/hour have been computed for the Phase I and Phase II dust suppressant treatments from the 1998-1999 UNLV wind tunnel study. Stabilized land emissions factors are typically on the order of $2x10^{-4}$ ton/acre/hour, 2%-6% of unstable land emissions factors (typically $1x10^{-2}$ ton/acre/hour), and are 8%-50% of stable land emissions factors (typically $2x10^{-3}$ ton/acre/hour).

2. Valley-wide estimates of PM-10 emissions from vacant have been completed for several estimated proportions of stable and stabilized vacant lands. Results are sensitive to estimated relative proportions of stable and unstable lands.

a. For the 1999 Design Year, PM-10 estimated emissions reductions of approximately 5,000 tons (at 10% unstable lands) to 14,000 tons (at 30% unstable lands) are obtained if dust suppressants were applied Valley-wide to unstable lands. A 50% reduction of 1999 Design Year PM-10 emissions from vacant disturbed lands could be obtained if 27% of vacant lands in the valley were treated with dust suppressants. The approximate "slope " of the curve of design year emissions reductions vs. proportion of stabilized vacant lands is 500 tons per percent stabilized. One percent of the vacant land in the Valley is about 1500 acres, giving an overall reduction of 0.33 ton/acre.

b. For the 1999 Design Day, PM-10 emissions reductions of approximately 250 tons (at 10% unstable lands) to 570 tons (at 30% unstable lands) are estimated to be obtained if dust suppressants were applied Valley-wide to unstable lands. A 50% reduction of 1999 Design Day PM-10 emissions from vacant disturbed lands could be obtained if 24% of vacant lands in the valley were treated with dust suppressants.

3. Three polygons in the north and west portions of the Las Vegas Valley, Lone Mountain (lo), Palo Verde (pv), and Craig Road (bs), typically contribute 65-70% of the 1999 Design Year PM-10 emissions. This occurs because these polygons have large areas of vacant land and longer periods of erosive winds than are recorded at stations in other parts of the Valley.

4. Three polygons, Paul Myer (pm), Lone Mountain (lo), and Craig Road (bs) typically contribute 70-75% of the 1999 Design Day PM-10 emissions. This occurs because these polygons had large areas of vacant land and the longest periods of record for the design days.

VI. DRAFT RECOMMENDATIONS

1. Once agreement has been reached on a suitable method for evaluating stability of vacant lands, a Valley-wide field survey, evaluating representative samples of vacant lands in each polygon, could be carried out to accurately estimate the percentage of vacant land in each polygon. Current estimates of the proportion of unstable land vary widely.

2. The current Clark County Health District database indicates that there about 20,000 acres of land under active dust control permits at any one time. Estimates of number of acres of land in each polygon currently permitted for construction, an approach similar to that used in the 1997 SIP, would probably put an outside limit on the proportion of vacant land in each polygon that could be rated as "unstable". However, inactive construction sites either in areas where the soil can form a crust, or that have been treated with a dust suppressant, will be "stable". Absent accurate remote sensing techniques, or accurate field evaluation of every section of vacant land in the Valley, it will be necessary to guess the fraction of lands rated as stable or unstable.

3. Results of the current Kleinfelder satellite image study funded by Clark County Health District may provide useful information of proportion of unstable lands that could be used to improve the accurate estimation of Valley-wide PM-10 emissions.

4. To achieve a large reduction in PM-10 emissions in the shortest time, priority for control of PM-10 should be assigned to those polygons that are the largest contributors to Valley-wide emissions. The Lone Mountain and Craig Road polygons are in the top three contributors for both the design year and design day calculations.

Figure A - Typical non-existent spike - intact treated surface

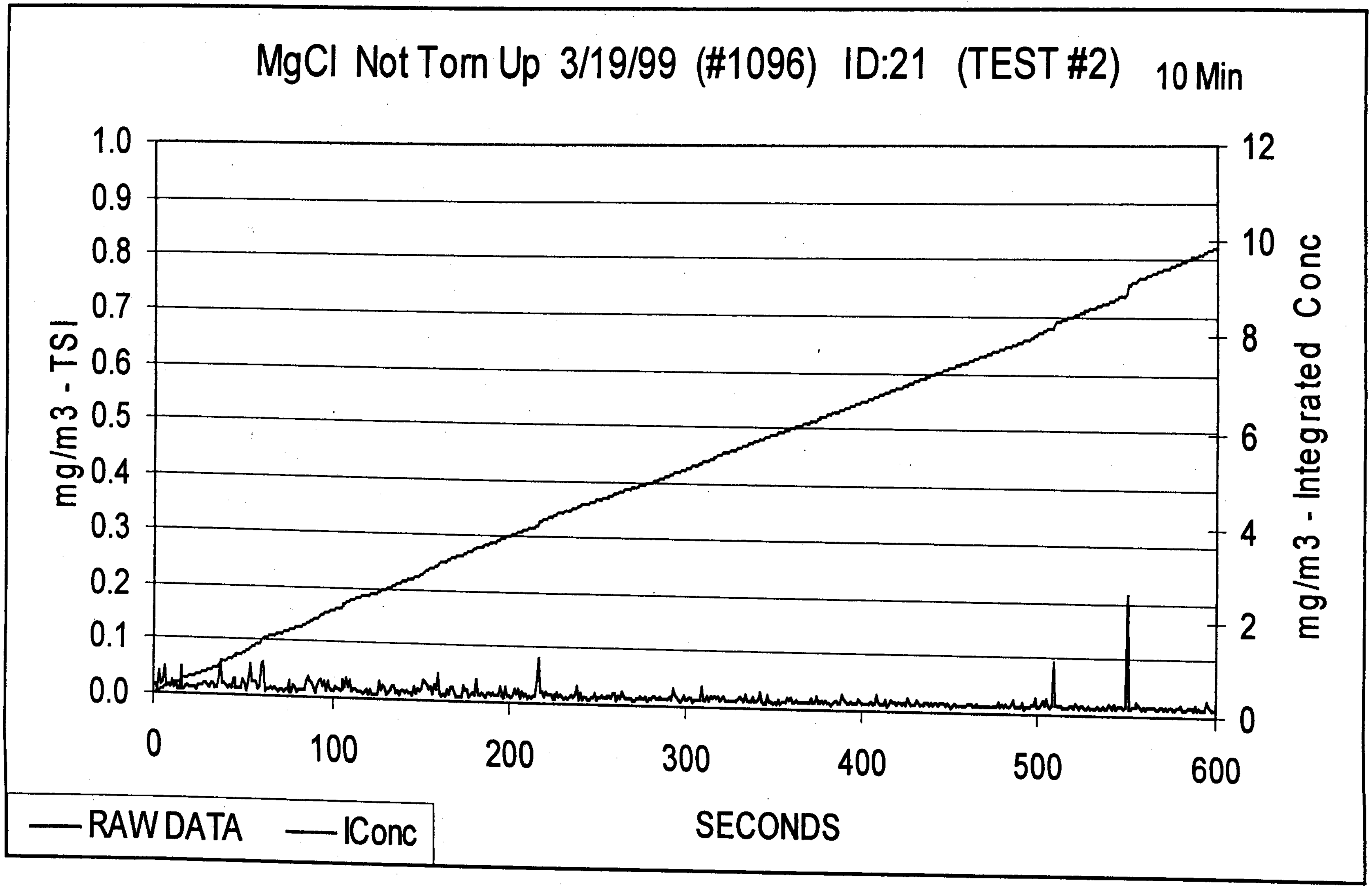


Figure B - Typical spike - intact treated surface

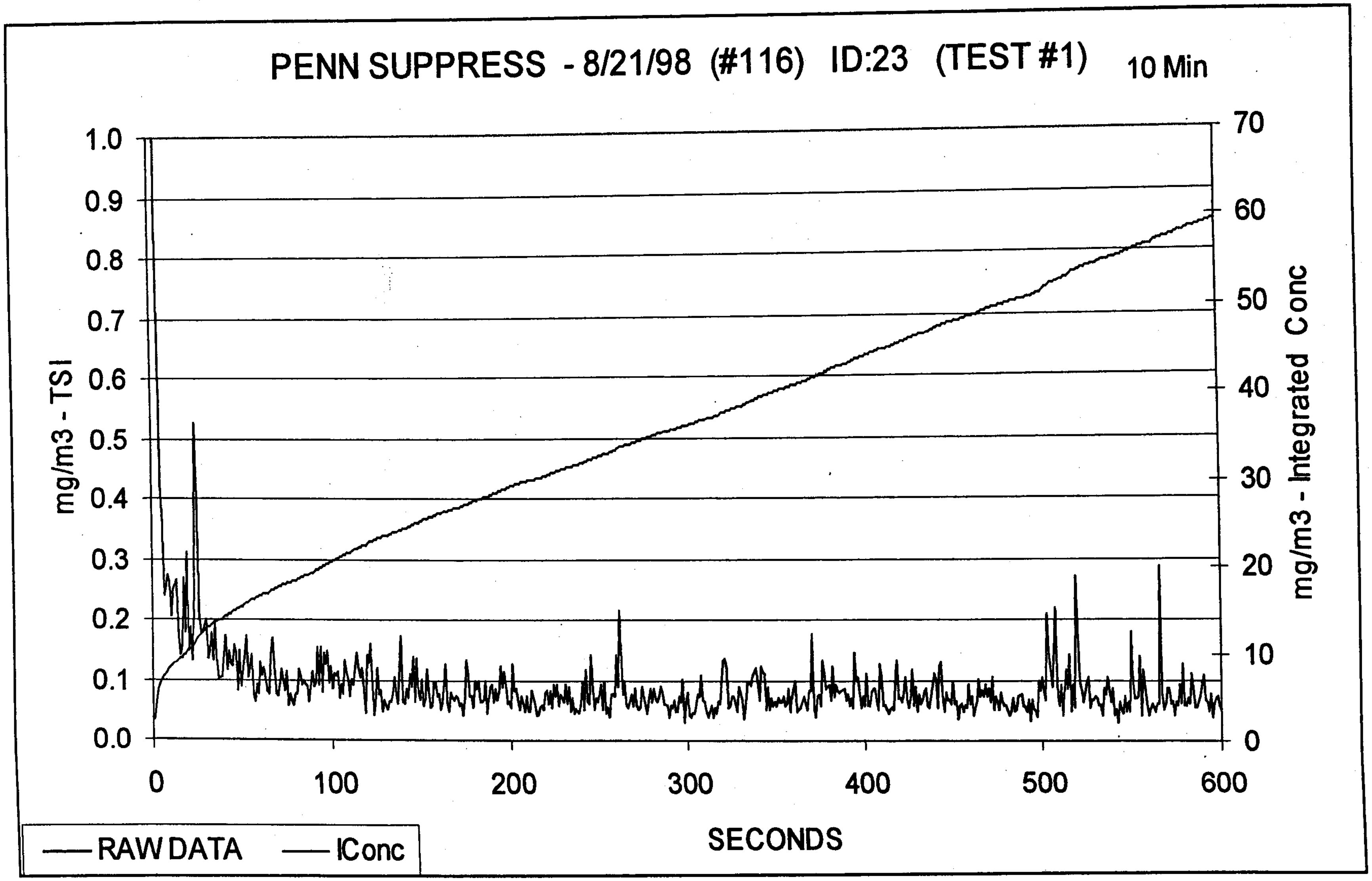


Figure 1 - Geometric mean +/- 1 standard deviation

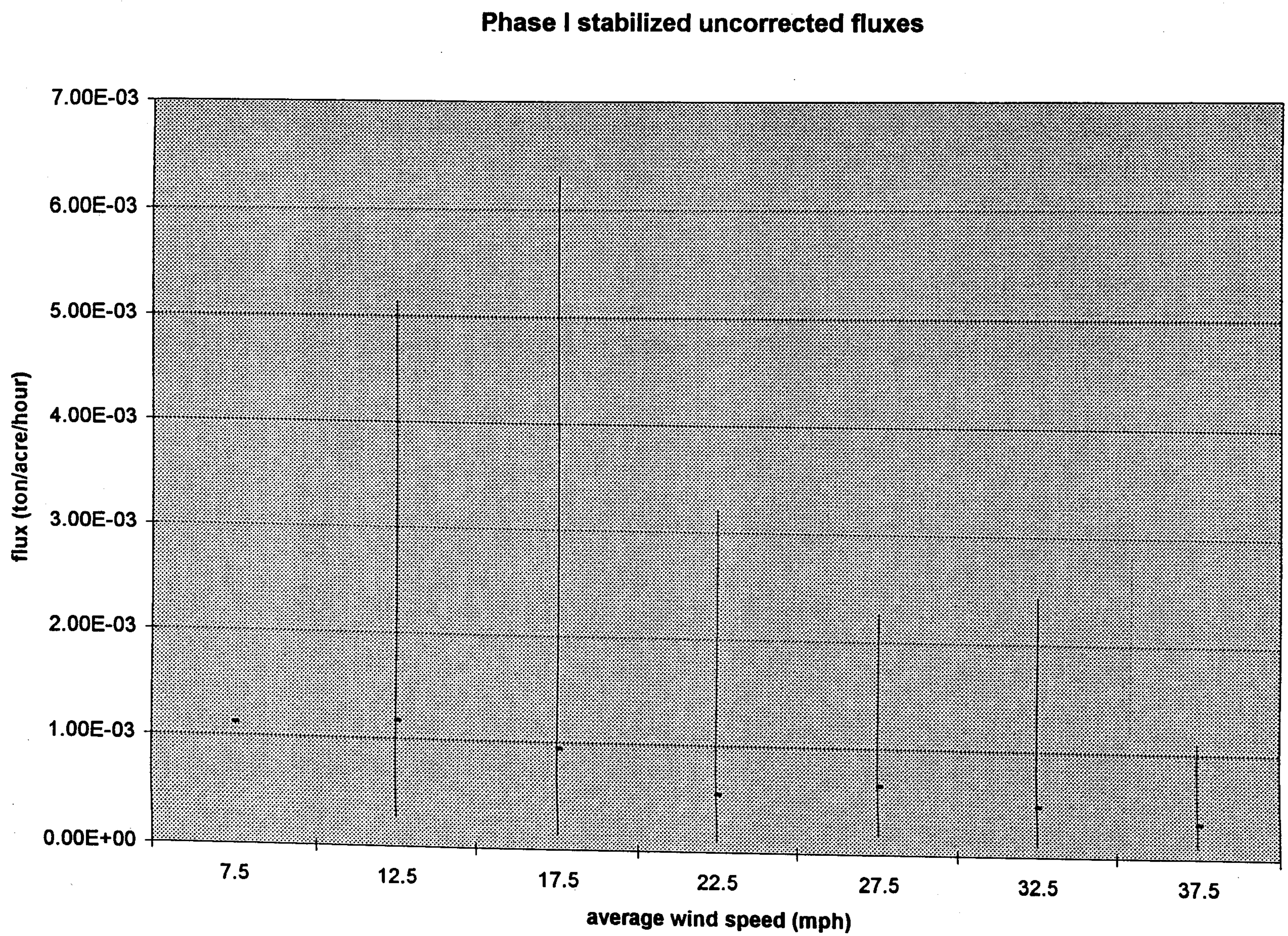


Figure 1A - Geometric mean +/- 1 standard deviation

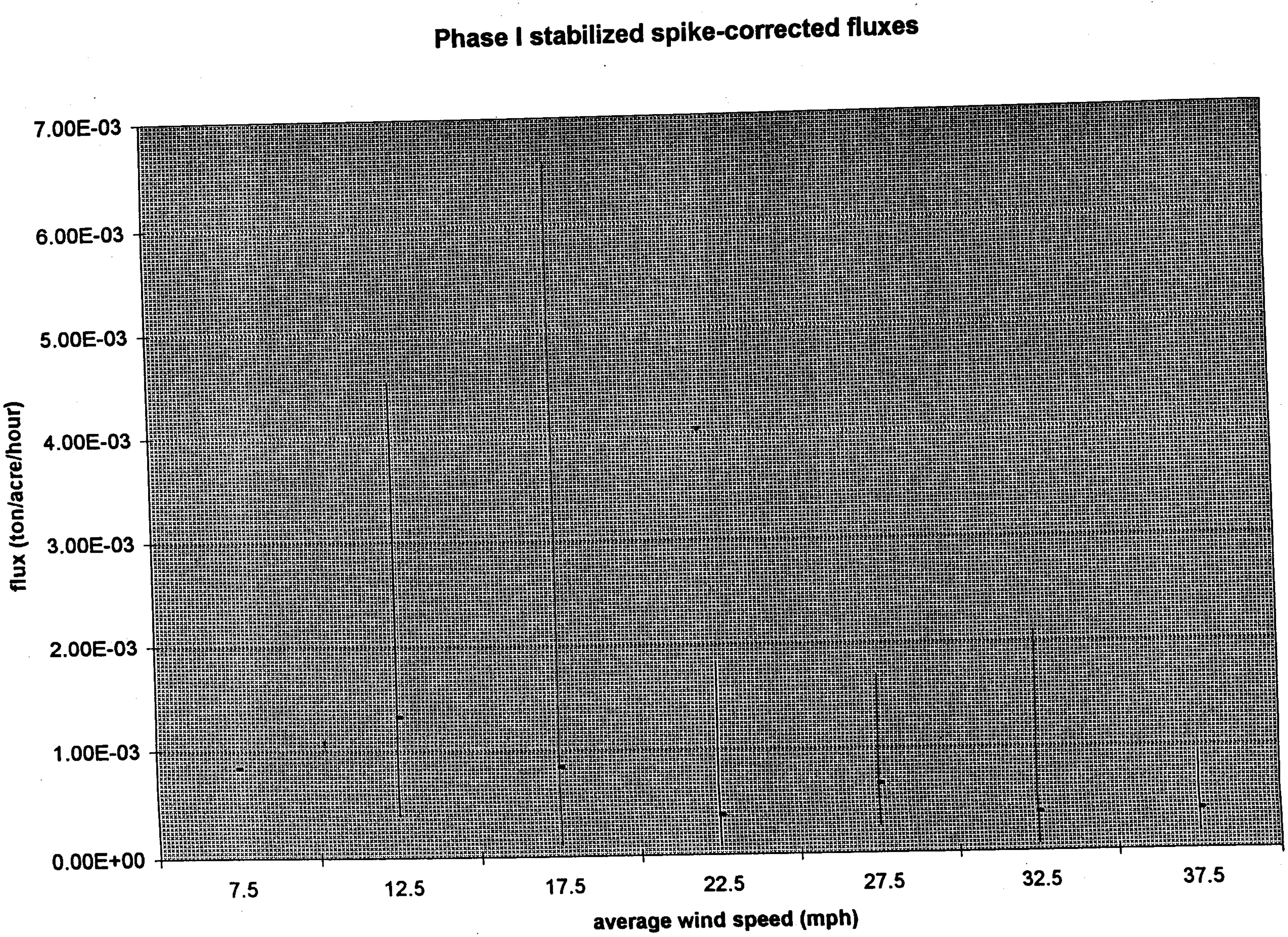


Figure 2 - Geometric mean +/- 1 standard deviation

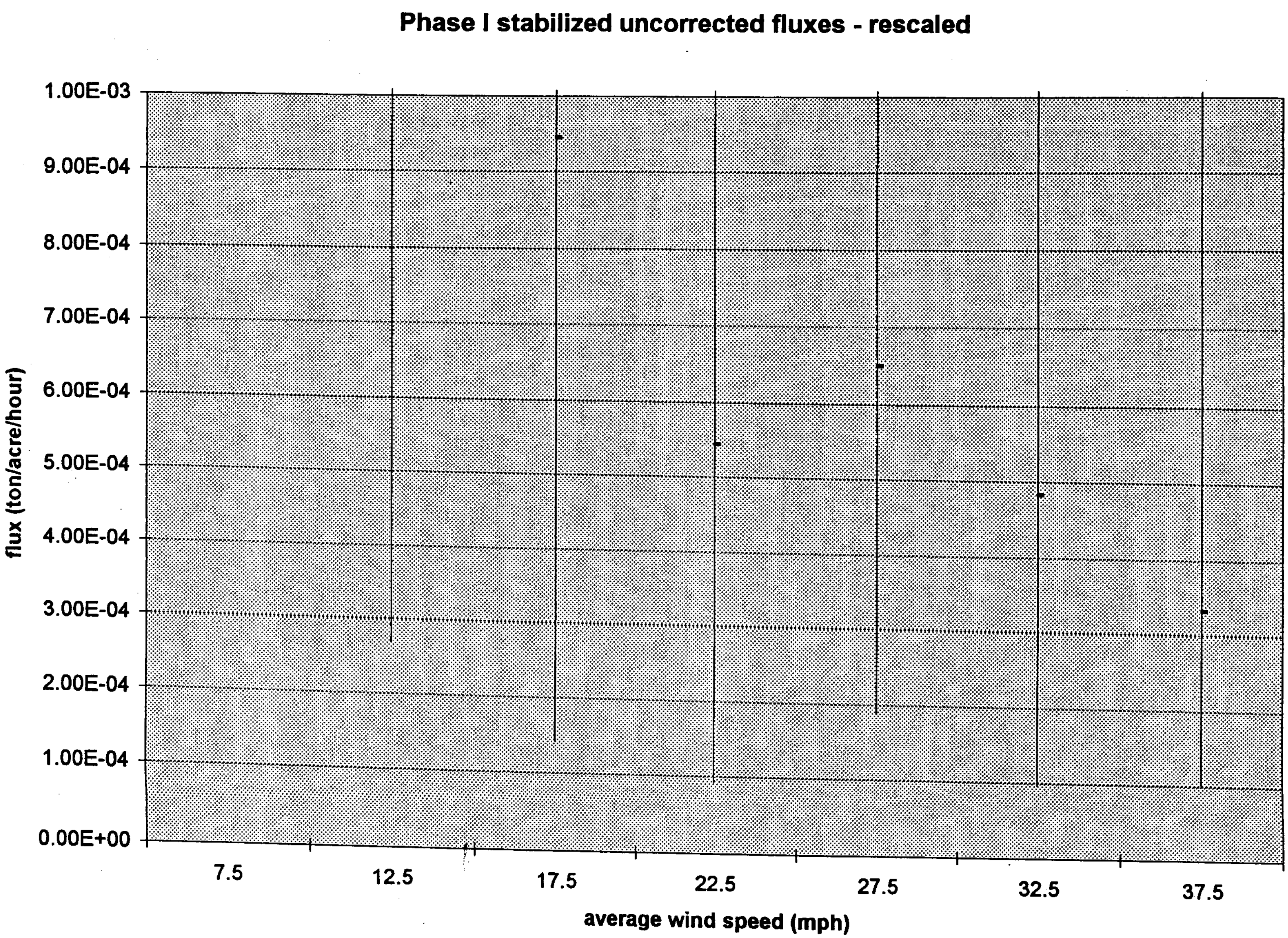


Figure 3 - Geometric mean +/- 1 standard deviation

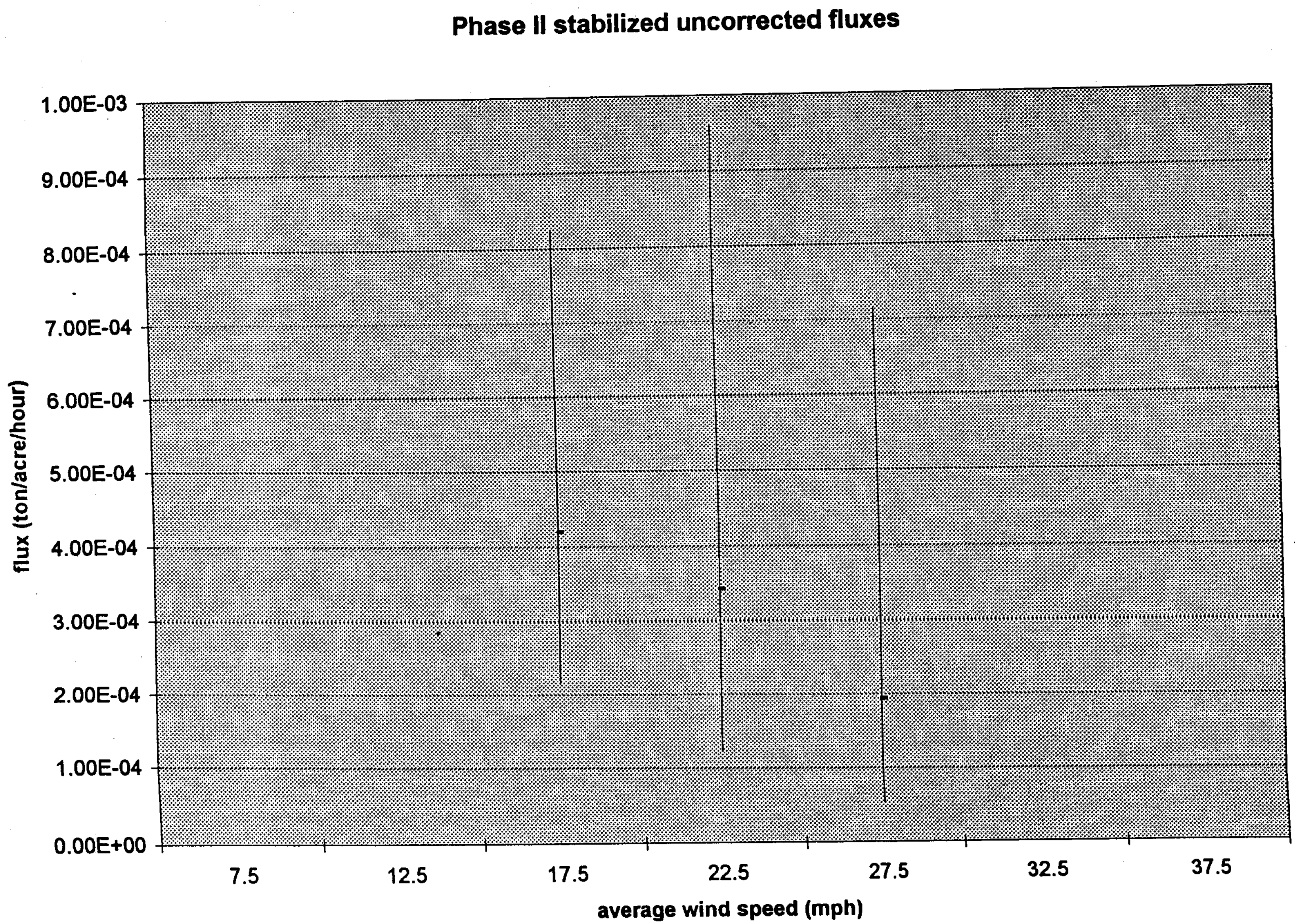


Figure 4

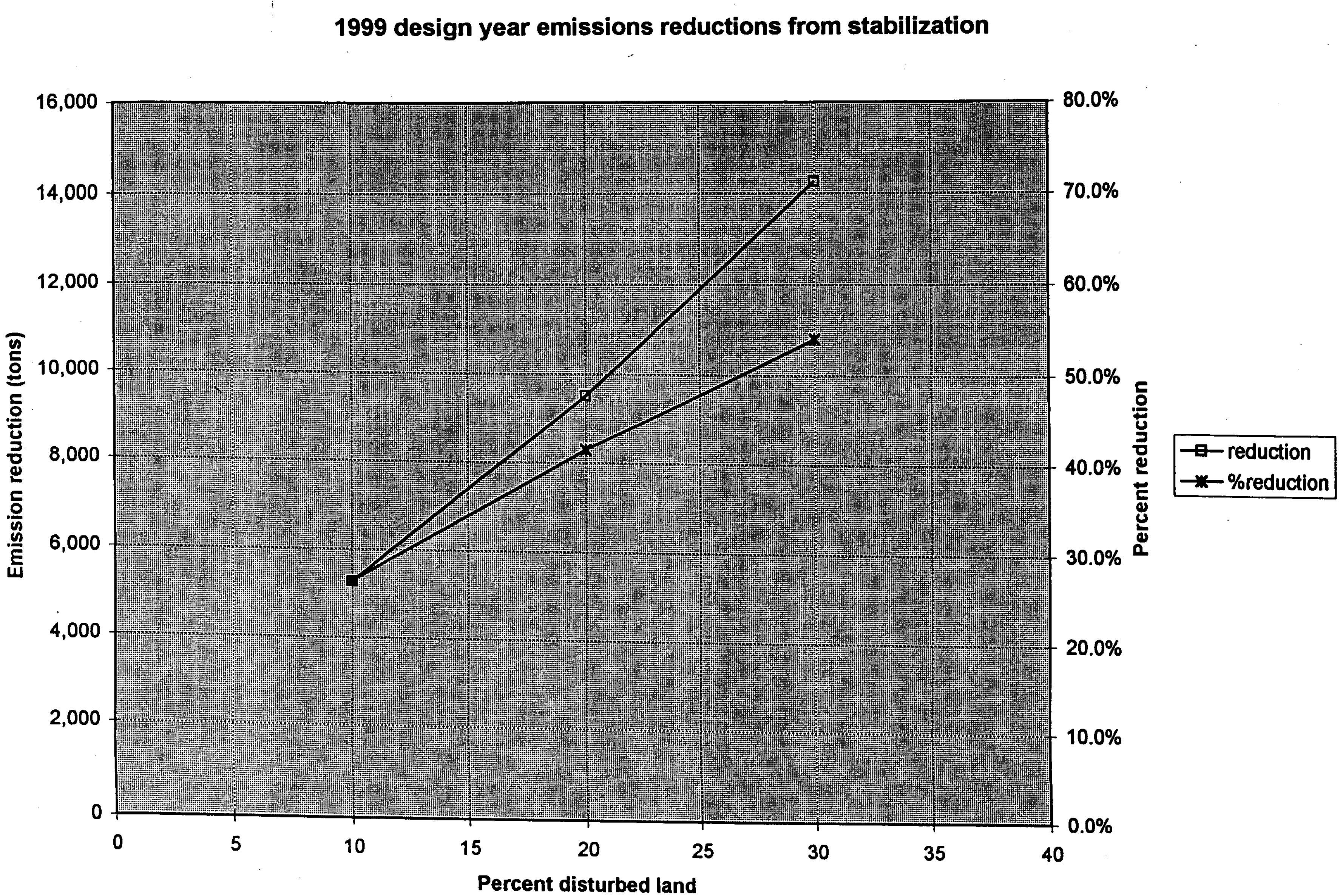

1999 design year emissions reductions from stabilization
Emission reduction (tons)
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Percent reduction
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
0
5
10
15
20
25
30
35
40
Percent disturbed land
reduction
%reduction

Figure 5

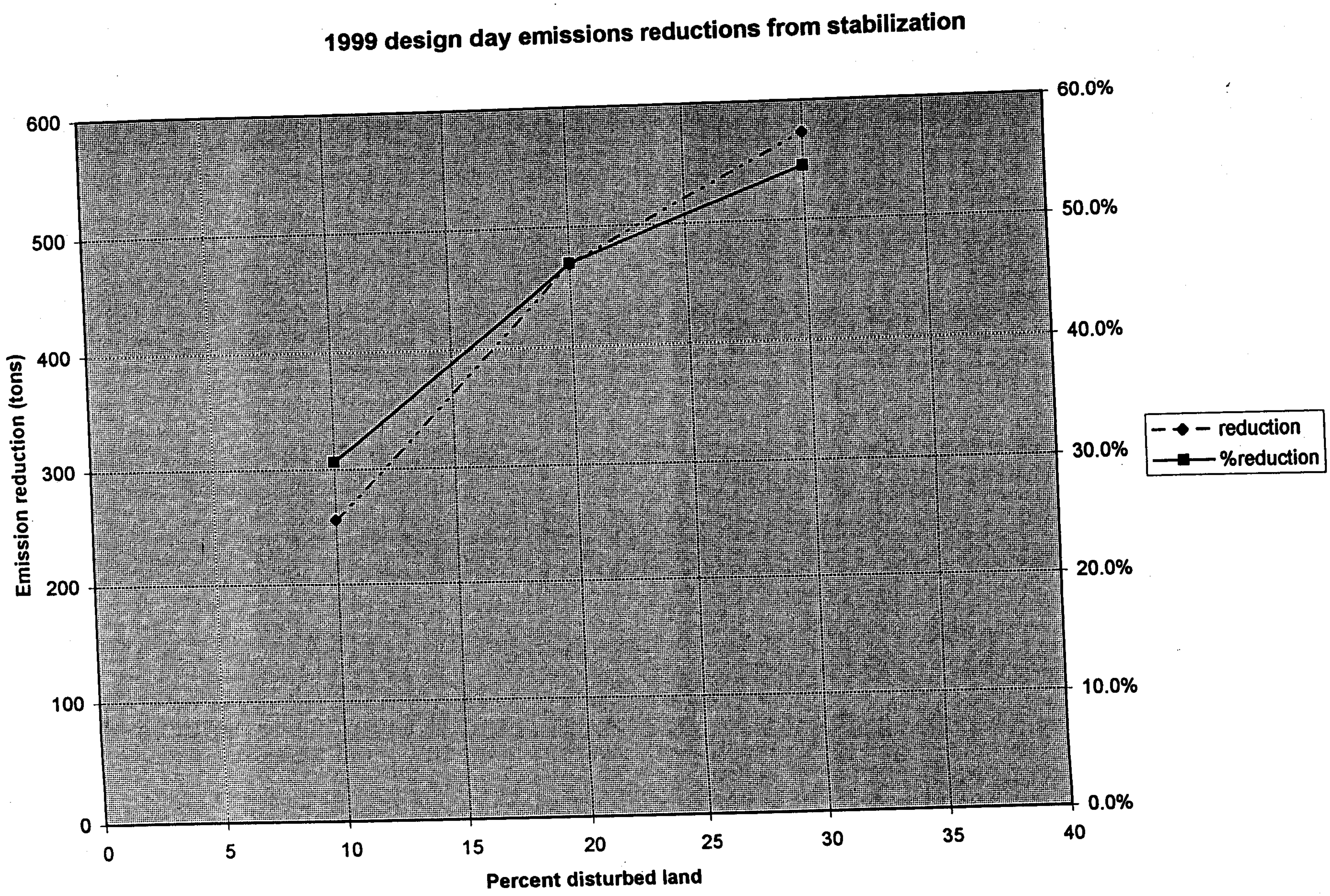

1999 design day emissions reductions from stabilization
Emission reduction (tons)
0
100
200
300
400
500
600
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
0
5
10
15
20
25
30
35
40
Percent disturbed land
reduction
%reduction

Table A - Stabilized uncorrected fluxes

Flux Averages : Phase I				
Wind Speed	Geometric Mean	Geometric Mean	Geometric Mean	Number
(mph)	- 1 Std. Dev		+ 1 Std. Dev	of
	(ton/acre/hr)	(ton/acre/hr)	(ton/acre/hr)	Runs
5 - 9.9		1.12E-03		2
10 - 14.9	2.67E-04	1.17E-03	5.14E-03	11
15 - 19.9	1.42E-04	9.45E-04	6.30E-03	29
20 - 24.9	9.20E-05	5.44E-04	3.22E-03	30
25 - 29.9	1.87E-04	6.50E-04	2.26E-03	27
30 - 34.9	9.57E-05	4.83E-04	2.44E-03	21
35 - 39.9	1.01E-04	3.32E-04	1.10E-03	9

Flux Averages : Phase II				
Wind Speed	Geometric Mean	Geometric Mean	Geometric Mean	Number
(mph)	- 1 Std. Dev		+ 1 Std. Dev	of
	(ton/acre/hr)	(ton/acre/hr)	(ton/acre/hr)	Runs
5 - 9.9	N/A	N/A	N/A	0
10 - 14.9	N/A	N/A	N/A	0
15 - 19.9	2.14E-04	4.20E-04	8.26E-04	22
20 - 24.9	1.22E-04	3.42E-04	9.60E-04	36
25 - 29.9	5.26E-05	1.94E-04	7.15E-04	20
30 - 34.9	N/A	N/A	N/A	0
35 - 39.9	N/A	N/A	N/A	0

Table B - Stabilized spike-corrected fluxes

Corrected Flux Averages - Phase I				
Wind Speed (mph)	Geometric Mean - 1 Std. Dev (ton/acre/hr)	Geometric Mean (ton/acre/hr)	Geometric Mean + 1 Std. Dev (ton/acre/hr)	Number of Runs
5 - 9.9		8.32E-04		2
10 - 14.9	3.82E-04	1.32E-03	4.53E-03	11
15 - 19.9	1.06E-04	8.38E-04	6.59E-03	29
20 - 24.9	7.72E-05	3.76E-04	1.83E-03	30
25 - 29.9	2.54E-04	6.55E-04	1.69E-03	27
30 - 34.9	6.45E-05	3.68E-04	2.10E-03	21
35 - 39.9	1.57E-04	3.86E-04	9.52E-04	9

Corrected Flux Averages - Phase II				
Wind Speed (mph)	Geometric Mean - 1 Std. Dev (ton/acre/hr)	Geometric Mean (ton/acre/hr)	Geometric Mean + 1 Std. Dev (ton/acre/hr)	Number of Runs
		In process		
		Not available at		
		deadline		

Table C - Emissions reductions for varying proportions of stabilized land

[illegible]

	stable/unstable		Phase II	Phase II	ratio for Phase II	Phase II
	scenario	unstabilized	stabilized	reduction	stabilized/unstabilized	%reduction
	(units)	tons	tons	tons		
	90/10	19,959	14,705	5,254	74%	26%
	80/20	22,933	13,424	9,509	59%	41%
	variable	23,011	13,395	9,616	58%	42%
	70/30	26,407	12,144	14,263	46%	54%

[illegible]

	25-Feb-99					
	stable/unstable		Phase II	Phase II	ratio for Phase II	Phase II
	scenario	unstabilized	stabilized	reduction	stabilized/unstabilized	%reduction
	(units)	tons	tons	tons		
	90/10	836	580	256	69%	31%
	80/20	998	529	469	53%	47%
	variable	1,006	527	480	52%	48%
	70/30	1,051	478	573	45%	55%

Table 1 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio

1	cc	3	318	90%	10%	2.4	0.0%
2	ww	18	1,574	90%	10%	53.8	0.3%
3	sl	5	1,315	90%	10%	12.6	0.1%
4	bs	48	22,369	90%	10%	3,140.7	15.7%
5	pl	79	8,288	90%	10%	1,226.7	6.1%
6	mc	14	422	90%	10%	11.9	0.1%
7	ms	23	170	90%	10%	7.6	0.0%
8	dm	16	2,192	90%	10%	65.4	0.3%
9	fl	59	7,833	90%	10%	884.0	4.4%
10	pt	26	6,764	90%	10%	834.7	4.2%
11	jd	12	3,116	90%	10%	79.3	0.4%
12	pm	26	30,662	90%	10%	1,595.4	8.0%
13	wj	20	1,523	90%	10%	61.9	0.3%
14	gv	33	26,021	90%	10%	1,684.7	8.4%
15	cw	20	192	90%	10%	28.1	0.1%
16	sa	35	207	90%	10%	13.8	0.1%
17	lo	95	26,102	90%	10%	6,077.8	30.5%
18	pv	162	12,125	90%	10%	4,178.3	20.9%
	Total	694	151,189			19,959.1	100.0%

Table 2 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio 80/20

Polygon id	letter code	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	80%	20%	2.8	0.0%
2	ww	18	1,574	80%	20%	65.5	0.3%
3	sl	5	1,315	80%	20%	15.4	0.1%
4	bs	48	22,369	80%	20%	3,467.8	15.1%
5	pl	79	8,288	80%	20%	1,489.2	6.5%
6	mc	14	422	80%	20%	14.3	0.1%
7	ms	23	170	80%	20%	9.2	0.0%
8	dm	16	2,192	80%	20%	79.6	0.3%
9	fl	59	7,833	80%	20%	1,068.1	4.7%
10	pt	26	6,764	80%	20%	405.7	1.8%
11	jd	12	3,116	80%	20%	94.9	0.4%
12	pm	26	30,662	80%	20%	1,926.6	8.4%
13	wj	20	1,523	80%	20%	74.5	0.3%
14	gv	33	26,021	80%	20%	2,031.0	8.9%
15	cw	20	192	80%	20%	28.4	0.1%
16	sa	35	207	80%	20%	16.7	0.1%
17	lo	95	26,102	80%	20%	7,211.9	31.4%
18	pv	162	12,125	80%	20%	4,931.5	21.5%
	Total	694	151,189			22,933.1	100.0%

Table 3 1999 PM-10 Valley-wide emissions estimate
Varying stable/unstable ratio
Pessimistic estimate of effects of human activity on stability

Polygon id	letter code	#hours wind >= 20 mph	[illegible] vacant land [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	60%	40%	3.6	0.0%
2	ww	18	1,574	70%	30%	77.2	0.3%
3	sl	5	1,315	60%	40%	20.9	0.1%
4	bs	48	22,369	80%	20%	3,467.8	15.1%
5	pl	79	8,288	80%	20%	1,489.2	6.5%
6	mc	14	422	60%	40%	19.3	0.1%
7	ms	23	170	60%	40%	12.3	0.1%
8	dm	16	2,192	70%	30%	93.9	0.4%
9	fl	59	7,833	80%	20%	1,068.1	4.6%
10	pt	26	6,764	80%	20%	405.7	1.8%
11	jd	12	3,116	60%	40%	126.2	0.5%
12	pm	26	30,662	80%	20%	1,926.6	8.4%
13	wj	20	1,523	70%	30%	74.5	0.3%
14	gv	33	26,021	80%	20%	2,031.0	8.8%
15	cw	20	192	60%	40%	28.9	0.1%
16	sa	35	207	60%	40%	22.5	0.1%
17	lo	95	26,102	80%	20%	7,211.9	31.3%
18	pv	162	12,125	80%	20%	4,931.5	21.4%
	Total	694	151,189			23,011.1	100.0%

Table 4 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	70%	30%	3.2	0.0%
2	ww	18	1,574	70%	30%	77.2	0.3%
3	sl	5	1,315	70%	30%	18.2	0.1%
4	bs	48	22,369	70%	30%	3,794.8	14.4%
5	pl	79	8,288	70%	30%	1,751.7	6.6%
6	mc	14	422	70%	30%	16.8	0.1%
7	ms	23	170	70%	30%	10.7	0.0%
8	dm	16	2,192	70%	30%	93.9	0.4%
9	fl	59	7,833	70%	30%	1,252.2	4.7%
10	pt	26	6,764	70%	30%	476.7	1.8%
11	jd	12	3,116	70%	30%	110.5	0.4%
12	pm	26	30,662	70%	30%	2,257.9	8.6%
13	wj	20	1,523	70%	30%	87.2	0.3%
14	gv	33	26,021	70%	30%	2,377.0	9.0%
15	cw	20	192	70%	30%	28.6	0.1%
16	sa	35	207	70%	30%	19.6	0.1%
17	lo	95	26,102	70%	30%	8,346.0	31.6%
18	pv	162	12,125	70%	30%	5,684.8	21.5%
	Total	694	151,189			26,407.0	100.0%

Table 5 Design Day PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio
25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	90%	10%	0.0	0.0%
2	ww	1	1,574	90%	10%	3.2	0.4%
3	sl	0	1,315	90%	10%	0.0	0.0%
4	bs	2	22,369	90%	10%	85.0	10.2%
5	pl	3	8,288	90%	10%	46.1	5.5%
6	mc	2	422	90%	10%	2.3	0.3%
7	ms	4	170	90%	10%	1.4	0.2%
8	dm	1	2,192	90%	10%	4.5	0.5%
9	fl	4	7,833	90%	10%	57.4	6.9%
10	pt	3	6,764	90%	10%	37.6	4.5%
11	jd	1	3,116	90%	10%	6.3	0.8%
12	pm	4	30,662	90%	10%	305.9	36.6%
13	wj	3	1,523	90%	10%	12.1	1.4%
14	gv	0	26,021	90%	10%	0.0	0.0%
15	cw	0	192	90%	10%	0.0	0.0%
16	sa	4	207	90%	10%	1.5	0.2%
17	lo	4	26,102	90%	10%	191.2	22.9%
18	pv	3	12,125	90%	10%	81.9	9.8%
	Total	39	151,189			836.4	100.0%

Table 6 Design Day PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio
25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	80%	20%	0.0	0.0%
2	ww	1	1,574	80%	20%	3.9	0.4%
3	sl	0	1,315	80%	20%	0.0	0.0%
4	bs	2	22,369	80%	20%	103.4	10.4%
5	pl	3	8,288	80%	20%	56.1	5.6%
6	mc	2	422	80%	20%	2.6	0.3%
7	ms	4	170	80%	20%	1.7	0.2%
8	dm	1	2,192	80%	20%	5.4	0.5%
9	fl	4	7,833	80%	20%	69.8	7.0%
10	pt	3	6,764	80%	20%	45.8	4.6%
11	jd	1	3,116	80%	20%	7.7	0.8%
12	pm	4	30,662	80%	20%	356.6	35.7%
13	wj	3	1,523	80%	20%	13.9	1.4%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	80%	20%	0.0	0.0%
16	sa	4	207	80%	20%	1.9	0.2%
17	lo	4	26,102	80%	20%	232.7	23.3%
18	pv	3	12,125	80%	20%	96.5	9.7%
	Total	39	151,189			998.2	100.0%

Table 7 Design Day PM-10 Valley-wide emissions estimate

Varying stable/unstable ratio — Pessimistic estimate of effects of human activity on stability

25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	60%	40%	0.0	0.0%
2	ww	1	1,574	70%	30%	4.6	0.5%
3	sl	0	1,315	60%	40%	0.0	0.0%
4	bs	2	22,369	80%	20%	103.4	10.3%
5	pl	3	8,288	80%	20%	56.1	5.6%
6	mc	2	422	60%	40%	3.4	0.3%
7	ms	4	170	60%	40%	2.3	0.2%
8	dm	1	2,192	70%	30%	6.4	0.6%
9	fl	4	7,833	80%	20%	69.8	6.9%
10	pt	3	6,764	80%	20%	45.8	4.5%
11	jd	1	3,116	60%	40%	10.5	1.0%
12	pm	4	30,662	80%	20%	356.6	35.4%
13	wj	3	1,523	70%	30%	15.8	1.6%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	60%	40%	0.0	0.0%
16	sa	4	207	60%	40%	2.5	0.2%
17	lo	4	26,102	80%	20%	232.7	23.1%
18	pv	3	12,125	80%	20%	96.5	9.6%
	Total	39	151,189			1,006.4	100.0%

Table 8 Design Day PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio

Polygon #	letter code	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	70%	30%	0.0	0.0%
2	ww	18	1,574	70%	30%	4.6	0.4%
3	sl	5	1,315	70%	30%	0.0	0.0%
4	bs	48	22,369	70%	30%	12.9	1.2%
5	pl	79	8,288	70%	30%	66.1	6.3%
6	mc	14	422	70%	30%	3.0	0.3%
7	ms	23	170	70%	30%	2.0	0.2%
8	dm	16	2,192	70%	30%	6.4	0.6%
9	fl	59	7,833	70%	30%	82.3	7.8%
10	pt	26	6,764	70%	30%	54.0	5.1%
11	jd	12	3,116	70%	30%	9.1	0.9%
12	pm	26	30,662	70%	30%	407.3	38.7%
13	wj	20	1,523	70%	30%	15.8	1.5%
14	gv	33	26,021	70%	30%	0.0	0.0%
15	cw	20	192	70%	30%	0.0	0.0%
16	sa	35	207	70%	30%	2.2	0.2%
17	lo	95	26,102	70%	30%	274.3	26.1%
18	pv	162	12,125	70%	30%	111.2	10.6%
	Total	694	151,189			1,051.2	100.0%

Table 1-II 1999 PM-10 Valley-wide emissions estimate — Phase II stabilized land geometric means
Assuming fixed stable/stabilized ratio — 3/29/00

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	90%	10%	1.8	0.0%
2	ww	18	1,574	90%	10%	38.9	0.3%
3	sl	5	1,315	90%	10%	9.1	0.1%
4	bs	48	22,369	90%	10%	2,570.5	17.5%
5	pl	79	8,288	90%	10%	890.0	6.1%
6	mc	14	422	90%	10%	8.6	0.1%
7	ms	23	170	90%	10%	5.6	0.0%
8	dm	16	2,192	90%	10%	47.3	0.3%
9	fl	59	7,833	90%	10%	645.5	4.4%
10	pt	26	6,764	90%	10%	243.2	1.7%
11	jd	12	3,116	90%	10%	58.4	0.4%
12	pm	26	30,662	90%	10%	1,164.1	7.9%
13	wj	20	1,523	90%	10%	45.3	0.3%
14	gv	33	26,021	90%	10%	1,232.9	8.4%
15	cw	20	192	90%	10%	27.3	0.2%
16	sa	35	207	90%	10%	10.1	0.1%
17	lo	95	26,102	90%	10%	4,560.1	31.0%
18	pv	162	12,125	90%	10%	3,146.1	21.4%
	Total	694	151,189			14,704.8	100.0%

Table 2-II 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

3/29/00

Phase II stabilized land geometric means

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	80%	20%	1.6	0.0%
2	ww	18	1,574	80%	20%	35.6	0.3%
3	sl	5	1,315	80%	20%	8.4	0.1%
4	bs	48	22,369	80%	20%	2,327.4	17.3%
5	pl	79	8,288	80%	20%	815.7	6.1%
6	mc	14	422	80%	20%	7.9	0.1%
7	ms	23	170	80%	20%	5.1	0.0%
8	dm	16	2,192	80%	20%	43.4	0.3%
9	fl	59	7,833	80%	20%	591.2	4.4%
10	pt	26	6,764	80%	20%	222.7	1.7%
11	jd	12	3,116	80%	20%	53.3	0.4%
12	pm	26	30,662	80%	20%	1,064.0	7.9%
13	wj	20	1,523	80%	20%	41.3	0.3%
14	gv	33	26,021	80%	20%	1,127.3	8.4%
15	cw	20	192	80%	20%	26.7	0.2%
16	sa	35	207	80%	20%	8.4	0.1%
17	lo	95	26,102	80%	20%	4,176.8	31.1%
18	pv	162	12,125	80%	20%	2,867.1	21.4%
	Total	694	151,189			13,423.8	100.0%

Table 3-II 1999 PM-10 Valley-wide emissions estimate Phase II stabilized land geometric means

Varying stable/unstable ratio 3/29/00

Pessimistic estimate of effects of human activity on stability

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	60%	40%	1.3	0.0%
2	ww	18	1,574	70%	30%	32.4	0.2%
3	sl	5	1,315	60%	40%	6.2	0.0%
4	bs	48	22,369	80%	20%	2,327.4	17.4%
5	pl	79	8,288	80%	20%	815.7	6.1%
6	mc	14	422	60%	40%	6.5	0.0%
7	ms	23	170	60%	40%	4.1	0.0%
8	dm	16	2,192	70%	30%	39.4	0.3%
9	fl	59	7,833	80%	20%	591.2	4.4%
10	pt	26	6,764	80%	20%	222.7	1.7%
11	jd	12	3,116	60%	40%	42.9	0.3%
12	pm	26	30,662	80%	20%	1,064.0	7.9%
13	wj	20	1,523	70%	30%	37.4	0.3%
14	gv	33	26,021	80%	20%	1,127.3	8.4%
15	cw	20	192	60%	40%	25.5	0.2%
16	sa	35	207	60%	40%	6.9	0.1%
17	lo	95	26,102	80%	20%	4,176.8	31.2%
18	pv	162	12,125	80%	20%	2,867.1	21.4%
	Total	694	151,189			13,394.7	100.0%

Table 4-II 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

3/29/00

Phase II stabilized land geometric means

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	70%	30%	1.4	0.0%
2	ww	18	1,574	70%	30%	32.4	0.3%
3	sl	5	1,315	70%	30%	7.6	0.1%
4	bs	48	22,369	70%	30%	2,084.3	17.2%
5	pl	79	8,288	70%	30%	741.4	6.1%
6	mc	14	422	70%	30%	7.2	0.1%
7	ms	23	170	70%	30%	4.6	0.0%
8	dm	16	2,192	70%	30%	39.4	0.3%
9	fl	59	7,833	70%	30%	536.8	4.4%
10	pt	26	6,764	70%	30%	202.3	1.7%
11	jd	12	3,116	70%	30%	48.1	0.4%
12	pm	26	30,662	70%	30%	964.0	7.9%
13	wj	20	1,523	70%	30%	37.4	0.3%
14	gv	33	26,021	70%	30%	1,021.6	8.4%
15	cw	20	192	70%	30%	26.1	0.2%
16	sa	35	207	70%	30%	8.4	0.1%
17	lo	95	26,102	70%	30%	3,793.3	31.2%
18	pv	162	12,125	70%	30%	2,588.1	21.3%
	Total	694	151,189			12,144.4	100.0%

Table 5-II Design day PM-10 Valley-wide emissions estimate

Assuming fixed stable/stabilized ratio

25-Feb-99

Phase II stabilized land geometric means

Polygon id	Letter code	# hours wind > 20 mph	[illegible]	% Stable	[illegible]	[illegible]	[illegible]
1	cc	0	318	90%	10%	0.0	0.0%
2	ww	1	1,574	90%	10%	2.3	0.4%
3	sl	0	1,315	90%	10%	0.0	0.0%
4	bs	2	22,369	90%	10%	61.5	10.6%
5	pl	3	8,288	90%	10%	33.3	5.7%
6	mc	2	422	90%	10%	1.7	0.3%
7	ms	4	170	90%	10%	1.1	0.2%
8	dm	1	2,192	90%	10%	3.2	0.6%
9	fl	4	7,833	90%	10%	41.5	7.2%
10	pt	3	6,764	90%	10%	27.2	4.7%
11	jd	1	3,116	90%	10%	4.6	0.8%
12	pm	4	30,662	90%	10%	227.1	39.1%
13	wj	3	1,523	90%	10%	9.3	1.6%
14	gv	0	26,021	90%	10%	0.0	0.0%
15	cw	0	192	90%	10%	0.0	0.0%
16	sa	4	207	90%	10%	1.1	0.2%
17	lo	4	26,102	90%	10%	138.2	23.8%
18	pv	3	12,125	90%	10%	28.3	4.9%
	Total	39	151,189			580.4	100.0%

Table 6-II Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means

[illegible]	Letter code	# hours wind > 20 mph	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	80%	20%	0.0	0.0%
2	ww	1	1,574	80%	20%	2.1	0.4%
3	sl	0	1,315	80%	20%	0.0	0.0%
4	bs	2	22,369	80%	20%	56.5	10.7%
5	pl	3	8,288	80%	20%	30.6	5.8%
6	mc	2	422	80%	20%	1.5	0.3%
7	ms	4	170	80%	20%	1.0	0.2%
8	dm	1	2,192	80%	20%	2.9	0.6%
9	fl	4	7,833	80%	20%	38.1	7.2%
10	pt	3	6,764	80%	20%	24.9	4.7%
11	jd	1	3,116	80%	20%	4.2	0.8%
12	pm	4	30,662	80%	20%	205.6	38.9%
13	wj	3	1,523	80%	20%	8.4	1.6%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	80%	20%	0.0	0.0%
16	sa	4	207	80%	20%	1.0	0.2%
17	lo	4	26,102	80%	20%	126.8	24.0%
18	pv	3	12,125	80%	20%	25.4	4.8%
	Total	39	151,189			529.2	100.0%

Table 7-II Design Day PM-10 Valley-wide emissions estimate — Phase II stabilized land geometric means

Varying stable/stabilized ratio — Pessimistic estimate of effects of human activity on stability

25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	60%	40%	0.0	0.0%
2	ww	1	1,574	70%	30%	1.9	0.4%
3	sl	0	1,315	60%	40%	0.0	0.0%
4	bs	2	22,369	80%	20%	56.5	10.7%
5	pl	3	8,288	80%	20%	30.6	5.8%
6	mc	2	422	60%	40%	1.2	0.2%
7	ms	4	170	60%	40%	0.8	0.1%
8	dm	1	2,192	70%	30%	2.7	0.5%
9	fl	4	7,833	80%	20%	38.1	7.2%
10	pt	3	6,764	80%	20%	24.9	4.7%
11	jd	1	3,116	60%	40%	3.8	0.7%
12	pm	4	30,662	80%	20%	205.6	39.0%
13	wj	3	1,523	70%	30%	7.5	1.4%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	60%	40%	0.0	0.0%
16	sa	4	207	60%	40%	0.8	0.2%
17	lo	4	26,102	80%	20%	126.8	24.1%
18	pv	3	12,125	80%	20%	25.4	4.8%
	Total	39	151,189			526.7	100.0%

Table 8-II Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means

Polygon id	Label code	% hours wind >= 20 mph	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	70%	30%	0.0	0.0%
2	ww	1	1,574	70%	30%	1.9	0.3%
3	sl	0	1,315	70%	30%	0.0	0.0%
4	bs	2	22,369	70%	30%	51.5	8.9%
5	pl	3	8,288	70%	30%	27.8	4.8%
6	mc	2	422	70%	30%	1.4	0.2%
7	ms	4	170	70%	30%	0.9	0.2%
8	dm	1	2,192	70%	30%	2.7	0.5%
9	fl	4	7,833	70%	30%	34.8	6.0%
10	pt	3	6,764	70%	30%	22.7	3.9%
11	jd	1	3,116	70%	30%	3.8	0.7%
12	pm	4	30,662	70%	30%	184.0	31.7%
13	wj	3	1,523	70%	30%	7.5	1.3%
14	gv	0	26,021	70%	30%	0.0	0.0%
15	cw	0	192	70%	30%	0.0	0.0%
16	sa	4	207	70%	30%	0.9	0.2%
17	lo	4	26,102	70%	30%	115.4	19.9%
18	pv	3	12,125	70%	30%	22.5	3.9%
	Total	39	151,189			477.8	82.3%

Table A.1.1 - Correspondence of GIS Polygons to Clark County Health District Monitoring stations

Polygon	CCHD station	Site Name	Approximate crossing streets or location
1	CC	City Center	Bonanza & 7th street
2	WW	Winterwood	E Sahara & Nellis
3	SL	Shadow Lane	E Charleston & Shadow
4	BS	Craig Road	I-15 & Craig Road
5	PL	S.E. Valley	W Lake Mead Drive & Van Wagenen
6	MC	East Sahara	Maycliff Storage
7	MS	Micro-scale	E Charleston & Eastern
8	DM	Dime III	
9	FL	East Flamingo	E Flamingo & Cambridge
10	PT	Pittman	Boulder Highway & Pabco Rd
11	JD	J.D. Smith	Bruce & Tonopah
12	PM	Paul Meyer Park	W Flamingo & Rainbow
13	WJ	Walter Johnson	
14	GV	Green Valley	Warm Springs & Stephanie
15	CW	Crestwood	E Charleston & 17th St
16	SA	Sunrise Acres	Sunrise & N. Eastern
17	LO	Lone Mountain	N/A
18	PV	Palo Verde	Palo Verde High School?

Table A.2 - Polygon 4 - CCHD Station bs

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
BS PM-10	1999												
Polygon 4	vacant land area	22369	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		17895.2		17895.2		4473.8		4473.8	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	24	480	20	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
1	21	12	492	21.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
1	21	13	493	22.200001	1.38E-03	24.70			3.42E-04	1.53			26.23
1	21	14	494	23.200001	1.38E-03	24.70			3.42E-04	1.53			26.23
1	21	15	495	21.9	1.38E-03	24.70			3.42E-04	1.53			26.23
1	21	16	496	21.6	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	2	962	21.299999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
2	10	7	967	20.799999	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	8	968	22.299999	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	9	969	21.700001	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	10	970	22.9	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	11	971	22.9	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	13	973	22	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	14	974	23	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	15	975	20.1	1.38E-03	24.70			3.42E-04	1.53			26.23
2	21	15	1239	20.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
2	25	13	1333	20.4	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
2	25	14	1334	20.1	1.38E-03	24.70			3.42E-04	1.53			26.23
3	30	13	2125	21.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
3	30	14	2126	21	1.38E-03	24.70			3.42E-04	1.53			26.23
3	31	14	2150	20.799999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
3	31	15	2151	24.1	1.38E-03	24.70			3.42E-04	1.53			26.23
3	31	16	2152	31.9	3.16E-03	56.55			4.83E-04	2.16			58.71
3	31	17	2153	28	2.57E-03	45.99			1.94E-04	0.87			46.86
4	5	14	2270	21.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
4	5	15	2271	21.9	1.38E-03	24.70			3.42E-04	1.53			26.23
4	9	3	2355	20.799999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
4	9	6	2358	20.200001	1.38E-03	24.70			3.42E-04	1.53			26.23
4	9	8	2360	21	1.38E-03	24.70			3.42E-04	1.53			26.23
4	12	17	2441	20.1	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
5	26	22	3502	21.1	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
7	9	22	4558	23	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
7	9	23	4559	20	1.38E-03	24.70			3.42E-04	1.53			26.23
7	14	20	4676	20.4	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
7	14	22	4678	21	1.38E-03	24.70			3.42E-04	1.53			26.23
9	18	2	6242	27.299999	2.57E-03	45.99	4.90E-04	8.77	1.94E-04	0.87	1.00E-04	0.45	56.07
9	18	3	6243	22	1.38E-03	24.70			3.42E-04	1.53			26.23

Table A.2 - Polygon 4 - CCHD Station bs

10	21	4	7036	34.599998	3.16E-03	56.55	5.88E-04	10.52	4.83E-04	2.16	1.00E-04	0.45	69.68
11	21	9	7785	20.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
11	21	10	7786	21.700001	1.38E-03	24.70			3.42E-04	1.53			26.23
12	1	14	8030	23.799999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
12	1	15	8031	20.9	1.38E-03	24.70			3.42E-04	1.53			26.23
12	3	8	8072	20.700001	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
12	3	9	8073	21.1	1.38E-03	24.70			3.42E-04	1.53			26.23
12	7	20	8180	25.4	2.57E-02	459.91	4.90E-04	8.77	1.94E-04	0.87		0.00	469.54
12	7	22	8182	25.799999	2.57E-02	459.91			1.94E-04	0.87			460.77
12	7	23	8183	20.6	1.38E-03	24.70			3.42E-04	1.53			26.23
12	7	24	8184	21	1.38E-03	24.70			3.42E-04	1.53			26.23
Total													2327.39

Table A.3. - Polygon 1 - CCHD Station cc

CC PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 1	vacant land area	317.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		254		254		63.5		63.5	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
3	31	16	2152	25.200001	2.57E-03	0.65	4.90E-04	0.12	1.94E-04	0.01		0.00	0.79
3	31	17	2153	21.5	1.38E-03	0.35			3.42E-04	0.02			0.37
12	7	20	8180	20.6	1.38E-03	0.35	2.12E-04	0.05	3.42E-04	0.02		0.00	0.43
													1.59
Total													

Table A.4 - Polygon 15 CCHD Station cw

CW PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 15	vacant land area	192	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		153.6		153.6		38.4		38.4	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
5	2	20	2924	35.900002	2.99E-03	0.46	9.24E-04	0.14	3.32E-04	0.01		0	0.61
5	2	21	2925	50	1.10E-02	1.69			6.30E-03	0.24			1.93
5	2	22	2926	50	1.10E-02	1.69			6.30E-03	0.24			1.93
5	2	23	2927	49.599998	7.58E-03	1.16			6.30E-03	0.24			1.41
5	2	24	2928	48.900002	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	1	2929	47.700001	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	2	2930	47.099998	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	3	2931	47	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	4	2932	46.099998	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	5	2933	45.799999	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	6	2934	45.799999	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	7	2935	45.900002	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	8	2936	45.5	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	9	2937	45.299999	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	10	2938	45.400002	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	11	2939	45.200001	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	12	2940	44.200001	5.92E-03	0.91			6.30E-03	0.24			1.15
5	3	13	2941	43.900002	5.92E-03	0.91			6.30E-03	0.24			1.15
5	3	14	2942	43.299999	5.92E-03	0.91			6.30E-03	0.24			1.15
5	3	15	2943	39.900002	2.99E-03	0.46			3.32E-04	0.01			0.47
Total													26.68

Table A.5 - Polygon 8 - CCHD Station dm

DM PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized		
Polygon 8	vacant land area	2192	acres											
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2		
	unstable fraction	0.2		Area (acres)		1753.6		1753.6		438.4		438.4		
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike		
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total	Daily
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons	25-Feb
2	25	15	1335	20.299999	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	2.94
3	15	16	1768	21.4	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
3	20	13	1885	20.299999	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
3	20	14	1886	21.6	1.38E-03	2.42			3.42E-04	0.15			2.57	
3	20	15	1887	21.4	1.38E-03	2.42			3.42E-04	0.15			2.57	
3	20	16	1888	20.200001	1.38E-03	2.42			3.42E-04	0.15			2.57	
3	31	15	2151	21.200001	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
3	31	17	2153	20.799999	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	1	2281	21.6	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
4	6	2	2282	20.4	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	3	2283	21.1	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	4	2284	20.9	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	5	2285	22.700001	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	6	2286	22.299999	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	7	2287	21	1.38E-03	2.42			3.42E-04	0.15			2.57	
7	27	14	4982	20.4	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
Total													43.35	

Table A.6 - Polygon 9 - CCHD Station fl

FL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 9	vacant land area	7832.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		6266		6266		1566.5		1566.5	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	20	21	477	24.4	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
1	20	24	480	25.5	1.38E-03	8.65			1.94E-04	0.30			8.95
1	21	1	481	22.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
1	21	12	492	22.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
1	21	13	493	23.5	1.38E-03	8.65			3.42E-04	0.54			9.18
2	21	11	1235	20	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
2	21	12	1236	22.1	1.38E-03	8.65			3.42E-04	0.54			9.18
2	21	13	1237	22.1	1.38E-03	8.65			3.42E-04	0.54			9.18
2	21	14	1238	22.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
2	25	9	1329	20.5	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
2	25	10	1330	23.4	1.38E-03	8.65			3.42E-04	0.54			9.18
2	25	12	1332	22.9	1.38E-03	8.65			3.42E-04	0.54			9.18
2	25	13	1333	20.6	1.38E-03	8.65			3.42E-04	0.54			9.18
3	3	24	1488	20.200001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
3	4	1	1489	22	1.38E-03	8.65			3.42E-04	0.54			9.18
3	20	16	1888	21.6	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
3	30	11	2123	24.700001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
3	30	12	2124	25.5	2.57E-03	16.10			1.94E-04	0.30			16.41
3	30	13	2125	24.1	1.38E-03	8.65			3.42E-04	0.54			9.18
3	30	14	2126	23.6	1.38E-03	8.65			3.42E-04	0.54			9.18
3	30	15	2127	22.6	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	2	2138	20	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	6	2142	20.5	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	8	2144	20.9	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	13	2149	26	2.57E-03	16.10			1.94E-04	0.30			16.41
3	31	14	2150	27.299999	2.57E-03	16.10			1.94E-04	0.30			16.41
3	31	15	2151	23.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	16	2152	23.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	17	2153	24.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
4	3	17	2225	20.1	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	8	21	2349	21.799999	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	8	22	2350	20	1.38E-03	8.65			3.42E-04	0.54			9.18
4	8	23	2351	21	1.38E-03	8.65			3.42E-04	0.54			9.18
4	27	14	2798	20.200001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	27	24	2808	21.1	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	28	14	2822	20.5	1.38E-03	8.65			3.42E-04	0.54			9.18
4	28	15	2823	20.799999	1.38E-03	8.65			3.42E-04	0.54			9.18

Table A.6 - Polygon 9 - CCHD Station fl

5	2	17	2921	20.4	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
5	2	18	2922	24.4	1.38E-03	8.65			3.42E-04	0.54			9.18
5	2	21	2925	21.1	1.38E-03	8.65			3.42E-04	0.54			9.18
5	2	23	2927	23.6	1.38E-03	8.65			3.42E-04	0.54			9.18
5	12	24	3168	25.9	2.57E-03	16.10	2.12E-04	1.33	1.94E-04	0.30		0.00	17.74
5	13	1	3169	23.6	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	2	3170	21.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	18	3186	20.4	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	19	3187	20.6	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	20	3188	22	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	21	3189	23.700001	1.38E-03	8.65			3.42E-04	0.54			9.18
5	14	18	3210	21.4	1.38E-03	8.65			3.42E-04	0.54			9.18
5	14	22	3214	23.5	1.38E-03	8.65			3.42E-04	0.54			9.18
6	2	23	3671	22	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
6	2	24	3672	23.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
6	3	1	3673	22.6	1.38E-03	8.65			3.42E-04	0.54			9.18
6	3	4	3676	22.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
12	2	23	8063	21.700001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
12	3	8	8072	21.5	1.38E-03	8.65			3.42E-04	0.54			9.18
12	3	9	8073	21.700001	1.38E-03	8.65			3.42E-04	0.54			9.18
12	3	10	8074	20.5	1.38E-03	8.65			3.42E-04	0.54			9.18
12	7	20	8180	21.799999	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
Total													591.16

Table A.7 - Polygon 14 - CCHD Station gv

GV PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 14	vacant land area	26020.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		20816.4		20816.4		5204.1		5204.1	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	20	476	20.1	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
1	20	21	477	23.5	1.38E-03	28.73			3.42E-04	1.78			30.51
1	21	13	493	21.9	1.38E-03	28.73			3.42E-04	1.78			30.51
1	25	14	590	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
4	8	24	2352	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
4	9	2	2354	21	1.38E-03	28.73			3.42E-04	1.78			30.51
5	2	19	2923	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
5	2	24	2928	20.799999	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	1	2929	22.700001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	2	2930	20.200001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	9	2937	20	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	10	2938	20.200001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	13	2941	20.1	1.38E-03	28.73			3.42E-04	1.78			30.51
5	12	24	3168	21.6	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
5	13	1	3169	22.700001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	13	2	3170	20.5	1.38E-03	28.73			3.42E-04	1.78			30.51
5	13	21	3189	25.4	2.57E-03	53.50			1.94E-04	1.01			54.51
5	14	19	3211	21.799999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
5	14	20	3212	21.6	1.38E-03	28.73			3.42E-04	1.78			30.51
6	21	12	4116	22.6	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
6	21	13	4117	20.6	1.38E-03	28.73			3.42E-04	1.78			30.51
6	21	14	4118	20.4	1.38E-03	28.73			3.42E-04	1.78			30.51
7	3	12	4404	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
7	6	20	4484	20.1	1.38E-03	28.73			3.42E-04	1.78			30.51
7	7	5	4493	22.4	1.38E-03	28.73			3.42E-04	1.78			30.51
7	27	14	4982	25.9	2.57E-03	53.50			1.94E-04	1.01			54.51
7	27	15	4983	27.4	2.57E-03	53.50			1.94E-04	1.01			54.51
7	28	18	5010	21.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
8	6	9	5217	20	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
8	6	10	5218	21.200001	1.38E-03	28.73			3.42E-04	1.78			30.51
8	6	11	5219	21	1.38E-03	28.73			3.42E-04	1.78			30.51
8	6	14	5222	20.5	1.38E-03	28.73			3.42E-04	1.78			30.51
11	17	12	7692	20.9	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
Total													1127.26

Table A.8 - Polygon 11 - CCHD Station jd

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
JD PM-10	1999												
Polygon 11	vacant land area	3115.5	acres			0.8		0.8		0.2		0.2	
Excel 5.0	stable fraction	0.8		fraction		2492.4		2492.4		623.1		623.1	
	unstable fraction	0.2		Area (acres)	Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	26	11	611	22.9	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
2	25	15	1335	24.6	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
3	30	13	2125	21.200001	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
3	31	13	2149	21.4	1.38E-03	3.44			3.42E-04	0.21			3.65
3	31	14	2150	26.1	2.57E-03	6.41			1.94E-04	0.12			6.53
3	31	15	2151	24.200001	1.38E-03	3.44			3.42E-04	0.21			3.65
3	31	16	2152	26.5	2.57E-03	6.41			1.94E-04	0.12			6.53
3	31	17	2153	23.1	1.38E-03	3.44			3.42E-04	0.21			3.65
4	12	9	2433	21.6	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
7	27	14	4982	20.299999	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
7	27	15	4983	20.4	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
12	7	20	8180	21.799999	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
Total													53.28

Table A.9 - Polygon 17 - CCHD Station lo

LO PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 17	vacant land area	26101.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		20881.2		20881.2		5220.3		5220.3	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	8	8	176	20.5	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
1	8	9	177	21.9	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	11	179	20.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	13	181	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	14	182	22.4	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	15	183	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
1	20	20	476	25.1	2.57E-03	53.66	4.90E-04	10.23	1.94E-04	1.01		0.00	64.91
1	20	21	477	28	2.57E-03	53.66			1.94E-04	1.01			54.68
1	20	22	478	26.299999	2.57E-03	53.66			1.94E-04	1.01			54.68
1	20	23	479	23.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	11	491	21.5	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	12	492	20	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	13	493	20.1	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	14	494	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	15	495	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	16	496	20.6	1.38E-03	28.82			3.42E-04	1.79			30.60
1	26	12	612	21.6	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	9	14	950	21	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	9	15	951	21.6	1.38E-03	28.82			3.42E-04	1.79			30.60
2	9	16	952	22.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	2	962	22	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	5	965	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	10	970	22.6	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	11	971	25.9	2.57E-03	53.66			1.94E-04	1.01			54.68
2	10	12	972	27.200001	2.57E-03	53.66			1.94E-04	1.01			54.68
2	10	13	973	24.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	15	975	22	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	16	976	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
2	19	10	1186	20.700001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	19	11	1187	20.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	19	13	1189	20.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	21	13	1237	20.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	21	14	1238	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
2	25	12	1332	23.9	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	25	13	1333	22	1.38E-03	28.82			3.42E-04	1.79			30.60
2	25	14	1334	21.6	1.38E-03	28.82			3.42E-04	1.79			30.60
2	25	15	1335	20	1.38E-03	28.82			3.42E-04	1.79			30.60

Table A.9 - Polygon 17 - CCHD Station Io

3	9	9	1617	21.700001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	9	10	1618	25.799999	2.57E-03	53.66			1.94E-04	1.01			54.68
3	9	11	1619	24.6	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	12	1620	24.5	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	13	1621	22.1	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	14	1622	22	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	15	1623	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
3	15	16	1768	22	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	20	14	1886	20.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	20	15	1887	22.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	20	16	1888	20.4	1.38E-03	28.82			3.42E-04	1.79			30.60
3	30	10	2122	21.200001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	30	11	2123	21.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	1	2137	22.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	2	2138	24.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	3	2139	28.1	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	4	2140	27.200001	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	5	2141	25.1	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	6	2142	20.6	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	9	2145	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	10	2146	22.1	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	11	2147	22.6	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	12	2148	23.1	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	13	2149	21.4	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	14	2150	21.4	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	16	2152	29.200001	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	17	2153	22.6	1.38E-03	28.82			3.42E-04	1.79			30.60
4	9	2	2354	21.5	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
4	9	12	2364	20.200001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
5	3	16	2944	20.1	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
5	26	20	3500	23.6	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
5	26	21	3501	22.5	1.38E-03	28.82			3.42E-04	1.79			30.60
5	26	22	3502	21.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
7	15	21	4701	23	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
7	27	15	4983	21	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
10	15	4	6892	24.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
10	16	3	6915	20.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	4	6916	22.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	6	6918	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	10	6922	23.5	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	11	6923	20.4	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	12	6924	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
10	31	4	7276	80.599998	1.69E-02	352.89	3.32E-03	69.33	6.30E-03	32.89		0.00	455.11
11	14	15	7623	72.699997	1.69E-02	352.89	3.32E-03	69.33	6.30E-03	32.89		0.00	455.11

Table A.9 - Polygon 17 - CCHD Station Io

11	17	9	7689	21.6	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	1	14	8030	20.5	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	2	22	8062	23	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	2	23	8063	29.5	2.57E-03	53.66			1.94E-04	1.01			54.68
12	2	24	8064	22.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
12	3	9	8073	23.6	1.38E-03	28.82			3.42E-04	1.79			30.60
12	7	20	8180	24.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	7	21	8181	25.1	2.57E-03	53.66			1.94E-04	1.01			54.68
12	7	22	8182	25	2.57E-03	53.66			1.94E-04	1.01			54.68
12	7	24	8184	20.6	1.38E-03	28.82			3.42E-04	1.79			30.60
12	8	1	8185	22.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
12	8	2	8186	21.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
12	21	12	8508	21.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	21	13	8509	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
Total													4176.75

Table A.10 - Polygon 6 CCHD Station mc

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
MC PM-10	1999									0.2		0.2	
Polygon 6	vacant land area	421.5	acres	fraction		0.8		0.8		84.3		84.3	
Excel 5.0	stable fraction	0.8		Area (acres)		337.2		337.2					
	unstable fraction	0.2			Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
2	10	10	970	20.5	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
2	10	11	971	20.200001	1.38E-03	0.47			3.42E-04	0.03			0.49
2	10	14	974	20	1.38E-03	0.47			3.42E-04	0.03			0.49
2	25	14	1334	25.200001	2.57E-03	0.87	4.90E-04	0.17	1.94E-04	0.02		0.00	1.05
2	25	15	1335	24.1	1.38E-03	0.47			3.42E-04	0.03			0.49
3	30	13	2125	22	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
3	30	14	2126	20.1	1.38E-03	0.47			3.42E-04	0.03			0.49
3	31	14	2150	21.9	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
3	31	15	2151	22.5	1.38E-03	0.47			3.42E-04	0.03			0.49
3	31	16	2152	24.1	1.38E-03	0.47			3.42E-04	0.03			0.49
3	31	18	2154	23.6	1.38E-03	0.47			3.42E-04	0.03			0.49
4	8	23	2351	21.5	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
9	18	2	6242	20.299999	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
12	7	20	8180	20.4	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
Total													7.90

Table A.11 - Polygon 7 - CCHD Station ms

MS PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 7	vacant land area	169.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		135.6		135.6		33.9		33.9	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	26	11	611	23.9	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
2	25	13	1333	20.6	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
2	25	14	1334	25.5	2.57E-03	0.35			1.94E-04	0.01			0.36
2	25	15	1335	24.9	1.38E-03	0.19			3.42E-04	0.01			0.20
2	25	16	1336	21.799999	1.38E-03	0.19			3.42E-04	0.01			0.20
3	9	13	1621	20.6	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
3	9	15	1623	20	1.38E-03	0.19			3.42E-04	0.01			0.20
3	30	11	2123	22.4	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
3	30	12	2124	24	1.38E-03	0.19			3.42E-04	0.01			0.20
3	30	13	2125	25.4	2.57E-03	0.35			1.94E-04	0.01			0.36
3	30	14	2126	24.200001	1.38E-03	0.19			3.42E-04	0.01			0.20
3	30	15	2127	21.6	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	6	2142	21.799999	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	7	2143	20.200001	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	8	2144	20.1	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	9	2145	20.5	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	10	2146	21	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	13	2149	20.1	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	14	2150	22.4	1.38E-03	0.19			3.42E-04	0.01			0.20
4	27	14	2798	20.200001	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
4	27	15	2799	20.5	1.38E-03	0.19			3.42E-04	0.01			0.20
5	13	19	3187	21.6	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
5	14	20	3212	20.200001	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
Total													5.08

Table A.12 - Polygon 5 - CCHD Station pl

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
PL PM-10	1999												
Polygon 5	vacant land area	8,288	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		6630.4		6630.4		1657.6		1657.6	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	21	477	21.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
1	23	18	546	20	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
1	23	19	547	23.4	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	20	548	21.9	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	21	549	22.1	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	22	550	21.5	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	23	551	20.6	1.38E-03	9.15			3.42E-04	0.57			9.72
1	25	15	591	21.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	7	943	20.1	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
2	9	8	944	22.1	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	9	945	22.9	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	10	946	21.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	24	960	23.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	1	961	21.4	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	2	962	21.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	8	968	20.9	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	9	969	22.9	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	10	970	22.799999	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	11	971	22.5	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	12	972	24	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	13	973	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	14	974	23.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	15	975	24.1	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	16	976	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
2	21	19	1243	20.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
2	21	20	1244	21.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
2	21	21	1245	20.1	1.38E-03	9.15			3.42E-04	0.57			9.72
2	25	12	1332	21.9	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
2	25	13	1333	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
2	25	14	1334	20.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
3	3	19	1483	20	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	9	14	1622	22.1	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	20	13	1885	20.6	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	20	14	1886	22	1.38E-03	9.15			3.42E-04	0.57			9.72
3	20	15	1887	22.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
3	30	11	2123	20.200001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	30	13	2125	22.299999	1.38E-03	9.15			3.42E-04	0.57			9.72

Table A.12 - Polygon 5 - CCHD Station pl

3	30	14	2126	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	12	2148	21.200001	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	13	2149	21.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	15	2151	20.1	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	17	2153	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	13	2269	21.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
4	5	14	2270	23.6	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	15	2271	23.4	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	16	2272	22.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	17	2273	21.5	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	18	2274	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	6	15	2295	20	1.38E-03	9.15			3.42E-04	0.57			9.72
4	8	24	2352	20.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
4	9	1	2353	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	9	8	2360	21.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	9	9	2361	21.799999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	9	10	2362	21	1.38E-03	9.15			3.42E-04	0.57			9.72
5	3	1	2929	20.799999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
5	14	19	3211	20.700001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
7	6	20	4484	21.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
7	7	1	4489	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
7	7	5	4493	20.5	1.38E-03	9.15			3.42E-04	0.57			9.72
7	27	14	4982	28.6	2.57E-03	17.04	4.90E-04	3.25	1.94E-04	0.32		0.00	20.61
7	27	15	4983	28.200001	2.57E-03	17.04			1.94E-04	0.32			17.36
7	27	16	4984	20.6	1.38E-03	9.15			3.42E-04	0.57			9.72
7	28	17	5009	20	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
7	28	18	5010	20.4	1.38E-03	9.15			3.42E-04	0.57			9.72
7	28	19	5011	20.4	1.38E-03	9.15			3.42E-04	0.57			9.72
10	6	20	6692	20.5	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
10	16	10	6922	20.700001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
10	16	11	6923	21.5	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	13	6925	21.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	14	6926	20.200001	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	18	6930	20.1	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	19	6931	21.200001	1.38E-03	9.15			3.42E-04	0.57			9.72
11	21	18	7794	22	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	1	14	8030	21.4	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	3	7	8071	20.200001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	3	12	8076	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
12	3	13	8077	20.9	1.38E-03	9.15			3.42E-04	0.57			9.72
12	7	20	8180	21.700001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	7	23	8183	21	1.38E-03	9.15			3.42E-04	0.57			9.72
Total													815.69

Table A.13 - Polygon 12 - CCHD Station pm

PM PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 12	vacant land area	30662	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		24529.6		24529.6		6132.4		6132.4	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	8	6	174	20.299999	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
1	21	11	491	23.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
1	21	12	492	24.200001	1.38E-03	33.85			3.42E-04	2.10			35.95
1	21	13	493	22.299999	1.38E-03	33.85			3.42E-04	2.10			35.95
1	21	14	494	22.299999	1.38E-03	33.85			3.42E-04	2.10			35.95
1	21	15	495	20	1.38E-03	33.85			3.42E-04	2.10			35.95
2	9	22	958	20.299999	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
2	25	10	1330	22.9	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
2	25	11	1331	26	2.57E-03	63.04			1.94E-04	1.19			64.23
2	25	12	1332	29.4	2.57E-03	63.04			1.94E-04	1.19			64.23
2	25	13	1333	22.1	1.38E-03	33.85			3.42E-04	2.10			35.95
3	3	22	1486	23.5	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	9	14	1622	21.299999	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	20	14	1886	20.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	20	15	1887	22.4	1.38E-03	33.85			3.42E-04	2.10			35.95
3	20	16	1888	21.1	1.38E-03	33.85			3.42E-04	2.10			35.95
3	30	12	2124	20.6	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	31	10	2146	20	1.38E-03	33.85			3.42E-04	2.10			35.95
3	31	13	2149	20.9	1.38E-03	33.85			3.42E-04	2.10			35.95
3	31	14	2150	23.6	1.38E-03	33.85			3.42E-04	2.10			35.95
4	8	23	2351	21.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
4	28	12	2820	20.9	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
5	3	14	2942	20.200001	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
5	14	19	3211	22.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
5	26	20	3500	21.5	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
12	7	20	8180	22.200001	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
Total													1064.02

Table A.14 - Polygon 10 - CCHD Station pt

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
PT PM-10	1999												
Polygon 10	vacant land area	6763.5	acres			0.8		0.8		0.2		0.2	
Excel 5.0	stable fraction	0.8		fraction		5410.8		5410.8		1352.7		1352.7	
	unstable fraction	0.2		Area (acres)	Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
2	9	24	960	21.1	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
2	10	2	962	20.700001	1.38E-03	7.47			3.42E-04	0.46			7.93
2	25	12	1332	23	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
2	25	13	1333	23.299999	1.38E-03	7.47			3.42E-04	0.46			7.93
2	25	14	1334	23.299999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	3	19	1483	20.200001	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
3	9	13	1621	20	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
3	9	14	1622	24.200001	1.38E-03	7.47			3.42E-04	0.46			7.93
3	9	15	1623	22.6	1.38E-03	7.47			3.42E-04	0.46			7.93
3	30	11	2123	22	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
3	30	12	2124	22.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	30	13	2125	23.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	30	15	2127	21.1	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	9	2145	20.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	11	2147	20.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	12	2148	22.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	13	2149	25.200001	2.57E-03	13.91			1.94E-04	0.26			14.17
3	31	14	2150	23.4	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	15	2151	24.200001	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	16	2152	20.1	1.38E-03	7.47			3.42E-04	0.46			7.93
4	9	1	2353	20	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
4	9	2	2354	20.700001	1.38E-03	7.47			3.42E-04	0.46			7.93
5	13	21	3189	21.799999	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
5	14	19	3211	20.9	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
7	27	14	4982	23.6	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
7	27	15	4983	23	1.38E-03	7.47			3.42E-04	0.46			7.93
Total													222.73

Table A.15 - Polygon 18 - CCHD Station pv

PV PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 18	vacant land area	12125	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		9700		9700		2425		2425	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	8	9	177	22.700001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
1	8	10	178	20.9	1.38E-03	13.39			3.42E-04	0.83			14.22
1	8	14	182	21.4	1.38E-03	13.39			3.42E-04	0.83			14.22
1	8	15	183	21	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	4	460	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	9	465	22.1	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	10	466	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	17	473	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	18	474	24.6	2.57E-03	24.93			3.42E-04	0.83			25.76
1	20	19	475	28.1	2.57E-03	24.93			1.94E-04	0.47			25.40
1	20	20	476	30	3.16E-03	30.65			1.94E-04	0.47			31.12
1	20	21	477	26.299999	2.57E-03	24.93			1.94E-04	0.47			25.40
1	20	22	478	31.5	3.16E-03	30.65			4.83E-04	1.17			31.82
1	20	23	479	32.099998	3.16E-03	30.65			4.83E-04	1.17			31.82
1	20	24	480	24.5	1.38E-03	13.39			3.42E-04	0.83			14.22
1	21	1	481	29.5	2.57E-03	24.93			1.94E-04	0.47			25.40
1	21	2	482	32.900002	3.16E-03	30.65			4.83E-04	1.17			31.82
1	21	3	483	27.6	2.57E-03	24.93			1.94E-04	0.47			25.40
1	21	15	495	20.6	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
2	9	13	949	20.5	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
2	9	14	950	20.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	15	951	24.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	16	952	23.6	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	21	957	20.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	22	958	26.4	2.57E-03	24.93			3.42E-04	0.83			25.76
2	9	23	959	22.9	1.38E-03	13.39			3.42E-04	0.83			14.22
2	10	5	965	21.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	10	11	971	21.5	1.38E-03	13.39			3.42E-04	0.83			14.22
2	10	12	972	36	2.99E-03	29.00			3.32E-04	0.81			29.81
2	10	13	973	22.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	11	1235	20.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
2	21	12	1236	24	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	13	1237	23.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	14	1238	25	2.57E-03	24.93			1.94E-04	0.47			25.40
2	21	15	1239	23.9	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	16	1240	25.6	2.57E-03	24.93			1.94E-04	0.47			25.40
2	25	9	1329	22.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27

Table A.15 - Polygon 18 - CCHD Station pv

2	25	10	1330	24.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	25	12	1332	27	2.57E-03	24.93			1.94E-04	0.47			25.40
3	3	12	1476	21.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	3	13	1477	22	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	14	1478	23	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	15	1479	21.5	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	16	1480	23.5	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	17	1481	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	18	1482	25.299999	2.57E-03	24.93			1.94E-04	0.47			25.40
3	3	19	1483	26.200001	2.57E-03	24.93			1.94E-04	0.47			25.40
3	3	20	1484	21.6	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	23	1487	22.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	24	1488	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	8	23	1607	20.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	8	24	1608	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	1	1609	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	2	1610	24	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	3	1611	22.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	4	1612	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	14	1622	21.4	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	15	1623	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	16	1624	20.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	15	16	1768	20.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	20	13	1885	21.200001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	20	14	1886	23.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	15	1887	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	16	1888	21.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	17	1889	20.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	18	1890	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	19	1891	22	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	20	1892	22.5	1.38E-03	13.39			3.42E-04	0.83			14.22
3	21	16	1912	20.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	23	5	1949	20.9	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	23	6	1950	22.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	23	8	1952	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	30	9	2121	22.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	30	10	2122	24.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	30	11	2123	27.200001	2.57E-03	24.93			1.94E-04	0.47			25.40
3	30	12	2124	26.700001	2.57E-03	24.93			1.94E-04	0.47			25.40
3	30	13	2125	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	31	12	2148	25.799999	2.57E-03	24.93			1.94E-04	0.47			25.40
3	31	13	2149	29.4	2.57E-03	24.93			1.94E-04	0.47			25.40
3	31	14	2150	35.799999	2.99E-03	29.00			3.32E-04	0.81			29.81
3	31	15	2151	31.299999	3.16E-03	30.65			4.83E-04	1.17			31.82

Table A.15 - Polygon 18 - CCHD Station pv

3	31	21	2157	21	1.38E-03	13.39			3.42E-04	0.83			14.22
4	3	14	2222	20.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	3	15	2223	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	3	17	2225	22.6	1.38E-03	13.39			3.42E-04	0.83			14.22
4	8	15	2343	23.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	8	16	2344	21.5	1.38E-03	13.39			3.42E-04	0.83			14.22
4	8	21	2349	25.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	8	22	2350	28.700001	2.57E-03	24.93			1.94E-04	0.47			25.40
4	8	23	2351	24.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	9	2	2354	23.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	9	12	2364	21.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	14	5	2477	22.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	26	23	2783	23.5	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	26	24	2784	34.5	3.16E-03	30.65			4.83E-04	1.17			31.82
4	27	1	2785	21.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
4	27	18	2802	22.1	1.38E-03	13.39			3.42E-04	0.83			14.22
4	27	19	2803	25.299999	2.57E-03	24.93			1.94E-04	0.47			25.40
4	27	20	2804	23	1.38E-03	13.39			3.42E-04	0.83			14.22
4	27	21	2805	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	28	13	2821	20	1.38E-03	13.39			3.42E-04	0.83			14.22
5	2	17	2921	21.799999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
5	3	14	2942	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
5	3	15	2943	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
5	3	16	2944	22.1	1.38E-03	13.39			3.42E-04	0.83			14.22
5	12	22	3166	26	2.57E-03	24.93	4.90E-04	4.75	1.94E-04	0.47		0.00	30.15
5	12	23	3167	23.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	12	24	3168	23.4	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	2	3170	20.4	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	3	3171	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	15	3183	20	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	16	3184	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	17	3185	23.1	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	21	3189	23.1	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	22	3190	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	14	16	3208	20.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
5	14	17	3209	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	14	18	3210	25.5	2.57E-03	24.93			1.94E-04	0.47			25.40
5	14	19	3211	26.9	2.57E-03	24.93			1.94E-04	0.47			25.40
5	14	20	3212	20.4	1.38E-03	13.39			3.42E-04	0.83			14.22
5	26	20	3500	22.6	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
5	26	21	3501	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
5	26	22	3502	20.4	1.38E-03	13.39			3.42E-04	0.83			14.22
6	2	21	3669	22.200001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
6	16	14	3998	20.9	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27

Table A.15 - Polygon 18 - CCHD Station pv

6	21	13	4117	21.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
6	25	15	4215	20.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
6	25	16	4216	21.1	1.38E-03	13.39			3.42E-04	0.83			14.22
6	25	20	4220	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
7	3	14	4406	20	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
7	15	21	4701	24	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
7	27	15	4983	20.799999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
8	30	14	5798	20	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
10	16	11	6923	20.200001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
10	29	4	7228	21.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
11	8	8	7472	20.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
11	8	9	7473	23.4	1.38E-03	13.39			3.42E-04	0.83			14.22
11	8	10	7474	21.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
11	8	12	7476	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
11	8	14	7478	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
11	17	5	7685	22.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
11	17	6	7686	28.5	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	7	7687	25.1	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	8	7688	29.4	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	9	7689	30.1	3.16E-03	30.65			4.83E-04	1.17			31.82
11	17	10	7690	31.799999	3.16E-03	30.65			4.83E-04	1.17			31.82
11	17	11	7691	29.5	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	12	7692	23.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
11	17	13	7693	22	1.38E-03	13.39			3.42E-04	0.83			14.22
12	1	6	8022	21.799999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
12	2	23	8063	21.1	1.38E-03	13.39			3.42E-04	0.83			14.22
12	2	24	8064	25.9	2.57E-03	24.93			1.94E-04	0.47			25.40
12	3	1	8065	25.200001	2.57E-03	24.93			1.94E-04	0.47			25.40
12	3	9	8073	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
12	3	13	8077	22	1.38E-03	13.39			3.42E-04	0.83			14.22
12	3	14	8078	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
12	3	15	8079	20.6	1.38E-03	13.39			3.42E-04	0.83			14.22
12	7	20	8180	27.4	2.57E-03	24.93	4.90E-04	4.75	1.94E-04	0.47		0.00	30.15
12	7	21	8181	26.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
12	7	22	8182	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
12	8	1	8185	31.299999	3.16E-03	30.65			1.94E-04	0.47			31.12
12	8	2	8186	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
Total													2867.08

Table A.16 - Polygon 16 - CCHD Station sa

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
SA PM-10	1999												
Polygon 16	vacant land area	207	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		165.6		165.6		41.4		41.4	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	12	492	22.799999	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
1	21	13	493	21.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
1	21	14	494	21.6	1.38E-03	0.23			3.42E-04	0.01			0.24
1	21	15	495	22.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
1	21	16	496	20.299999	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	9	969	21	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
2	10	10	970	22.1	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	11	971	22.1	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	12	972	21.4	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	13	973	21.799999	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	14	974	20.9	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	15	975	20.700001	1.38E-03	0.23			3.42E-04	0.01			0.24
2	25	12	1332	20.299999	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
2	25	13	1333	21.700001	1.38E-03	0.23			3.42E-04	0.01			0.24
2	25	14	1334	21.5	1.38E-03	0.23			3.42E-04	0.01			0.24
2	25	15	1335	22.299999	1.38E-03	0.23			3.42E-04	0.01			0.24
3	31	13	2149	20.700001	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
3	31	14	2150	23.6	1.38E-03	0.23			3.42E-04	0.01			0.24
3	31	15	2151	23.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
3	31	16	2152	29.6	2.57E-03	0.43			1.94E-04	0.01			0.43
3	31	17	2153	26.200001	2.57E-03	0.43			1.94E-04	0.01			0.43
5	26	21	3501	20	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
5	26	22	3502	21.5	1.38E-03	0.23			3.42E-04	0.01			0.24
7	14	20	4676	20.6	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
9	18	2	6242	22	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	1	14	8030	20.9	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	1	15	8031	20.700001	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	1	8065	21.6	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	3	3	8067	20.1	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	8	8072	21.299999	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	9	8073	21.6	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	10	8074	'21.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
12	7	20	8180	24.799999	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	7	21	8181	20	1.38E-03	0.23			3.42E-04	0.01			0.24
12	7	22	8182	22.4	1.38E-03	0.23			3.42E-04	0.01			0.24
													9.23
Total													

Table A.17 - Polygon 3 - CCHD Station sl

SL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 3	vacant land area	1315	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		1052		1052		263		263	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	Wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
3	31	13	2149	20.799999	1.38E-03	1.45	2.12E-04	0.22	3.42E-04	0.09		0.00	1.76
3	31	16	2152	23.700001	1.38E-03	1.45			3.42E-04	0.09			1.54
3	31	17	2153	21.6	1.38E-03	1.45			3.42E-04	0.09			1.54
6	3	5	3677	21.1	1.38E-03	1.45	2.12E-04	0.22	3.42E-04	0.09		0.00	1.76
12	7	20	8180	20.1	1.38E-03	1.45	2.12E-04	0.22	3.42E-04	0.09		0.00	1.76
Total													8.38

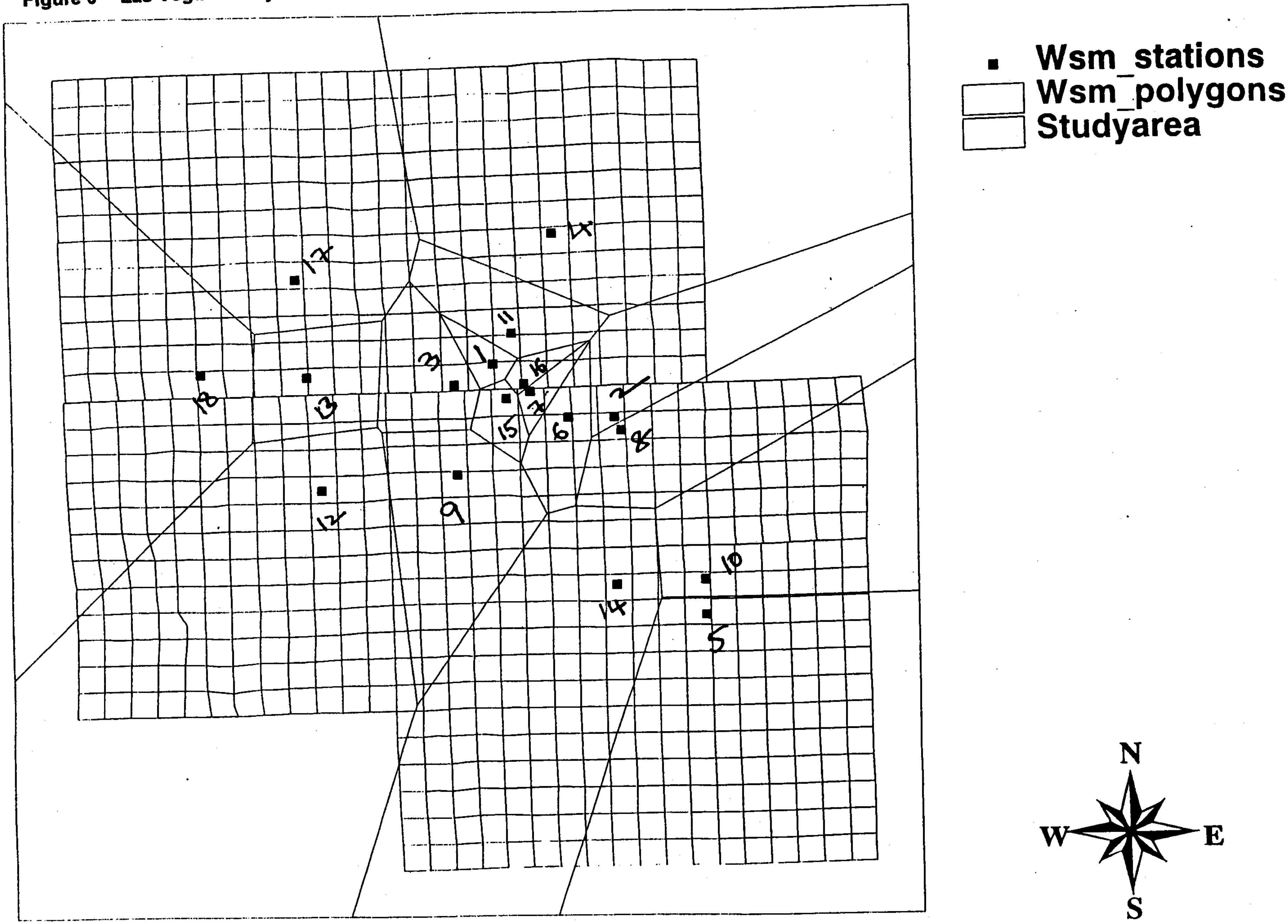
Table A.18 - Polygon 13 - CCHD Station wj

WJ PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 13	vacant land area	1522.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		1218		1218		304.5		304.5	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	21	12	492	20.799999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	9	16	952	20.799999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	21	14	1238	20.200001	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	25	11	1331	20.9	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	25	12	1332	29.700001	2.57E-03	3.13			1.94E-04	0.06			3.19
2	25	13	1333	25.799999	2.57E-03	3.13			1.94E-04	0.06			3.19
3	9	13	1621	23.799999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
3	9	14	1622	23.200001	1.38E-03	1.68			3.42E-04	0.10			1.78
3	20	15	1887	20.700001	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
3	31	10	2146	21.5	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
3	31	14	2150	21.5	1.38E-03	1.68			3.42E-04	0.10			1.78
3	31	16	2152	21.5	1.38E-03	1.68			3.42E-04	0.10			1.78
3	31	17	2153	22	1.38E-03	1.68			3.42E-04	0.10			1.78
10	16	10	6922	20.299999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
12	3	1	8065	20.299999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
12	7	20	8180	21.200001	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
12	7	21	8181	21.5	1.38E-03	1.68			3.42E-04	0.10			1.78
12	7	22	8182	22	1.38E-03	1.68			3.42E-04	0.10			1.78
12	8	1	8185	20	1.38E-03	1.68			3.42E-04	0.10			1.78
12	21	13	8509	20.9	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
Total													41.35

Table A.19 - Polygon 2 - CCHD Station ww

WW PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 2	vacant land area	1574	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		1259.2		1259.2		314.8		314.8	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	1	481	20.4	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
1	26	11	611	20.9	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
2	9	23	959	21.299999	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
2	25	15	1335	21.6	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	9	14	1622	21	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	20	14	1886	21	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	30	13	2125	21.1	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	30	14	2126	20.1	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	14	2150	21.1	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	15	2151	24.6	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	16	2152	20.9	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	17	2153	21.4	1.38E-03	1.74			3.42E-04	0.11			1.85
4	5	13	2269	21.299999	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
4	5	14	2270	21.9	1.38E-03	1.74			3.42E-04	0.11			1.85
4	5	17	2273	20.799999	1.38E-03	1.74			3.42E-04	0.11			1.85
4	5	18	2274	20.799999	1.38E-03	1.74			3.42E-04	0.11			1.85
4	8	23	2351	21.6	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
4	8	24	2352	21	1.38E-03	1.74			3.42E-04	0.11			1.85
Total													35.62

Figure 6 – Las Vegas Valley Thiessen polygons within BLM land disposal boundary



APPENDIX C

Section II

Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands

September 13, 2000 – Draft Final Report

Estimation of Valley-Wide PM-10 emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands

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September 13, 2000

Executive Summary

This final report addresses in detail several subject areas specifically requested by the client, Clark County Comprehensive Planning, as essential for proper documentation of the Valley-wide PM-10 vacant land estimate that is part of the Clark County"s PM-10 State Implementation Plan (SIP) submission to US EPA. It is understood that this report, will be an Appendix in the SIP.

I. The methodology used for developing the estimate of 151,189 acres of vacant land within the BLM Land Disposal Boundary is discussed. The acreage is generated by processing a database comprised of Clark County Assessor's information, dated 11/29/99, about vacant land parcels larger than ½ acre that have a zero integer value for land use codes. The Assessor's database shows 148,575 acres vacant within the Land Disposal Boundary. The process of assigning the land to Thiessen polygons and dividing shared grid cells among polygons introduces a +2,624 acre (+1.8%) error into the vacant land estimate when it is ready to be used for PM-10 valley wide estimate.

II. The rationale for selection of a 20 mph minimum wind-speed for initiation of a Valley-wide PM-10 erosion event is described and explained. The 20 mph threshold corresponds to the 10th percentile PM-10 threshold as determined from the 1995 UNLV wind tunnel field study database. Use of a 20 mph threshold is conservative, producing high estimates of PM-10 emissions, in that only a small percentage of Valley sites are likely to be eroding PM-10 at that velocity. The 50th %ile velocity is about 27 mph.

III. PM-10 emissions factors, corrected for the presence of initial spikes of loose PM-10, are presented for unstable lands, stable lands, stabilized lands (with suppressant freshly applied – not torn up), and stabilized lands with degraded suppressant (torn up). Emission factor values for unstable and stable lands are similar to those reported in the February 22, 2000 Draft report. Stabilized land emission factors have been revised to incorporate the effects of initial PM-10 spikes since the March 28 Draft report. This revision has a very small effect on the valley-wide emissions of PM-10 from a mixture of stable and stabilized (formerly unstable, but now treated with suppressant) lands.

IV. Field survey data are presented demonstrating the feasibility of classifying vacant parcels as stable or unstable, based on the proposed Clark County rule 41. UNLV visited 69 sites, mostly in the south and west parts of the Valley, and found that 63 of 69 visited sites would be rated as "stable" under the proposed rule. If additional site visits to

the north and east of the Valley were made, it is anticipated that the relative number of unstable sites would increase. UNLV developed a flow-chart to ease application of the rule in the field, and proposed an improvement to the rule procedure for measuring rock cover by collecting with a dust pan, then squaring up in a single layer in a cake pan and measuring the squared area.

V. UNLV analyzed 54 aerial orthophotos to determine standing shrub-sized vegetative densities on vacant lands. The arithmetic mean vegetative density was 9.7%, geometric mean 4.6%. If these observed densities were to hold for larger areas, it appears that, in general, there is insufficient standing shrub-sized vegetation on most desert lands to attenuate wind stress and reduce wind erosion.

Keywords: PM-10, wind erosion, emissions factors, Valley-wide, dust suppressants, GIS, Clark County

Acknowledgments

UNLV gratefully acknowledges the help and support of the client, Clark County Comprehensive Planning, which supplied much of the data and information to make this project possible, especially outputs from the Assessor's database and outputs from the digitized aerial photo database, provided by Majed Khater.

The contributions of Rodney Langston, Carrie MacDougall, and Will Cates immeasurably improved the quality of this report. UNLV also thanks the Clark County Health District for wind data and dust permit data, and offers thanks to Cheryl McDonnell-Canan and Lew Wallenmyer for their continued interest, commentary, and interactions on field site visits.

The following UNLV faculty and staff contributed to this project.

Shashi Nambisan
Srinivas Pulugurtha
Jon Becker
Sherrie Edwards
Monte Park
Johan Pulgarin

Any errors and omissions are the sole responsibility of the author and Principal Investigator, David James

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I. Methodology For Computing The Number Of Acres Of Vacant Land Used In The Valley-Wide Estimate Of Wind-Eroded PM-10 Emissions.

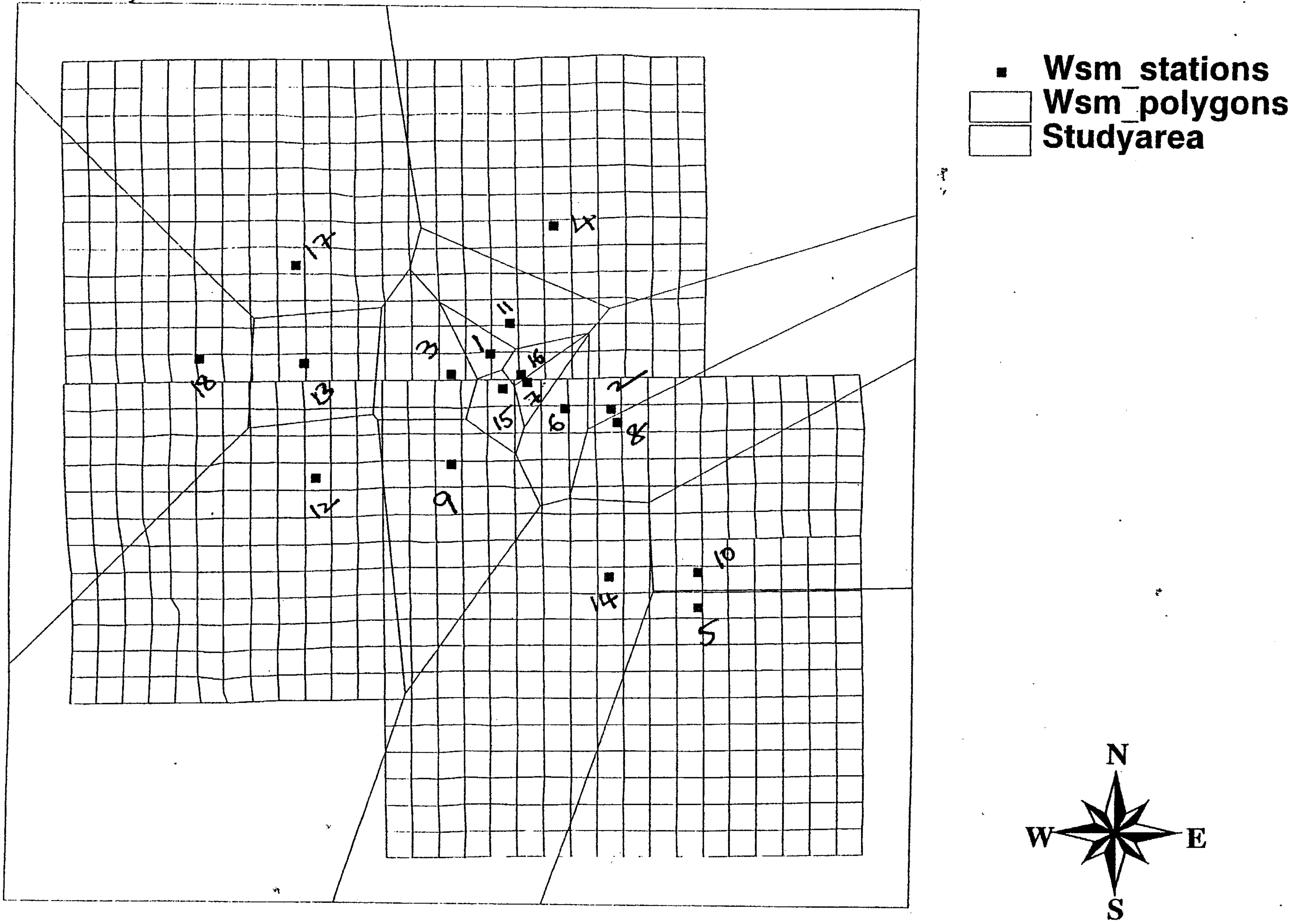
A. Vacant land estimates in each township, range and section were obtained by the following method (Khater, personal communication, Sept 2000)

1. The Clark County Assessor's database, effective date, November 1999 was used to develop information about the number of acres of vacant land in each township, range and section.
2. Queries were run on the database for parcels with any non-zero land use code. Land use codes are assigned integer values. For non-zero land use codes, the entire parcel corresponding to a non-zero code was assumed to be developed, or not vacant.
3. A zero value in the land-use code indicates that the assessor is not aware of any development on the parcel, and the parcel was classified as vacant.
4. This methodology of land use classification introduces some inaccuracies into vacant land estimates. For example, a non-zero code could be assigned to a 2.5-acre residential parcel. However, the parcel could have 0.5 acres that have been developed (with house, driveway and yard) and the remaining 2.0 acres would be undeveloped (vacant). The assessor's database will only change for this parcel if it is subdivided and sold.
5. For a particular township, range and section, the total number of acres of parcels with non-zero land use codes was determined, and subtracted from the total area of the section to develop an estimate of the number of acres of vacant land in that section.
6. On November 29, 1999, UNLV obtained from Clark County Comprehensive Planning (via Rodney Langston), the output from a query to this database to produce a summary of the vacant land areas within the Bureau of Land Management (BLM) Land Disposal Boundary. The query produced a file containing records comprised of the following fields: township, range, section, and vacant land area (acres). The total vacant land area within the Land Disposal Boundary identified by this query was 148,575 acres. A listing of all grid cells identified by this query is displayed in Table B-1 in the Appendix.

B. Locations of Clark County Health District (CCHD) Air Quality Division (AQD) monitoring stations were converted to UTM coordinates and overlaid on a Clark County grid comprised of the sections within the BLM Land Disposal Boundary (Figure 1).

C. An ARCInfo® macro was written to create a set of Thiessen polygons using the CCHD AQD monitoring station locations as the origins. Straight lines were drawn to connect monitoring station locations.

Figure 1: Thiessen polygons centered around CCHD wind monitoring stations – superimposed on BLM Land disposal boundary



Perpendicular bisectors were then drawn outward from the lines connecting the monitoring stations. The lines were extended until they intersected another perpendicular bisector, then stopped. These perpendicular bisectors comprise the boundaries of the Thiessen polygons. Bisectors that extended to the BLM boundary stop at the BLM boundary. These Thiessen polygons became a layer in the ARCInfo® Geographic Information Systems (GIS) database.

D. A database query was developed and run to find all grid cells (sections) touched or contained by each Thiessen polygon. The total vacant land area associated with each Thiessen polygon was then computed by summing the vacant land areas for all grid cells touched by or contained within each Thiessen polygon.

E. The method described in step D leads to vacant land areas in grid cells straddling a Thiessen polygon boundary being counted on each side of the boundary. As a result of this "double-counting," vacant land areas associated with each polygon would be overestimated if the "double-counting" were not corrected. Because of the duplication of grid cells, total vacant land area associated with the Thiessen polygons, prior to correction, was 183,345 acres. A listing of all grid cells associated with each polygon is contained in Table B-2 in the Appendix.

F. The following technique was developed to correct the double-counting error.
   1. A Microsoft Access97® database was developed by UNLV's Srinivas Pulugurtha that labeled each township, range and section with a unique record identifier.
   2. After assignment of grid cells to the Thiessen polygons, and entry of this information into the database. A query was run to find all records that contained duplicates of the unique identifier. Duplicate records indicated grid cells that were associated with more than one polygon.
   3. It was assumed that all duplicate grid cells associated with each polygon, were, on average, half in the polygon, and half out of the polygon. Vacant land areas for duplicated cells associated with each polygon were summed, divided by two and subtracted from the original total vacant area computed for the polygon to obtain a corrected vacant land area estimate. A hypothetical example might clarify this technique.

G. Hypothetical example, with rounded numbers:
   1. Thiessen Polygons A and B are generated from the ARCInfo macro. All grid cells touched by or contained in Polygon A have a total of 5,000 acres of vacant land. All grid cells touched by or contained in

Polygon B, which is adjacent to Polygon A, have a total of 8,000 acres of vacant land.

2. A find duplicates query shows that there are 10 grid cells associated with the polygon that are duplicated (associated with other polygons). The 10 grid cells have a total of 500 acres of vacant land.
3. It is assumed that these bordering grid cells lie half in Polygon A and half in other polygons. So, the 500 acre total is divided by 2, and subtracted from the total for A. Polygon A's corrected vacant land area is then 5000 - 250 = 4750 acres.

H. This correction process is repeated for all polygons that have duplicated grid cells.

I. *Corrected* vacant land areas for were summed over all Thiessen polygons to generate the total area of vacant land to be used in computing the Valley-wide estimate. The total value, after correction, generated for use in the vacant land PM-10 calculations is 151,189 acres. A tabular summary of the corrected land areas for each polygon is shown in Table 1. A listing of duplicated grid cells for each polygon may be found in Table B-3 in the Appendix.

J. This total area, because of a correction process that assumes half the area in each polygon, is 2,624 acres (1.8%) higher than the raw area data provided by Clark County from the Assessor's database.

K. Summary discussion of Sources of Error in determination of the number of acres of vacant land

1. *Development of vacant land estimates in each section from Clark County Assessor's land use codes.* As previously discussed, this technique tends to over-estimate the number of acres of developed land at parcel scale, because it does not have information about the amount of development within each parcel. As a result, it tends to underestimate the number of acres of vacant land in each section.
2. *Development of number of acres of vacant land in each polygon.* Error is introduced in the assumption that all grid cells straddling a polygon boundary are equally shared between the two adjacent polygons. This assumption may be approximately correct for large polygons containing lots of cells, but may be less accurate for polygons that contain only a few grid cells. The outcome of processing the grid cell data in this manner to prepare it for use in the PM-10 emissions estimate, introduced a 1.8% overestimate of in the number acres of vacant land used in the PM-10 vacant land emissions estimates.

Table 1: Summary of area corrections for shared grid cells in each polygon

id	letter code	alt letter code	vacant land (acres)	adjustment (acres)	rev vacant land (acres)	bordering polygons	comment
1	cc		635	318	318	3,11,15,16	vacant land
2	ww		2,497	923	1,574	4,6,8,11	comprises
3	sl		2,510	1,195	1,315	1,9,11,12,13,17	all grid cells
4	bs	cr	25,920	3,551	22,369	2,11,17	contained in
5	pl	se	10,862	2,574	8,288	10,14	or touched by
6	mc	es	722	301	422	2,7,8,9,14,15	the boundary
7	ms	ec	339	170	170	6,15,16	for each
8	dm		3,276	1,084	2,192	2,6,10,14	polygon
9	fl		11,574	3,742	7,833	3,6,12,14,15	
10	pt		8,544	1,781	6,764	5,8,14	adjustment
11	jd		5,365	2,250	3,116	1,2,3,4,16,17	is 1/2 the
12	pm		34,568	3,906	30,662	3,9,13,18	total area
13	wj		2,177	655	1,523	3,12,17,18	of grid cells
14	gv		30,558	4,538	26,021	5,6,8,9,10	that cross
15	cw		369	177	192	1,3,6,7,9,16	a boundary
16	sa		414	207	207	1,7,11,15	
17	lo		28,958	2,857	26,102	3,4,11,13,18	rev vacant =
18	pv		14,057	1,932	12,125	12,13,17	vacant -
	Total		183,345	32,157	151,189		adjustment

Table 2:

Statistical summary - 10 meter threshold wind velocity distributions

Disturbed sites (new classification) n = 29				
		computed	extrapolated	
category	**aero roughness (cm)**	**spike velocity @ 7.5 cm (mph)**	**spike velocity @ 10 m (mph)**	**Comment**
minimum	0.0027	9.6	18.2	
arithm. 10th %ile			19.9	interpolated from plot
geom. mean-1 s.dev	0.0139	11.3	22.2	
geometric mean	0.0514	13	26.4	
geom. mean+1 s.dev	0.1898	14.9	31.3	
arithm. 90th %ile			33.4	interpolated from plot
maximum	0.4099	17.3	37.1	

Undisturbed sites (new classification) n = 56				
		computed	extrapolated	
category	**aero roughness (cm)**	**spike velocity @ 7.5 cm (mph)**	**spike velocity @ 10 m (mph)**	**Comment**
minimum	0.0001	6.7	12.4	
arithm. 10th %ile			20.4	interpolated from plot
geom. mean-1 s.dev	0.0124	10.9	21.8	
geometric mean	0.0712	12.7	27.0	
geom. mean+1 s.dev	0.4106	14.7	33.4	
arithm. 90th %ile			32.7	interpolated from plot
maximum	0.4899	19.1	39.1	

II. Determination of minimum wind velocity for erosion of PM-10 from vacant land surfaces

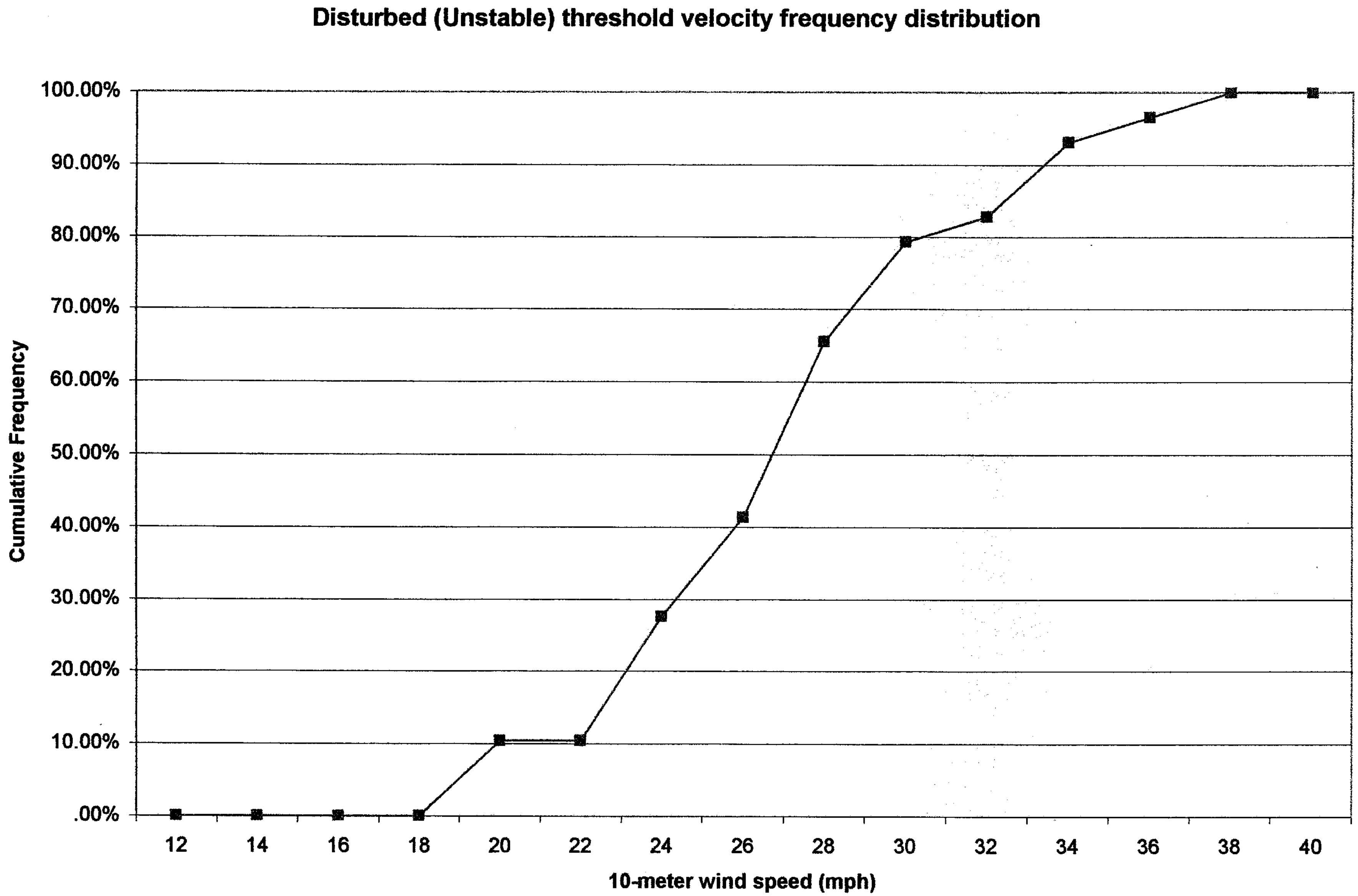
A. *Wind Tunnel Data source.* UNLV used data from the 1995 Wind tunnel field survey in the Las Vegas Valley to compute aerodynamic roughness heights, and velocities for initiation of PM-10 erosion. Wind tunnel flow velocity was gradually increased, and the centerline pitot tube pressure drop was recorded when the TSI Dust-Trak first measured a "spike" in PM-10 concentration exceeding 1 mg/m3 in the wind tunnel. Using site photos from UNLV's 1995 field data book, the field sites were reclassified as "stable" or "unstable" by UNLV according to criteria in the proposed Maricopa County / Clark County rules. Evidence of crusting, presence of flat vegetation and sizes of sheltering elements in the photographs were used to estimate stability of the photographed 1995 sites. In 1995, the sites had been subjectively classified as disturbed or undisturbed on the basis of evidence of human activity (debris, tire tracks, broken crust) at the field sites.

B. *Wind tunnel data processing.* The centerline pitot tube pressure drops corresponding to the initial PM-10 spike were converted to tunnel centerline (7.5-cm height) spike velocities. The aerodynamic roughness, determined from a series of velocity profile measurements over the soil surface, was used with the 7.5 cm data to extrapolate the spike velocities to a height of 10 meters, the global standard for measurement of wind speeds. Statistical analyses were performed on the extrapolated 10-meter spike velocities to determine a value that could be used for initiation of Valley-wide PM-10 erosion.

C. *Results.* Table 2 presents a statistical summary of the disturbed (unstable) and undisturbed (stable) 1995 wind tunnel datasets. Geometric mean 10 meter PM-10 spike velocity was 26.4 mph for the unstable sites, and 27.0 mph for stable sites. The 10th percentile interpolated value for unstable sites was 19.9 mph. The 10th percentile interpolated value for stable sites was 20.4 mph. Figure 2 (29 sites) shows a rapid jump from 10th %ile to 28th %ile between 22 and 24 mph for unstable (disturbed) sites. Figure 3 (56 sites) shows a smooth increase from 10th %ile at 20 mph, to 14th %ile at 22 mph to 21st %ile at 24 mph for stable lands.

D. *Discussion.* The author (James) used a 20 mph threshold for unstable, stable in the Feb 22 and March 28 computations of Valley-wide PM-10 vacant land estimates. This is "conservative", in that we assume the whole valley starts to emit PM-10 at 20 mph, when in fact, only 10% of the sites may be emitting PM-10 at that velocity. As a result, a 20 mph threshold tends to overestimate the amount of emitted PM-10. Effects of rain on windy

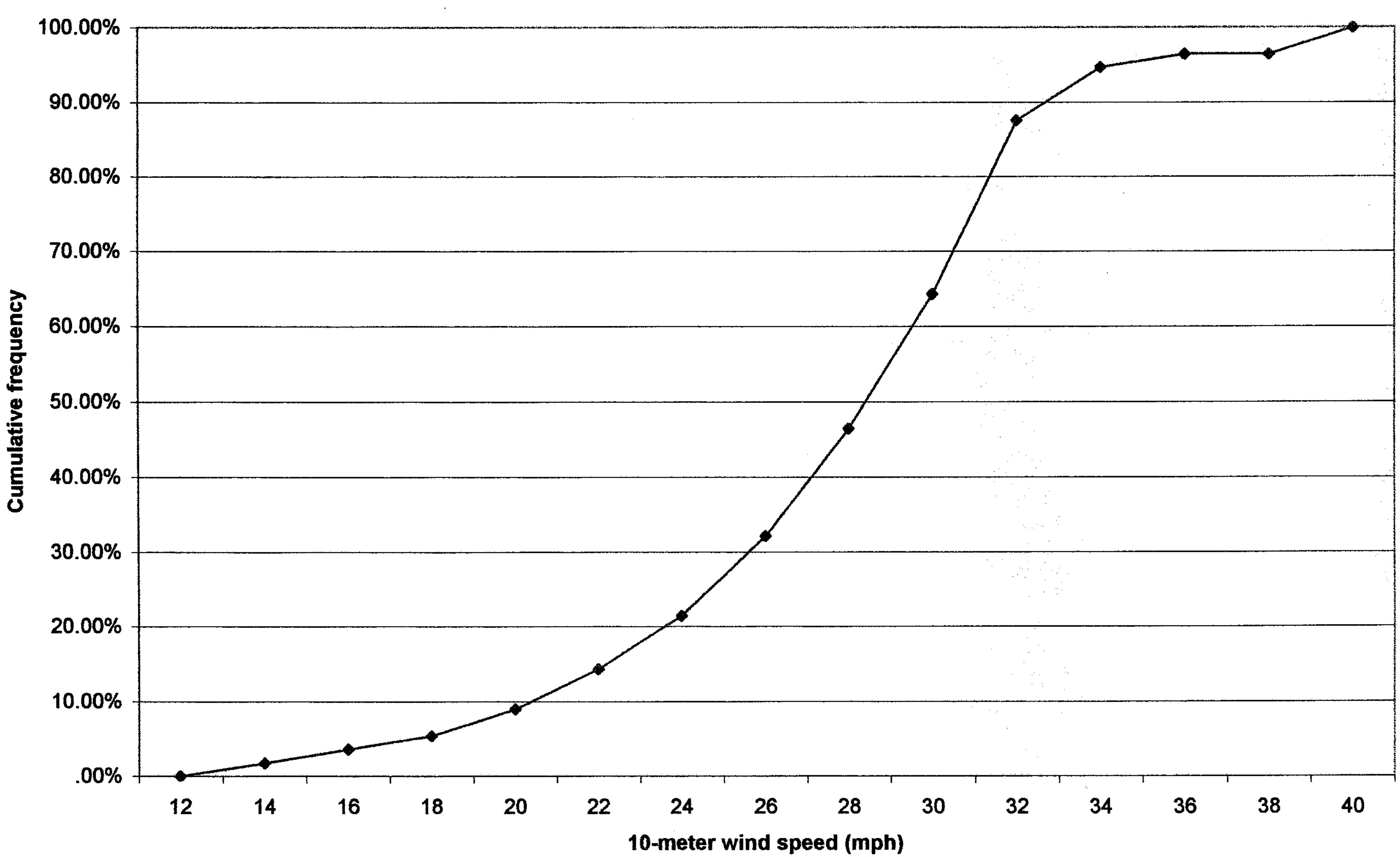
Figure 2



Disturbed (Unstable) threshold velocity frequency distribution
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
.00%
Cumulative Frequency
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
10-meter wind speed (mph)

Figure 3

Undisturbed (stable) threshold velocity frequency distribution



days were neglected in these reports. As a result, the Feb 22 and March 28 estimates were likely too high.

Uniform use of wind speeds 25 mph or higher in computing Valley-wide estimates would give disproportionate weight to stable land emissions, because, winds 25 mph or higher generate emissions from 100% - 25% = 75% of stable, undisturbed land sites (Figure 3), but only 100 - 35 = 65% of unstable land sites (Figure 2). A lower wind speed threshold is needed for unstable sites. Winds 20 mph or higher for unstable lands would generate emissions from 100 - 10 = 90% of unstable sites. Windy days with rain should be excluded from PM-10 Valley-wide emissions estimates, as wet soil does not emit PM-10, and PM-10 emitted just before a rain would be rapidly rained out of the atmosphere.

The amount of land area that could be associated with the potential to emit in the 20-22, 22-24, 24-26 mph speed ranges is currently unknown. It might be possible to correlate UNLV wind tunnel data to US Natural Resource Conservation Service soil classification and wind erosion databases, but that effort was beyond the scope of this project.

E. *Wind data source.* 1999 Hourly average wind observations from 18 Clark County monitoring stations (Table A.1.1 – Figure A1) were used in the computation of Valley-wide estimates. Wind-speeds for a particular station (for example Lone Mountain, LO, Polygon 17) were assumed to be valid over the entire polygon. This approach introduces error into the PM-10 estimate, as varying terrain and the presence of sheltering urban infrastructure in at least part of each polygon will contribute to variation of wind speeds within each polygon.

F. *Wind data processing.* ASCII wind data files containing hourly average wind speeds for 18 CCHD monitoring stations were obtained by UNLV February 2000 and imported into a MS Access97 database. The database was queried to develop new computer files containing records corresponding only to sustained hourly wind speeds greater than or equal to 20 mph. These records were used to compute hour-by hour PM10 emissions for each Thiessen polygon corresponding to a CCHD monitoring station.
The database was also queried for missing records to determine the %availability of CCHD monitoring stations during 1999.

A summary of results is shown in Table 3. The table shows that the CCHD stations had, on average, 95.2% of the year's wind hours recorded. Two stations, Green Valley (GV) and Winterwood (WW) had much lower than average availability. The 70% availability of Winterwood does not introduce significant error because it is associated with a small polygon. The 83%

Table 3

1999 Wind frequency summary
Shaded cells exceed average

CCHD station	Site Name	Wind hours < 15 mph	Wind hours 15-19.99 mph	Wind hours > 20 mph	hours unavailable	Total hours	% available
AP	Apex	7344	618	347	461	8760	94.9%
BS	Craig Road	8301	244	48	167	8760	98.1%
CC	City Center	7951	34	3	772	8760	91.2%
CW	Crestwood	8603	16	20	121	8760	98.6%
DM	Dime III	8392	134	16	218	8760	97.5%
FL	Flamingo	8296	315	59	90	8760	99.0%
GV	Green Valley	6899	307	33	1521	8760	82.6%
JD	J D Smith	8368	151	12	229	8760	97.4%
JN	Jean	7980	596	169	15	8760	99.8%
LF	Laughlin	7245	605	270	640	8760	92.7%
LO	Lone Mountain	7917	390	95	358	8760	95.9%
MC	East Sahara	8110	135	14	501	8760	94.3%
MS	Microscale	8497	164	23	76	8760	99.1%
PL	S.E. Valley	7914	374	79	393	8760	95.5%
PM	Paul Meyer Park	8417	274	26	43	8760	99.5%
PT	Pittman	8505	183	26	46	8760	99.5%
PV	Palo Verde	8016	522	162	60	8760	99.3%
SA	Sunrise Acres	8270	383	35	72	8760	99.2%
SL	Shadow Lane	8606	85	5	64	8760	99.3%
WJ	Walter Johnson	8189	224	20	327	8760	96.3%
WW	Winterwood	5938	146	18	2658	8760	69.7%
	averages	7988	281	70	420		95.2%
	totals (incl AP,JN,LF)	167,758	5,900	1,480	8,822	183,960	
	Valley totals	145,189	4,081	694	7,716	157,680	

Table 3 (continued)

1999 Wind frequency summary
Shaded cells exceed average

CCHD station	Site Name	% unavailable	% <15 mph	% 15-19.99 mph	% >20 mph	Acres vac land
AP	Apex	5.1%	83.8%	7.1%	4.0%	not in valley
BS	Craig Road	1.9%	94.8%	2.8%	0.5%	22,369
CC	City Center	8.8%	90.8%	0.4%	0.0%	318
CW	Crestwood	1.4%	98.2%	0.2%	0.2%	192
DM	Dime III	2.5%	95.8%	1.5%	0.2%	2,192
FL	Flamingo	1.0%	94.7%	3.6%	0.7%	7,833
GV	Green Valley	17.4%	78.8%	3.5%	0.4%	26,021
JD	J D Smith	2.6%	95.5%	1.7%	0.1%	3,116
JN	Jean	0.2%	91.1%	6.8%	1.9%	not in valley
LF	Laughlin	7.3%	82.7%	6.9%	3.1%	not in valley
LO	Lone Mountain	4.1%	90.4%	4.5%	1.1%	26,102
MC	East Sahara	5.7%	92.6%	1.5%	0.2%	422
MS	Microscale	0.9%	97.0%	1.9%	0.3%	170
PL	S.E. Valley	4.5%	90.3%	4.3%	0.9%	8,288
PM	Paul Meyer Park	0.5%	96.1%	3.1%	0.3%	30,662
PT	Pittman	0.5%	97.1%	2.1%	0.3%	6,764
PV	Palo Verde	0.7%	91.5%	6.0%	1.8%	12,125
SA	Sunrise Acres	0.8%	94.4%	4.4%	0.4%	207
SL	Shadow Lane	0.7%	98.2%	1.0%	0.1%	1,315
WJ	Walter Johnson	3.7%	93.5%	2.6%	0.2%	1,523
WW	Winterwood	30.3%	67.8%	1.7%	0.2%	1,574
	averages	4.8%	91.2%	3.2%	0.8%	
	totals (incl AP,JN,LF)					
	Valley totals					151,193

availability of Green Valley does introduce some error into the calculation, as Green Valley is associated with the third largest Thiessen polygon (26,021 acres). The effect of the omission is to reduce the magnitude of estimated PM-10 eroded from vacant lands.

Table 4 shows that the Green Valley station is missing records for four of the Valley-wide 1999 wind events exceeding 20 mph, February 25, March 30, March 31, and December 7. Inclusion of these records would lead to an increase the amount of estimated PM-10 in both the design day estimate (probably by about 50-100 tons, 10-20% of total)) and the 1999 design year estimate, (perhaps by 500-1000 tons, 3-5% of total).

Table 3 shows that selection of a 20 mph threshold for initiation of PM-10 yields 694 total erosive hours, about 0.8% of the 157,680 total hours of record for all 18 Valley monitoring stations. If a 15-mph threshold was used, then 4,081 erosive hours would contribute to PM-10 erosion, about 3.2% of the total hours of record for the Valley stations. At the two windiest sites in the network, Palo Verde (PV), recorded 1.8% of its wind hours over 20 mph, and Lone Mountain (LO) recorded 1.1% of its wind hours over 20 mph.

In conclusion, winds exceeding a 20 mph threshold for PM-10 erosion occurred 0.8% of the time in 1999, and engage 10% or more of the 1995 wind tunnel sites in the emission of PM-10.

III. Final Version of PM-10 Emission Factors

The February 22, 2000 draft report presented emissions factors for unstable desert lands and stable desert lands, corrected for the presence of "spikes" in the data during the initial one to two minutes of wind erosion. The draft contained computed Valley-wide 1999 Design Year and February 25, 1999 design day Valley-wide emissions for varying ratios of stable and unstable vacant lands. The emissions factors were computed from 1995 UNLV wind tunnel data collected over the entire Las Vegas Valley.

The March 28, 2000 Draft report presented additional emissions factors for lands stabilized with commercial dust suppressants, not corrected for spikes. The emissions factors came from Phase II of the 1998-1999 UNLV wind tunnel study of the comparative performance of different commercial dust suppressants. Tests of the dust suppressants were performed on treated land on the east side of the Las Vegas Valley, a location where uncrusted, untreated soil was an extremely high dust emitter.

In this report, final emissions factors are presented in six categories:

Table 4

1999 Windy day tally - CCHD AQD monitoring stations

Date	BS	CC	GW	DM	FL	GV	JD	LF	LO	MC	MS	PL	PM	PT	PV	SA	SL	WJ	WW	Total reporting
1/8/1999								1	1				1		1					4
1/20/1999	1				1	1		1	1		1	1			1					8
1/21/1999	1				1	1		1	1				1		1	1		1	1	10
1/23/1999												1								1
1/25/1999								1												1
1/26/1999							1	1	1										1	4
2/9/1999								1	1			1	1	1	1			1	1	8
2/10/1999	1							1	1	1		1		1	1	1				8
2/19/1999									1											1
2/21/1999	1				1			1	1			1			1			1		7
2/25/1999	1			1	1		1	1	1	1	1	1	1	1	1	1		1	1	15
3/3/1999					1			1				1	1	1	1					6
3/4/1999					1															1
3/6/1999								1												1
3/8/1999								1							1					2
3/9/1999								1	1		1	1	1	1	1			1	1	9
3/15/1999				1				1	1						1					4
3/20/1999				1	1			1	1			1	1		1			1	1	9
3/21/1999															1					1
3/23/1999															1					1
3/30/1999	1				1		1	1	1	1	1	1	1	1	1				1	12
3/31/1999	1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	17
4/3/1999					1			1							1					3
4/5/1999	1							1				1							1	4
4/6/1999				1				1				1								3
4/7/1999								1												1
4/8/1999					1	1		1		1		1	1		1				1	8
4/9/1999	1					1		1	1			1		1	1					7
4/12/1999	1						1	1												3
4/14/1999								1							1					2
4/15/1999								1												1
4/16/1999								1												1
4/22/1999								1												1
4/26/1999															1					1
4/27/1999					1			1			1				1					4
4/28/1999					1			1					1		1					4
5/2/1999			1		1			1							1					4
5/3/1999			1					1	1			1	1		1					6

Table 4 (continued)

1999 Windy day tally - CCHD AQD monitoring stations

Date	BS	CG	CW	DM	FL	GV	JD	LF	LO	MC	MS	PL	PM	PT	PV	SA	SL	WJ	WW	Total reporting
5/8/1999								1												1
5/12/1999					1	1		1							1					4
5/13/1999					1	1		1			1			1	1					6
5/14/1999					1	1					1	1	1	1	1					7
5/26/1999	1								1				1		1	1				5
5/30/1999								1												1
6/1/1999								1												1
6/2/1999					1			1							1					3
6/3/1999					1												1			2
6/6/1999								1												1
6/16/1999								1							1					2
6/20/1999								1												1
6/21/1999						1		1							1					3
6/25/1999															1					1
7/3/1999						1									1					2
7/4/1999								1												1
7/6/1999						1						1								2
7/7/1999						1						1								2
7/9/1999	1																			1
7/14/1999	1							1								1				3
7/15/1999								1	1						1					3
7/27/1999				1		1	1	1	1			1		1	1					8
7/28/1999						1		1				1								3
7/29/1999								1												1
8/6/1999						1		1												2
8/10/1999								1												1
8/14/1999								1												1
8/30/1999								1							1					2
9/1/1999								1												1
9/18/1999	1									1						1				3
9/27/1999								1												1
9/28/1999								1												1
10/6/1999								1				1								2
10/15/1999									1											1
10/16/1999								1	1			1			1			1		5
10/21/1999	1																			1
10/29/1999								1							1					2
10/31/1999									1											1

Table A – Unstable vacant lands – spike corrected. Emissions factors are the same as in the February 22, 2000 report

Table B – Stable vacant lands – spike corrected. Emissions factors are the same as in the February 22, 2000 report

Table C – Phase II treated sites – not spike corrected and not torn up by truck tire. Emissions factors are the same as in the March 28, 2000 report.

Table D - Phase II treated sites – spike corrected and not torn up by truck tire. These are new emissions factors, not previously presented, and should be used when estimating initial benefits of satisfactory application of dust suppressants

Table E – Phase II treated sites – not spike corrected, and torn up by truck tire. These factors are presented only for comparison to Table F, to demonstrate the need for using spike corrected data, and should not be used in computing Valley-wide estimates.

Table F – Phase II treated sites- spike corrected and torn up by truck tire. These factors are presented for use when estimating end of design life benefits for dust suppressants after they have experienced some mechanical degradation.

Tabulated data are presented as geometric means +/- one standard deviation to illustrate the large degree of variability in the wind tunnel data and also the asymmetric nature of the wind tunnel data sets. Emissions factors for stable and unstable desert lands are presented as averages across all soil groups, and hence, have large uncertainties in each wind-speed range.

Spike correction is defined as correction of the undue influence of the "spike" in PM-10 emissions that is usually observed by the TSI Dust Trak monitor in the first one to two minutes of a wind tunnel run. If not corrected, extrapolation of the observed PM-10 mass in a 10-minute run to an hourly average PM-10 flux estimate would overestimate an hourly average PM-10 emissions factor.

A typical spike is shown in Figure 4 for a 10-minute computer run. The spike is removed from the 10-minute data by computer processing. The spike-removed data are converted to a 60-minute steady state value (ton/acre/hour). The spike data are converted to ton/acre and added only to the first hour of any erosive wind event. It is assumed that the PM-10 reservoir takes a minimum of 1 day to renew, so spikes are incorporated into PM-10 emissions estimates only for the first hour of wind events whose onsets that are separated by more than 24 hours.

Figure 4: Example of spike in 10 minute wind tunnel run – surface treated with Magnesium chloride

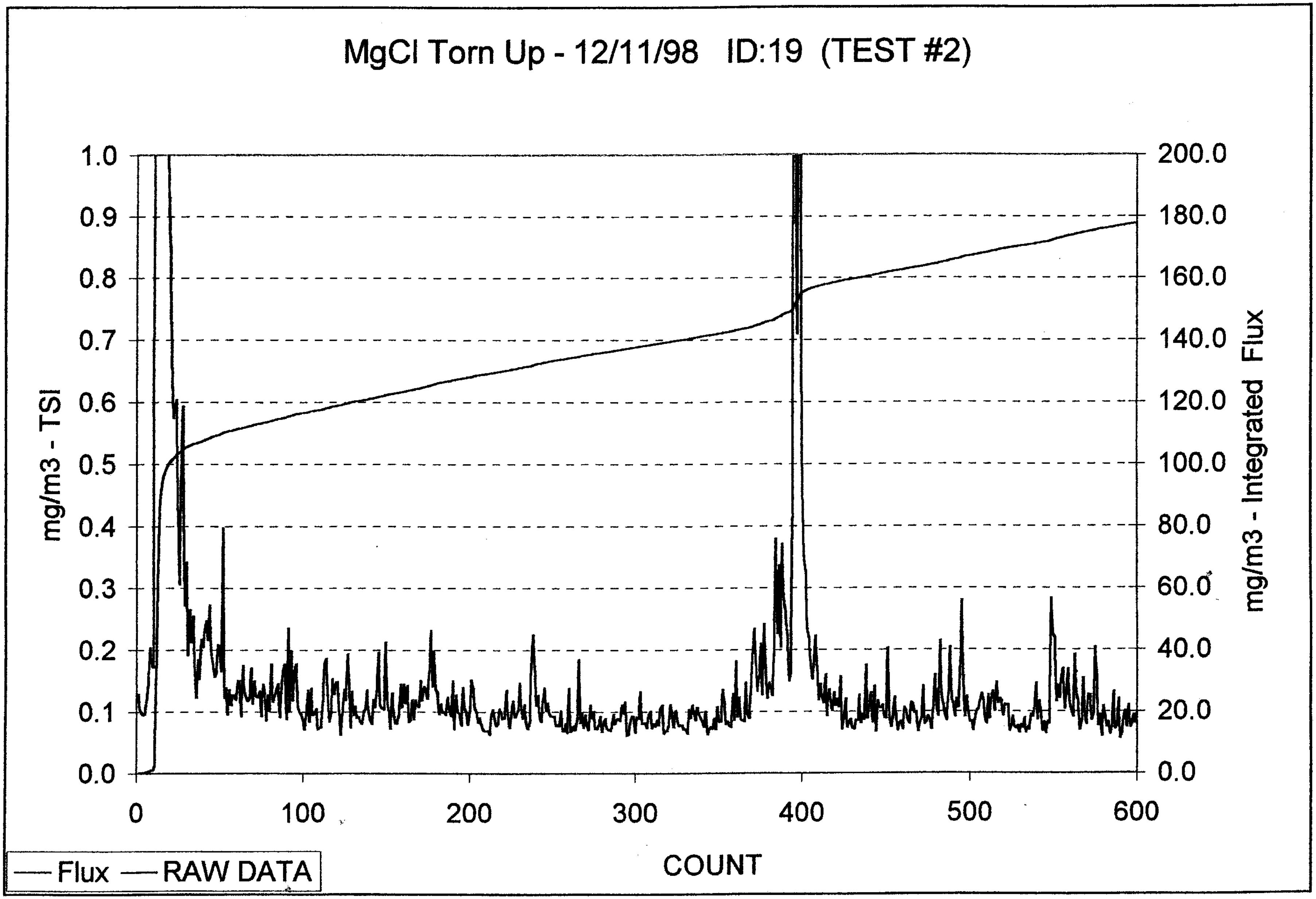


Table A CUMULATIVE RESULTS - Method B (sum individual runs then average)

Unstable sites CORRECTED FOR EFFECTS OF SPIKE

Disturbed Sites (new classification) n = 68								
Wind Speed (mph)	**Geom mean flux -1 Std. Dev (ton/acre/hr)**	**Geom mean flux (ton/acre/hr)**	**Geom mean flux +1 Std. Dev (ton/acre/hr)**	**Geom mean spike -1 Std. Dev (ton/acre)**	**Geom mean spike (ton/acre)**	**Geom mean spike +1 Std. Dev (ton/acre)**	**Number of flux Runs**	**Number of spike Runs**
10-14.9	N/A	N/A	N/A	N/A	N/A	N/A		
15-19.9	1.50E-03	4.95E-03	1.63E-02	1.47E-04	9.65E-04	6.33E-03	3	3
20-24.9	1.23E-03	5.21E-03	2.21E-02	1.14E-04	8.16E-04	5.82E-03	4	4
25-29.9	1.18E-03	6.40E-03	3.48E-02	2.80E-04	1.94E-03	1.35E-02	12	11
30-34.9	1.21E-03	4.62E-03	1.76E-02	3.43E-04	1.41E-03	5.82E-03	13	13
35-39.9	8.96E-04	7.05E-03	5.54E-02	4.37E-04	3.80E-03	3.31E-02	19	11
40-44.9	2.37E-03	1.13E-02	5.41E-02	9.40E-04	3.45E-03	1.27E-02	9	8
45-49.9	9.71E-04	7.12E-03	5.22E-02	1.43E-03	4.50E-03	1.42E-02	7	5
50-54.9	N/A	3.69E-03	N/A	N/A	1.30E-03	N/A	1	1
55-59.9								
60-64.9								
65-69.9								
total runs							68	56

Table B CUMULATIVE RESULTS - Method B (sum individual runs then average)

Stable sites CORRECTED FOR EFFECTS OF SPIKE

Undisturbed Sites (new classification) n = 169								
Wind Speed (mph)	**Geom mean flux -1 Std. Dev (ton/acre/hr)**	**Geom mean flux (ton/acre/hr)**	**Geom mean flux +1 Std. Dev (ton/acre/hr)**	**Geom mean spike -1 Std. Dev (ton/acre)**	**Geom mean spike (ton/acre)**	**Geom mean spike +1 Std. Dev (ton/acre)**	**Number of flux Runs**	**Number of spike Runs**
10-14.9								
15-19.9	N/A	1.95E-03	N/A	N/A	4.00E-04	N/A	1	1
20-24.9	3.16E-04	1.38E-03	6.07E-03	2.39E-05	2.12E-04	1.88E-03	4	3
25-29.9	9.46E-04	2.57E-03	7.00E-03	1.52E-04	4.90E-04	1.58E-03	11	10
30-34.9	7.81E-04	3.16E-03	1.28E-02	1.62E-04	5.88E-04	2.14E-03	23	22
35-39.9	9.17E-04	2.99E-03	9.73E-03	2.84E-04	9.24E-04	3.01E-03	28	27
40-44.9	2.08E-03	5.92E-03	1.68E-02	6.40E-04	1.70E-03	4.53E-03	34	33
45-49.9	3.02E-03	7.58E-03	1.90E-02	9.57E-04	2.20E-03	5.05E-03	30	29
50-54.9	5.94E-03	1.10E-02	2.02E-02	1.21E-03	2.58E-03	5.48E-03	22	22
55-59.9	9.03E-03	1.69E-02	3.15E-02	1.51E-03	3.32E-03	7.29E-03	12	12
60-64.9	9.99E-03	1.66E-02	2.76E-02	1.62E-03	4.03E-03	1.00E-02	4	4
65-69.9								
total runs							169	163

	Table C	STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants					
	treated sites	NOT CORRECTED FOR EFFECTS OF SPIKE - NOT TORN UP					
Wind Speed	**Geom mean flux**	**Geom mean flux**	**Geom mean flux**	**Geom mean spike**	**Geom mean spike**	**Geom mean spike**	**Number**
(mph)	**-1 Std. Dev.**		**+1 Std. Dev.**	**-1 Std. Dev.**		**+1 Std. Dev.**	**of runs**
	(ton/acre/hr)	**(ton/acre/hr)**	**(ton/acre/hr)**	**(ton/acre)**	**(ton/acre)**	**(ton/acre)**	
10-14.9							
15-19.9	2.14E-04	4.20E-04	8.26E-04	N/A	N/A	N/A	22
20-24.9	1.22E-04	3.42E-04	9.60E-04	N/A	N/A	N/A	36
25-29.9	5.26E-05	1.94E-04	7.15E-04	N/A	N/A	N/A	20
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							78

	Table D	STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants					
	treated sites	CORRECTED FOR EFFECTS OF SPIKE - NOT TORN UP					
Wind Speed	Geom mean flux	Geom mean flux	Geom mean flux	Geom mean spike	Geom mean spike	Geom mean spike	Number
(mph)	-1 Std. Dev.		+1 Std. Dev.	-1 Std. Dev.		+1 Std. Dev.	of runs
	(ton/acre/hr)	(ton/acre/hr)	(ton/acre/hr)	(ton/acre)	(ton/acre)	(ton/acre)	spike corrected
10-14.9							
15-19.9	1.00E-04	2.65E-04	7.04E-04	7.26E-07	5.03E-06	3.48E-05	18
20-24.9	5.24E-05	1.38E-04	3.65E-04	1.74E-06	4.59E-06	1.21E-05	32
25-29.9	1.92E-05	1.09E-04	6.19E-04	N/A	N/A	N/A	18
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	2
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							70

	Table E	STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants					
	treated sites	NOT CORRECTED FOR EFFECTS OF SPIKE - TORN UP BY TRUCK TIRE					
Wind Speed (mph)	**Geom mean flux -1 Std. Dev. (ton/acre/hr)**	**Geom mean flux (ton/acre/hr)**	**Geom mean flux +1 Std. Dev. (ton/acre/hr)**	**Geom mean spike -1 Std. Dev. (ton/acre)**	**Geom mean spike (ton/acre)**	**Geom mean spike +1 Std. Dev. (ton/acre)**	**Number of runs spike corrected**
10-14.9	N/A	2.18E-03	N/A	N/A	N/A	N/A	2
15-19.9	1.69E-03	9.39E-03	5.22E-02	N/A	N/A	N/A	22
20-24.9	4.10E-04	2.17E-03	1.15E-02	N/A	N/A	N/A	58
25-29.9	2.58E-04	8.14E-04	2.57E-03	N/A	N/A	N/A	46
30-34.9	N/A	3.61E-03	N/A	N/A	N/A	N/A	2
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							130

	Table F	STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants					
	treated sites	CORRECTED FOR EFFECTS OF SPIKE - TORN UP BY TRUCK TIRE					
Wind Speed	**Geom mean flux**	**Geom mean flux**	**Geom mean flux**	**Geom mean spike**	**Geom mean spike**	**Geom mean spike**	**Number**
(mph)	**-1 Std. Dev.**		**+1 Std. Dev.**	**-1 Std. Dev.**		**+1 Std. Dev.**	**of runs**
	(ton/acre/hr)	**(ton/acre/hr)**	**(ton/acre/hr)**	**(ton/acre)**	**(ton/acre)**	**(ton/acre)**	**spike corrected**
10-14.9	N/A	1.87E-03	N/A	N/A	4.05E-03	N/A	2
15-19.9	7.20E-04	3.80E-03	2.01E-02	2.10E-05	2.67E-04	3.40E-03	22
20-24.9	1.04E-04	8.89E-04	7.60E-03	9.09E-06	5.64E-05	3.50E-04	58
25-29.9	1.01E-04	4.70E-04	2.19E-03	2.56E-06	1.63E-05	1.04E-04	46
30-34.9	N/A	3.57E-03	N/A	N/A	9.68E-06	N/A	2
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							130

Spike corrections are significant for stable and unstable, untreated desert lands, and for torn up, treated desert lands. Spike corrections are not significant for treated, not-torn up desert lands.

The following table briefly summarizes mean spike-corrected PM-10 emissions factors for all categories, without uncertainties:

Table 5. Summary of geometric mean-spike corrected PM-10 emissions factors

Source Wind speed range (mph)	Table A Unstable land ton/acre/hr	Table B Stable land ton/acre/hr	Table D Treated not torn up ton/acre/hr	Table F Treated torn up ton/acre/hr
15-19.9	4.95x10-3	1.95x10-3	2.65x10-4	3.80x10-3
20-24.9	5.21x10-3	1.38x10-3	1.38x10-4	8.89x10-4
25-29.9	6.40x10-3	2.57x10-3	1.09x10-4	4.70x10-4
30-34.9	4.62x10-3	3.16x10-3		
35-39.9	7.05x10-3	2.99x10-3		
40-44.9	1.13x10-2	5.92x10-3		

Emissions factors reported in Tables A and B have not changed since the February 22, 2000 report, and should match the values used in the Dames and Moore microinventory. Tables A and B show the sample sizes used to compute geometric means, and also report the uncertainties of the estimates.

The following table briefly summarizes mean PM-10 emissions spikes for all categories, without uncertainties:

Table 6. Summary of geometric mean spike factors for use in emissions calculations

Source Wind speed range (mph)	Table A Unstable land ton/acre	Table B Stable land ton/acre	Table D Treated not torn up ton/acre	Table F Treated torn up ton/acre
15-19.9	9.65x10-4	4.00x10-4	5.03x10-6	2.67x10-4
20-24.9	8.16x10-4	2.14x10-4	4.59x10-6	5.64x10-5
25-29.9	1.94x10-3	4.90x10-4		1.63x10-5
30-34.9	1.41x10-3	5.88x10-4		9.68x10-6
35-39.9	3.80x10-3	9.24x10-4		
40-44.9	3.45x10-3	1.70x10-3		

The effects of removing spikes from the Phase II not torn up data was small, since the spikes themselves are of low magnitude for intact, treated surfaces (see column entry Table D in Table 6, above).

The following table compares Phase II mean not torn-up emission factors, again omitting uncertainties, for the not spike corrected and spike-corrected cases.

Table 7. Not spike-corrected and spike-corrected emissions factors for not torn up Phase II treated surfaces

Source Wind speed range (mph)	Table C Treated - not torn up not spike-corrected ton/acre/hour	Table D Treated - not torn up spike-corrected ton/acre/hour
15-19.9	4.20x10-4	2.65x10-4
20-24.9	3.42x10-4	1.38x10-4
25-29.9	1.94x10-4	1.09x10-4
30-34.9		
35-39.9		
40-44.9		

If standard deviations are considered, the differences between the factors in Tables C and D are not statistically significant

Valley-wide emissions estimates for various scenarios of stabilized land, computed and reported for Phase II not-spike corrected, not torn up emission factors (Table C, this report) in the March 28, 2000 report, have been recomputed for the spike-corrected emission factor data in Table D. The results are presented in Appendix A of this report.

The results for Valley-wide PM-10 emissions from a mixture of stable and stabilized lands using spike-corrected Phase II values differ slightly from the results reported in March. Results are summarized in Tables 8 and 9. The September 13, 2000 report column in Tables 8 and 9, using spike-corrected stabilized lands should be considered the definitive estimate for stabilized lands newly treated with dust suppressant.

Table 8 – 1999 Annual emissions estimates using revised, Phase II spike-corrected values for newly treated surfaces. September 13, 2000 data are in Appendix A of this report

Ratio stable/ stabilized	March 28, 2000 non-spike corrected not torn up tons	Sept 13, 2000 spike corrected not torn up tons
70/30	12,144	11,661
80/20	13,424	13,102
90/10	14,705	14,544

Table 9 – February 25, 1999 Design day emissions estimates using revised, Phase II spike-corrected values for newly treated surfaces. September 13, 2000 data are in Appendix A of this report

Ratio stable/ stabilized	March 28, 2000 non-spike corrected not torn up tons	Sept 13, 2000 spike corrected not torn up tons
70/30	478	457
80/20	529	516
90/10	580	583

Effects of the degradation of stabilized surface can be modeled by using spike-corrected emissions factors from Table D, for stabilized, not-torn up, and from Table F, for stabilized, torn up. The effects of degradation are shown below in Tables 10 and 11

Table 10 – 1999 Annual emissions estimates using revised, Phase II spike-corrected values for not-torn up and for torn up surfaces

Ratio stable/ stabilized	Table D spike corrected not torn up tons	Table F spike corrected torn up tons
70/30	11,661	13,600
80/20	13,102	14,395
90/10	14,544	15,190

Table 11 – February 25, 1999 Design day emissions estimates using revised, Phase II spike-corrected values for not-torn up and for torn up surfaces. Ratio

stable/ stabilized	Table D spike corrected not torn up tons	Table F spike-corrected torn up tons
70/30	457	534
80/20	516	567
90/10	583	609

IV. Field surveys to assess feasibility of using methodologies contained in the proposed Maricopa County Rule and Proposed Clark County Rule 41 for determining susceptibility of land parcels to wind erosion.

A. *Data source.* Copies of the proposed draft Maricopa County rule and the proposed Clark County Rule 41 were obtained on September 2, 1999 from Rodney Langston of Clark County Comprehensive Planning. The proposed rules are principally intended to require control measures for disturbed vacant land, and establish criteria for when a vacant land parcel requires control measures. The proposed rules also contain procedures for determining susceptibility of vacant lands to wind erosion. The proposed Clark County Rule 41 is a modification of the draft Maricopa County rule, was under consideration for adoption in Clark County.

B. *Procedure development and modification.* After initial field trials of the proposed procedures in proposed Clark County rule 41, a flow chart was developed by graduate student Sherrie Edwards to aid field crews in the rapid testing of vacant land parcels for susceptibility to wind erosion.

The flow chart, comprised of a series of if-then statements, allowed for efficient sampling of sites under consideration. In essence the flow chart guides a field inspector through the following flow of tests.

1. Using a 1-foot square sampling quadrat tossed at random into the site, perform drop ball test using a 5/8" stainless steel ball bearing from 1-foot height, and observe effects of ball impact on soil surface. The ball dimensions and drop height are specified in section 41.9.3. Repeat the test three times inside the randomly cast quadrat.
    a. If there is no damage to the soil crust, or no splashing of particles from the surface in two or more of the three samples inside the randomly-cast quadrat, the test result is classified

as a "pass", and that quadrat is classified as resistant to wind erosion.

b. If there is damage to the crust (formation of a distinct indentation), or splashing of particles from the surface, in two or more of the three samples inside the randomly-cast quadrat, then the result is classified as a "fail" inside that quadrat.

c. The quadrat is then cast into the site several (a minimum of six) more times, and the tests are repeated.
   (1) If a majority of ball drop determinations in the cast quadrats are passes, then the parcel is classified as not susceptible to wind erosion. No further testing need be done if the parcel passes the ball-drop test.
   (2) If a majority of ball drop determinations are "fail", then the parcel is potentially susceptible to wind erosion, and testing proceeds to the next stage.

2. A 100 foot string count is conducted at the site to measure the frequency distribution of flat vegetation, debris and rocks larger than 1 centimeter in diameter (all classified as non-erodible elements). Note that the procedure described in the draft Maricopa County rule specifies that only flat vegetation be counted. The procedure identified in the draft Clark County rule specifies that flat vegetation, debris (such as pieces of glass) and rocks > 1 centimeter be counted. UNLV followed the draft Clark County rule, section 41.9.5.
   a. The string count was conducted by using a US Natural Resource Conservation Service soil erosion test kit containing at 50-foot string with 1 centimeter diameter plastic beads attached at 6-inch intervals along the string. Every other bead was used to conform to the 1-foot spacing specified in the Maricopa County rule. Alternate beads were marked with stripes from a permanent felt-tip marker to generate easily recognizable beads at 1-foot intervals.
   b. The 50-foot string was extended twice in the same direction to generate a 100-foot transect.
   c. Transect directions were, where possible, chosen using a table of random numbers.
   d. Any object 1-centimeter in diameter or larger underneath any portion of the bead was counted as covering the soil at that bead. The object could be a pebble, a twig, a tuft of grass, any anthropogenic trash, or an overhanging branch of a large bush.
   e. A rapid fill-in table was developed by graduate student Sherrie Edwards to ease the process of counting non-erodible elements, with + signs indicating a non-erodible element,

and – signs indicating absence of non-erodible elements. After 2 counts using the 50-foot string, the number of + signs in the table was summed, and divided by 100 to give the percentage frequency of flat vegetation + non-erodible elements.

f. Interpretation of test results:
   (1) If the frequency of flat vegetation + non-erodible elements at the site exceeded 50%, the parcel was rated as stable on that transect.
   (2) If the frequency was $\leq$ 50%, then the threshold friction velocity test (TFV) was performed.

g. The TFV test requires sampling of the top layer of soil with a dust pan, and pouring the soil through a set of sieves, per section 41.9.4.1. Retained sieve soil volumes are measured in a 250-mL plastic graduate cylinder, and a TFV is assigned based on the predominant volume (mode) of soil retained on one of the sieves.

h. Interpretation of TFV test results:
   (1) If sieve analysis test shows TFV > 100 centimeters per second (cm/sec), then the sample is rated as "stable".
   (2) If the sieve analysis shows a TFV < 100 cm/sec, then the Rock Test is needed.
   (3) Several more samples are collected and sieved, and the majority of TFV determinations are used in determining the stability of the parcel.

i. Rock Test. The method used by UNLV does not conform to the Rock Test Method proposed in the September 2, 1999 draft of Clark County proposed rule 41 or the June draft of the proposed Maricopa County rule. In December of 1999, UNLV attempted to develop a faster, more quantitative procedure than that described in 41.9.7 of the draft Clark County Rule. The proposed UNLV test method is as follows:

j. Using a metal dustpan, sample all rocks to a depth of 1 cm from a random cast of a 1-foot square quadrat. Pour the sample through a 1-centimeter (1 cm) sieve. Pour rocks retained on the 1 cm sieve into a metal cake pan, and shake the pan gently, holding at a slight angle, to move the rocks into a single closely packed layer in one corner of the pan. Lay the pan flat and square up the rock layer with a ruler, and measure its dimensions with the ruler. Compute the area of the rock layer in square inches and divide by 144 square inches (1 square foot), and multiply by 100 to determine the percentage coverage by rocks on the tested site. Divide the percentage coverage by 2 to determine the percent frontal area occupied by rocks on that site.

k. Interpretation of test results
   (1) If rock frontal area exceeds 10%, then the site is stable.
   (2) If rock frontal area is less than 10%, then adjust the TFV using the percent frontal area per the table shown in section 41.9.4.1 in the draft Clark County rule.
   (3) If adjusted TFV exceeds 100 cm/sec, the tested site is stable
   (4) If adjusted TFV is less than 100 cm/sec, the tested site is not stable.
   (5) Repeat the rock test from several other randomly chosen sites on the parcel to determine the stability of the parcel.

C. *Results of UNLV field work.* UNLV carried out field sampling between October 1999 and March 2000, with the bulk of the sampling conducted in January and February. Where available, aerial orthophotos were used to guide the selection of field parcels and plan access to sites.

All fieldwork was performed during the near-record 140-day dry spell experienced in the Las Vegas Valley in the early winter and spring of 2000.

1. Of 69 sites studied, ball drop data are available for 60 sites. Of these 60 sites, 33 (55%) passed ball drop and 27 (45%) failed. All 27 failed sites were tested for % non-erodible elements using the string count.

2. Four parcels with no ball drop data have %non-erodible data, giving a total of 27 + 4 = 31 that can be studied for %non-erodible cover. Of these 31 sites, 16 (52%) passed the 50% non-erodible criterion, and 15 (48%) failed (had less than 50% non-erodible elements).

3. Of 15 parcels failing %non-erodible, 12 were tested for TFV (threshold friction velocity). Of these 12 sites, 8 (67%) passed the TFV criterion (TFV > 100 cm/sec) and four (33%) failed the TFV criterion (< 100 cm/sec).

4. Of 27 parcels with records that show failing ball drop, 9 passed TFV (one more parcel than in #3 because one site that passed non-erodible was also tested for TFV and passed, as we expected it to do). The actual ratio should be 8 of 27 (30%), because the one additional parcel that passed the non-erodible cover criterion wouldn't ordinarily have been tested for TFV.

5. Parcels failing all three tests were all located in just one of the three sections that have been studied on the east side of the Valley. Locations are identified in Table B-4, Field Sampling Summary.

6. After a visit to the parcel for field tests, its land area was measured on the digitized aerial orthophotos and recorded in square feet. See Table B-4, Field Sampling Summary.

7. Six of 69 visited parcels were rated as unstable (9% of total tested parcels). The land area of the unstable parcels was 870,000 ft2. The measured land area of all tested parcels was 87,000,000 ft2, and at the time of this writing the land area determinations had not been completed. The percentage land area rated as unstable in the UNLV tests was 1%. It should be noted that UNLV's site visits north of the Summerlin Parkway, US 95, Bonanza Road alignment were limited, and a definitive value for percentage unstable land by the proposed Clark County rule would require a more extensive set of field observations.

Of these 6 sites, 4 were identified by the sequence of three tests ball drop - %non-erodible - TFV). Please note that these six sites comprise 9% of tested parcels, not 9% of tested parcel area. The six disturbed parcels represent less than 1% of the land area tested by UNLV.

8. For comparison, Dames and Moore's intensive microscale study around five CCHD monitors estimated 10% to 59%% unstable, with an overall average of 15%.

9. Clark County Health District's dust inspectors (McDonnell-Canan and Wallenmeyer, personal communication 2000) gave a qualitative estimate of %unstable land from their field observations at 20%.

10. UNLV obtained a copy of Clark County Health District's dust permit database in MS-Access97 format. A query of this database showed a total of 40,243 acres permitted in Clark County sometime during 1999. The query searched for all dust permits granted for periods ranging from Jan 1, 1998 – Jan 1, 1999 to December 29, 1999 to December 29, 2000, and produced 3991 records. Some of these permits were for projects outside the BLM Land Disposal boundary. Although there is no way to tell when the construction regulated by the permits took place, if one estimates that the activity was spread uniformly through time, with a two-year time interval in Jan 1, 1998 through December 29, 1999, then the estimate of the number of acres under construction with potential to emit wind-blown dust would be 40.243 / 2 = 20, 122 acres as an average value for calendar year 1999. If all this activity took place inside the BLM boundary, this would give a potential % unstable value of 20,122 / 148,575 = 13%. Given that contractors will apply control measures, the actual number of acres from construction with potential to emit wind blown dust would be less than 20,122, so the 13% value should be considered a maximum estimate for this method.

Results from the different methods used to estimate percent unstable vacant land are summarized below in Table 12.

Table 12. Summary of Percent Unstable Vacant land estimates obtained by different methods

Source	**Method**	**Ave. value**
Clark County dust inspectors	Visual estimate	20%
Dames & Moore microinventory	Clark County rule	15%
UNLV analysis CCHD dust database	Permitted area	13%
UNLV field inspections	Clark County rule	1%*

The * indicates that land area measurements for UNLV-visited parcels are incomplete; when completed, the percent unstable area from UNLV field tests is <1%. The UNLV field visits included sites on the West site of the Valley where had been little human activity. UNLV did not sample the northern and northeastern parts of the valley with the same intensity as it sampled the south. Sampling of sites in these areas, especially in developed areas might raise UNLV's estimate.

The Dames & Moore microinventory was carried out around several monitors in the urban core of the valley, where a higher percentage of disturbed (unstable) land might be expected as a result of human activity.
Several group consultations featuring participation by Clark County Comprehensive Planning, Clark County Health District, Dames and Moore, and EPA were performed between October 1999 and July 2000 to demonstrate UNLV flow chart and proposed modifications to the rule.

V. Determination of Vegetative Densities on Vacant Lands by Examination of Aerial Photos.

A. *Data source:* In Spring 1999, Clark County conducted a complete aerial orthophoto survey of the Las Vegas Valley. An aerial orthophoto database was generated that contained images corresponding to each township, range and section (approximately 1 square mile). Photos are available in digitized format at levels of 1-foot, 2-foot and 4-foot resolution. The photo edges slightly exceeded the section boundaries.

B. *Image generation:* A set of 54 orthophotos digitized at 1-foot resolution from within the Clark County land disposal boundary was requested by UNLV from Clark County Comprehensive Planning from October 1999 through January 2000.

The aerial photos, digitized with pixel resolutions of 1 foot, were printed in large A-size format at a scale of 1 inch = 200 feet (200 linear pixels to the inch), producing images approximately 26 inches x 26 inches for a 1 square mile section. Printing, performed by Clark County Comprehensive Planning, was on a HP DesignJet 755 large-format color inkjet printer with a resolution of 600 dots per inch, giving a printer resolution of 3 dots per linear pixel (or, 9 dots per square pixel). Printer output switches were set by Majed Khater (Clark County Comp Planning, 1999-2000) to give fairly accurate color rendition and high contrast.

At 1-foot pixel resolution, objects on the order of 2 feet in diameter can be resolved with the naked eye, occupying a physical dimension on the printed photos of 0.010 inch x 0.010 inch. This dimension corresponds approximately to the canopy diameter of desert vegetation such as *Larrea divaricata*, creosote bush. Printer contrast settings were determined that allowed desert vegetation, including creosote bush and trees, to appear in contrast to the background desert soil surface.

C. *Image examination*: Each selected aerial photo was manually inspected for vegetation densities. A transparent grid, of resolution 20 squares to the linear inch (0.05 linear inch per square), 400 squares to the square inch, was overlaid on a subregion of each aerial photo, and the number of grids containing contrasting vegetation was counted. The percentage area covered by vegetation was then determined by dividing the number of vegetation grids by the total number of grids in the sampled region. This process was repeated on 10 subsections of the aerial photo, and an average percentage areal cover was computed and reported for that photo.

D. *Results of analysis:*

1. Of 54 photos examined by UNLV between November 1999 and January 2000, 52 could be analyzed for percent coverage by large shrubs and trees. Two contained terrain that was too steep to permit accurate estimation of vegetative coverage. Plants on steep slopes falling away from the camera lens will appear at a denser coverage than if they were on flat ground.
2. The raw vegetation coverages for the 52 photos inspected by UNLV is tabulated in Table B-5. A summary is shown below in Table 13:

Table 13. Frequency distribution of Vegetative cover data from Aerial Photo Analysis

% Veg cover	*Frequency*	*Cumulative %*	*Indiv%*
0	4	8%	8%
2	15	37%	29%
4	3	42%	6%
6	7	56%	13%
8	3	62%	6%
10	3	67%	6%
12	4	75%	8%
14	2	79%	4%
16	0	79%	0%
18	2	83%	4%
20	0	83%	0%
25	3	88%	6%
30	2	92%	4%
40	2	96%	4%
50	1	98%	2%
60	1	100%	2%

Arithmetic mean	9.7%
Geometric mean	4.6%

The vegetation distribution in the sampled photos is bimodal, with peaks at 0-2% and 4-6% vegetative coverage. It is strongly right-skewed, with a few photos showing fairly high densities. As a result, a geometric mean is a better measure of central tendency, giving a value of about 5% coverage.

E. *Sources of measurement error:*

Resolution of the photos (1 foot per pixel) is not sufficient to resolve objects smaller than two feet in diameter, so individual small plants and individual tufts of grass will not be detected by this method. Dense carpets of grass and small plants can be detected, if contrast is sufficient, and areas with developed lawns, such as golf courses, could be detected in the photos. However, light or scattered carpets of short-statured grasses, often found on desert soil surfaces, could not be detected by manual orthophoto inspection. As a result, the vegetation coverage determined by visual inspection of areal photos will tend to *underestimate* the total fraction of land area covered by vegetation compared to site visits.

Appendix A – Valley-wide emissions estimates using stabilized soil, spike-corrected emissions factors

Table A.1.1 - Correspondence of GIS Polygons to Clark County Health District Monitoring stations

Polygon	CCHD station	Site Name	Approximate crossing streets or location
1	CC	City Center	Bonanza & 7th street
2	WW	Winterwood	E Sahara & Nellis
3	SL	Shadow Lane	Alta & Shadow Ln
4	BS	Craig Road	Craig Road & I15
5	PL	S.E. Valley	W Lake Mead Drive & Van Wagenen
6	MC	East Sahara	Maycliff Storage - E Sahara & I-515
7	MS	Micro-scale	E Charleston & 28th St.
8	DM	Dime III	~1/2 mile south of Winterwood station
9	FL	East Flamingo	E Flamingo & Swenson
10	PT	Pittman	Boulder Highway & Pabco Rd
11	JD	J.D. Smith	Bruce & Tonopah
12	PM	Paul Meyer Park	W Flamingo & Tenaya
13	WJ	Walter Johnson	W Alta & Buffalo
14	GV	Green Valley	Arroyo Grande & Santiago
15	CW	Crestwood	E Charleston & 17th St
16	SA	Sunrise Acres	Sunrise Acres E.S. - Sunrise & N. Eastern
17	LO	Lone Mountain	W. Gowan and Buffalo
18	PV	Palo Verde	Palo Verde H.S. - W Alta & Hulalapai

Table 1-III 1999 PM-10 Valley-wide emissions estimate — Phase II stabilized land geometric means

Assuming fixed stable/stabilized ratio — 9/10/2000 **spike corrected, not torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	90%	10%	1.7	0.0%
2	ww	18	1,574	90%	10%	38.3	0.3%
3	sl	5	1,315	90%	10%	9.0	0.1%
4	bs	48	22,369	90%	10%	2,548.9	17.5%
5	pl	79	8,288	90%	10%	876.9	6.0%
6	mc	14	422	90%	10%	8.5	0.1%
7	ms	23	170	90%	10%	5.5	0.0%
8	dm	16	2,192	90%	10%	46.6	0.3%
9	fl	59	7,833	90%	10%	636.2	4.4%
10	pt	26	6,764	90%	10%	239.7	1.6%
11	jd	12	3,116	90%	10%	57.8	0.4%
12	pm	26	30,662	90%	10%	1,148.7	7.9%
13	wj	20	1,523	90%	10%	44.9	0.3%
14	gv	33	26,021	90%	10%	1,216.5	8.4%
15	cw	20	192	90%	10%	27.3	0.2%
16	sa	35	207	90%	10%	9.9	0.1%
17	lo	95	26,102	90%	10%	4,515.0	31.0%
18	pv	162	12,125	90%	10%	3,112.3	21.4%
	Total	694	151,189			14,543.8	100.0%

Table 2-III 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/10/2000 **spike corrected, not torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	80%	20%	1.6	0.0%
2	ww	18	1,574	80%	20%	34.5	0.3%
3	sl	5	1,315	80%	20%	8.1	0.1%
4	bs	48	22,369	80%	20%	2,284.3	17.4%
5	pl	79	8,288	80%	20%	789.5	6.0%
6	mc	14	422	80%	20%	7.7	0.1%
7	ms	23	170	80%	20%	4.9	0.0%
8	dm	16	2,192	80%	20%	41.9	0.3%
9	fl	59	7,833	80%	20%	572.6	4.4%
10	pt	26	6,764	80%	20%	215.8	1.6%
11	jd	12	3,116	80%	20%	51.9	0.4%
12	pm	26	30,662	80%	20%	1,033.4	7.9%
13	wj	20	1,523	80%	20%	40.5	0.3%
14	gv	33	26,021	80%	20%	1,094.4	8.4%
15	cw	20	192	80%	20%	26.7	0.2%
16	sa	35	207	80%	20%	8.9	0.1%
17	lo	95	26,102	80%	20%	4,086.3	31.2%
18	pv	162	12,125	80%	20%	2,799.5	21.4%
	Total	694	151,189			13,102.5	100.0%

Table 4-III 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/12/2000 **spike corrected, not torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	70%	30%	1.4	0.0%
2	ww	18	1,574	70%	30%	30.7	0.3%
3	sl	5	1,315	70%	30%	7.2	0.1%
4	bs	48	22,369	70%	30%	2,019.6	17.3%
5	pl	79	8,288	70%	30%	702.2	6.0%
6	mc	14	422	70%	30%	6.8	0.1%
7	ms	23	170	70%	30%	4.4	0.0%
8	dm	16	2,192	70%	30%	37.3	0.3%
9	fl	59	7,833	70%	30%	508.9	4.4%
10	pt	26	6,764	70%	30%	191.8	1.6%
11	jd	12	3,116	70%	30%	46.1	0.4%
12	pm	26	30,662	70%	30%	918.0	7.9%
13	wj	20	1,523	70%	30%	36.2	0.3%
14	gv	33	26,021	70%	30%	972.3	8.3%
15	cw	20	192	70%	30%	26.1	0.2%
16	sa	35	207	70%	30%	8.0	0.1%
17	lo	95	26,102	70%	30%	3,657.6	31.4%
18	pv	162	12,125	70%	30%	2,486.8	21.3%
	Total	694	151,189			11,661.2	100.0%

Table 5-III Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, not torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	90%	10%	0.0	0.0%
2	ww	1	1,574	90%	10%	2.3	0.4%
3	sl	0	1,315	90%	10%	9.0	1.5%
4	bs	2	22,369	90%	10%	60.5	10.4%
5	pl	3	8,288	90%	10%	32.8	5.6%
6	mc	2	422	90%	10%	1.7	0.3%
7	ms	4	170	90%	10%	1.1	0.2%
8	dm	1	2,192	90%	10%	3.2	0.5%
9	fl	4	7,833	90%	10%	40.8	7.0%
10	pt	3	6,764	90%	10%	26.8	4.6%
11	jd	1	3,116	90%	10%	4.5	0.8%
12	pm	4	30,662	90%	10%	225.4	38.7%
13	wj	3	1,523	90%	10%	9.3	1.6%
14	gv	0	26,021	90%	10%	0.0	0.0%
15	cw	0	192	90%	10%	0.0	0.0%
16	sa	4	207	90%	10%	1.1	0.2%
17	lo	4	26,102	90%	10%	136.1	23.4%
18	pv	3	12,125	90%	10%	28.1	4.8%
	Total	39	151,189			582.7	100.0%

Table 6-III Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, not torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	80%	20%	0.0	0.0%
2	ww	1	1,574	80%	20%	2.1	0.4%
3	sl	0	1,315	80%	20%	0.0	0.0%
4	bs	2	22,369	80%	20%	54.4	10.6%
5	pl	3	8,288	80%	20%	29.6	5.7%
6	mc	2	422	80%	20%	1.5	0.3%
7	ms	4	170	80%	20%	1.0	0.2%
8	dm	1	2,192	80%	20%	2.9	0.6%
9	fl	4	7,833	80%	20%	36.8	7.1%
10	pt	3	6,764	80%	20%	24.1	4.7%
11	jd	1	3,116	80%	20%	4.1	0.8%
12	pm	4	30,662	80%	20%	202.0	39.2%
13	wj	3	1,523	80%	20%	8.3	1.6%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	80%	20%	0.0	0.0%
16	sa	4	207	80%	20%	1.0	0.2%
17	lo	4	26,102	80%	20%	122.6	23.8%
18	pv	3	12,125	80%	20%	25.2	4.9%
	Total	39	151,189			515.6	100.0%

Table 7-III Design Day PM-10 Valley-wide emissions estimate
Varying stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, not torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	60%	40%	0.0	0.0%
2	ww	1	1,574	70%	30%	1.9	0.4%
3	sl	0	1,315	60%	40%	0.0	0.0%
4	bs	2	22,369	80%	20%	54.4	10.6%
5	pl	3	8,288	80%	20%	29.6	5.8%
6	mc	2	422	60%	40%	1.2	0.2%
7	ms	4	170	60%	40%	0.8	0.2%
8	dm	1	2,192	70%	30%	2.7	0.5%
9	fl	4	7,833	80%	20%	36.8	7.2%
10	pt	3	6,764	80%	20%	24.1	4.7%
11	jd	1	3,116	60%	40%	3.8	0.7%
12	pm	4	30,662	80%	20%	202.0	39.4%
13	wj	3	1,523	70%	30%	7.5	1.5%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	60%	40%	0.0	0.0%
16	sa	4	207	60%	40%	0.8	0.2%
17	lo	4	26,102	80%	20%	122.6	23.9%
18	pv	3	12,125	80%	20%	25.2	4.9%
	Total	39	151,189			513.4	100.0%

Table 8-III Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, not torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	70%	30%	0.0	0.0%
2	ww	1	1,574	70%	30%	1.8	0.4%
3	sl	0	1,315	70%	30%	0.0	0.0%
4	bs	2	22,369	70%	30%	48.4	10.6%
5	pl	3	8,288	70%	30%	26.3	5.7%
6	mc	2	422	70%	30%	1.3	0.3%
7	ms	4	170	70%	30%	0.9	0.2%
8	dm	1	2,192	70%	30%	2.5	0.6%
9	fl	4	7,833	70%	30%	32.7	7.2%
10	pt	3	6,764	70%	30%	21.5	4.7%
11	jd	1	3,116	70%	30%	3.6	0.8%
12	pm	4	30,662	70%	30%	178.7	39.1%
13	wj	3	1,523	70%	30%	7.4	1.6%
14	gv	0	26,021	70%	30%	0.0	0.0%
15	cw	0	192	70%	30%	0.0	0.0%
16	sa	4	207	70%	30%	0.9	0.2%
17	lo	4	26,102	70%	30%	109.1	23.9%
18	pv	3	12,125	70%	30%	22.2	4.9%
	Total	39	151,189			457.3	100.0%

Table 9-III 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/10/2000 **spike corrected, not torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	84%	16%	1.6	0.0%
2	ww	18	1,574	84%	16%	36.0	0.3%
3	sl	5	1,315	84%	16%	8.5	0.1%
4	bs	48	22,369	84%	16%	2,390.1	17.5%
5	pl	79	8,288	84%	16%	824.5	6.0%
6	mc	14	422	84%	16%	8.0	0.1%
7	ms	23	170	84%	16%	5.2	0.0%
8	dm	16	2,192	84%	16%	43.8	0.3%
9	fl	59	7,833	84%	16%	598.0	4.4%
10	pt	26	6,764	84%	16%	225.3	1.6%
11	jd	12	3,116	84%	16%	54.3	0.4%
12	pm	26	30,662	84%	16%	1,079.5	7.9%
13	wj	20	1,523	84%	16%	42.3	0.3%
14	gv	33	26,021	84%	16%	1,143.2	8.4%
15	cw	20	192	84%	16%	26.9	0.2%
16	sa	35	207	84%	16%	9.3	0.1%
17	lo	95	26,102	84%	16%	4,257.8	31.1%
18	pv	162	12,125	84%	16%	2,924.6	21.4%
	Total	694	151,189			13,679.0	100.0%

Table 10-III Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, not torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	84%	16%	0.0	0.0%
2	ww	1	1,574	84%	16%	2.1	0.4%
3	sl	0	1,315	84%	16%	0.0	0.0%
4	bs	2	22,369	84%	16%	56.9	10.4%
5	pl	3	8,288	84%	16%	38.9	7.1%
6	mc	2	422	84%	16%	1.6	0.3%
7	ms	4	170	84%	16%	1.0	0.2%
8	dm	1	2,192	84%	16%	3.0	0.5%
9	fl	4	7,833	84%	16%	38.4	7.0%
10	pt	3	6,764	84%	16%	25.2	4.6%
11	jd	1	3,116	84%	16%	4.2	0.8%
12	pm	4	30,662	84%	16%	211.4	38.7%
13	wj	3	1,523	84%	16%	8.7	1.6%
14	gv	0	26,021	84%	16%	0.0	0.0%
15	cw	0	192	84%	16%	0.0	0.0%
16	sa	4	207	84%	16%	1.0	0.2%
17	lo	4	26,102	84%	16%	128.0	23.4%
18	pv	3	12,125	84%	16%	26.4	4.8%
	Total	39	151,189			546.7	100.0%

Table 1-IV 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/10/2000 **spike corrected, torn up**

Polygon id	letter code	#hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	90%	10%	1.8	0.0%
2	ww	18	1,574	90%	10%	40.5	0.3%
3	sl	5	1,315	90%	10%	9.5	0.1%
4	bs	48	22,369	90%	10%	2,638.0	17.4%
5	pl	79	8,288	90%	10%	926.3	6.1%
6	mc	14	422	90%	10%	9.0	0.1%
7	ms	23	170	90%	10%	5.8	0.0%
8	dm	16	2,192	90%	10%	49.3	0.3%
9	fl	59	7,833	90%	10%	669.9	4.4%
10	pt	26	6,764	90%	10%	253.0	1.7%
11	jd	12	3,116	90%	10%	60.4	0.4%
12	pm	26	30,662	90%	10%	1,208.4	8.0%
13	wj	20	1,523	90%	10%	47.0	0.3%
14	gv	33	26,021	90%	10%	1,279.4	8.4%
15	cw	20	192	90%	10%	27.3	0.2%
16	sa	35	207	90%	10%	10.5	0.1%
17	lo	95	26,102	90%	10%	4,687.1	30.9%
18	pv	162	12,125	90%	10%	3,267.0	21.5%
	Total	694	151,189			15,190.0	100.0%

Table 2-IV 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/10/2000 **spike corrected, torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	80%	20%	1.7	0.0%
2	ww	18	1,574	80%	20%	38.9	0.3%
3	sl	5	1,315	80%	20%	9.1	0.1%
4	bs	48	22,369	80%	20%	2,462.4	17.1%
5	pl	79	8,288	80%	20%	888.4	6.2%
6	mc	14	422	80%	20%	8.6	0.1%
7	ms	23	170	80%	20%	5.5	0.0%
8	dm	16	2,192	80%	20%	47.3	0.3%
9	fl	59	7,833	80%	20%	639.9	4.4%
10	pt	26	6,764	80%	20%	242.3	1.7%
11	jd	12	3,116	80%	20%	57.1	0.4%
12	pm	26	30,662	80%	20%	1,152.8	8.0%
13	wj	20	1,523	80%	20%	44.7	0.3%
14	gv	33	26,021	80%	20%	1,220.2	8.5%
15	cw	20	192	80%	20%	26.7	0.2%
16	sa	35	207	80%	20%	10.0	0.1%
17	lo	95	26,102	80%	20%	4,430.5	30.8%
18	pv	162	12,125	80%	20%	3,108.9	21.6%
	Total	694	151,189			14,394.9	100.0%

Table 4-IV 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/12/2000 **spike corrected, torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	70%	30%	1.6	0.0%
2	ww	18	1,574	70%	30%	37.3	0.3%
3	sl	5	1,315	70%	30%	8.8	0.1%
4	bs	48	22,369	70%	30%	2,286.8	16.8%
5	pl	79	8,288	70%	30%	850.5	6.3%
6	mc	14	422	70%	30%	8.1	0.1%
7	ms	23	170	70%	30%	5.2	0.0%
8	dm	16	2,192	70%	30%	45.4	0.3%
9	fl	59	7,833	70%	30%	609.9	4.5%
10	pt	26	6,764	70%	30%	231.6	1.7%
11	jd	12	3,116	70%	30%	53.9	0.4%
12	pm	26	30,662	70%	30%	1,097.1	8.1%
13	wj	20	1,523	70%	30%	42.5	0.3%
14	gv	33	26,021	70%	30%	1,161.0	8.5%
15	cw	20	192	70%	30%	26.1	0.2%
16	sa	35	207	70%	30%	9.6	0.1%
17	lo	95	26,102	70%	30%	4,173.9	30.7%
18	pv	162	12,125	70%	30%	2,950.8	21.7%
	Total	694	151,189			13,599.9	100.0%

Table 5-IV Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	90%	10%	0.0	0.0%
2	ww	1	1,574	90%	10%	2.4	0.4%
3	sl	0	1,315	90%	10%	9.5	1.6%
4	bs	2	22,369	90%	10%	63.9	10.5%
5	pl	3	8,288	90%	10%	34.7	5.7%
6	mc	2	422	90%	10%	1.7	0.3%
7	ms	4	170	90%	10%	1.1	0.2%
8	dm	1	2,192	90%	10%	3.4	0.6%
9	fl	4	7,833	90%	10%	43.2	7.1%
10	pt	3	6,764	90%	10%	28.3	4.7%
11	jd	1	3,116	90%	10%	4.7	0.8%
12	pm	4	30,662	90%	10%	232.4	38.2%
13	wj	3	1,523	90%	10%	9.5	1.6%
14	gv	0	26,021	90%	10%	0.0	0.0%
15	cw	0	192	90%	10%	0.0	0.0%
16	sa	4	207	90%	10%	1.1	0.2%
17	lo	4	26,102	90%	10%	144.1	23.7%
18	pv	3	12,125	90%	10%	28.6	4.7%
	Total	39	151,189			608.7	100.0%

Table 6-IV Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	80%	20%	0.0	0.0%
2	ww	1	1,574	80%	20%	2.3	0.4%
3	sl	0	1,315	80%	20%	0.0	0.0%
4	bs	2	22,369	80%	20%	61.4	10.8%
5	pl	3	8,288	80%	20%	33.4	5.9%
6	mc	2	422	80%	20%	1.6	0.3%
7	ms	4	170	80%	20%	1.1	0.2%
8	dm	1	2,192	80%	20%	3.2	0.6%
9	fl	4	7,833	80%	20%	41.6	7.3%
10	pt	3	6,764	80%	20%	27.2	4.8%
11	jd	1	3,116	80%	20%	4.5	0.8%
12	pm	4	30,662	80%	20%	216.0	38.1%
13	wj	3	1,523	80%	20%	8.8	1.5%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	80%	20%	0.0	0.0%
16	sa	4	207	80%	20%	1.1	0.2%
17	lo	4	26,102	80%	20%	138.6	24.4%
18	pv	3	12,125	80%	20%	26.1	4.6%
	Total	39	151,189			566.8	100.0%

Table 7-IV Design Day PM-10 Valley-wide emissions estimate
Varying stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	60%	40%	0.0	0.0%
2	ww	1	1,574	70%	30%	1.9	0.3%
3	sl	0	1,315	60%	40%	0.0	0.0%
4	bs	2	22,369	80%	20%	61.4	10.9%
5	pl	3	8,288	80%	20%	33.4	5.9%
6	mc	2	422	60%	40%	1.2	0.2%
7	ms	4	170	60%	40%	0.8	0.1%
8	dm	1	2,192	70%	30%	2.7	0.5%
9	fl	4	7,833	80%	20%	41.6	7.4%
10	pt	3	6,764	80%	20%	27.2	4.8%
11	jd	1	3,116	60%	40%	3.8	0.7%
12	pm	4	30,662	80%	20%	216.0	38.4%
13	wj	3	1,523	70%	30%	7.5	1.3%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	60%	40%	0.0	0.0%
16	sa	4	207	60%	40%	0.8	0.1%
17	lo	4	26,102	80%	20%	138.6	24.6%
18	pv	3	12,125	80%	20%	26.1	4.6%
	Total	39	151,189			562.9	100.0%

Table 8-IV Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike corrected, torn-up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	70%	30%	0.0	0.0%
2	ww	1	1,574	70%	30%	2.2	0.4%
3	sl	0	1,315	70%	30%	0.0	0.0%
4	bs	2	22,369	70%	30%	58.9	11.0%
5	pl	3	8,288	70%	30%	32.0	6.0%
6	mc	2	422	70%	30%	1.5	0.3%
7	ms	4	170	70%	30%	1.0	0.2%
8	dm	1	2,192	70%	30%	3.1	0.6%
9	fl	4	7,833	70%	30%	39.9	7.5%
10	pt	3	6,764	70%	30%	26.1	4.9%
11	jd	1	3,116	70%	30%	4.3	0.8%
12	pm	4	30,662	70%	30%	199.6	37.4%
13	wj	3	1,523	70%	30%	8.0	1.5%
14	gv	0	26,021	70%	30%	0.0	0.0%
15	cw	0	192	70%	30%	0.0	0.0%
16	sa	4	207	70%	30%	1.1	0.2%
17	lo	4	26,102	70%	30%	133.0	24.9%
18	pv	3	12,125	70%	30%	23.5	4.4%
	Total	39	151,189			534.2	100.0%

Table 9-IV 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
9/10/2000 **spike corrected, torn up**

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	84%	16%	1.7	0.0%
2	ww	18	1,574	84%	16%	39.5	0.3%
3	sl	5	1,315	84%	16%	9.3	0.1%
4	bs	48	22,369	84%	16%	2,532.6	17.2%
5	pl	79	8,288	84%	16%	903.6	6.1%
6	mc	14	422	84%	16%	8.7	0.1%
7	ms	23	170	84%	16%	5.6	0.0%
8	dm	16	2,192	84%	16%	48.1	0.3%
9	fl	59	7,833	84%	16%	651.9	4.4%
10	pt	26	6,764	84%	16%	246.6	1.7%
11	jd	12	3,116	84%	16%	58.4	0.4%
12	pm	26	30,662	84%	16%	1,175.0	8.0%
13	wj	20	1,523	84%	16%	45.6	0.3%
14	gv	33	26,021	84%	16%	1,243.9	8.5%
15	cw	20	192	84%	16%	26.9	0.2%
16	sa	35	207	84%	16%	10.2	0.1%
17	lo	95	26,102	84%	16%	4,533.1	30.8%
18	pv	162	12,125	84%	16%	3,172.1	21.6%
	Total	694	151,189			14,712.9	100.0%

Table 10-IV Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means
spike-corrected, torn up

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	0	318	84%	16%	0.0	0.0%
2	ww	1	1,574	84%	16%	2.3	0.4%
3	sl	0	1,315	84%	16%	0.0	0.0%
4	bs	2	22,369	84%	16%	62.4	10.8%
5	pl	3	8,288	84%	16%	33.9	5.8%
6	mc	2	422	84%	16%	1.7	0.3%
7	ms	4	170	84%	16%	1.1	0.2%
8	dm	1	2,192	84%	16%	3.3	0.6%
9	fl	4	7,833	84%	16%	42.2	7.3%
10	pt	3	6,764	84%	16%	27.7	4.8%
11	jd	1	3,116	84%	16%	4.6	0.8%
12	pm	4	30,662	84%	16%	222.5	38.4%
13	wj	3	1,523	84%	16%	9.1	1.6%
14	gv	0	26,021	84%	16%	0.0	0.0%
15	cw	0	192	84%	16%	0.0	0.0%
16	sa	4	207	84%	16%	1.1	0.2%
17	lo	4	26,102	84%	16%	140.8	24.3%
18	pv	3	12,125	84%	16%	27.1	4.7%
	Total	39	151,189			579.8	100.0%

Table A.2 - Polygon CCHD Station bs

Stabilized soil, spike-corrected emission factors

BS PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 4	vacant land area	22369	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		18789.96		18789.96		3579.04		3579.04	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	24	480	20	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
1	21	12	492	21.5	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
1	21	13	493	22.200001	1.38E-03	25.93			1.38E-04	0.49			26.42
1	21	14	494	23.200001	1.38E-03	25.93			1.38E-04	0.49			26.42
1	21	15	495	21.9	1.38E-03	25.93			1.38E-04	0.49			26.42
1	21	16	496	21.6	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	2	962	21.299999	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
2	10	7	967	20.799999	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	8	968	22.299999	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	9	969	21.700001	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	10	970	22.9	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	11	971	22.9	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	13	973	22	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	14	974	23	1.38E-03	25.93			1.38E-04	0.49			26.42
2	10	15	975	20.1	1.38E-03	25.93			1.38E-04	0.49			26.42
2	21	15	1239	20.5	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
2	25	13	1333	20.4	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
2	25	14	1334	20.1	1.38E-03	25.93			1.38E-04	0.49			26.42
3	30	13	2125	21.5	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
3	30	14	2126	21	1.38E-03	25.93			1.38E-04	0.49			26.42
3	31	14	2150	20.799999	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
3	31	15	2151	24.1	1.38E-03	25.93			1.38E-04	0.49			26.42
3	31	16	2152	31.9	3.16E-03	59.38			4.83E-04	1.73			61.10
3	31	17	2153	28	2.57E-03	48.29			1.09E-04	0.39			48.68
4	5	14	2270	21.5	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
4	5	15	2271	21.9	1.38E-03	25.93			1.38E-04	0.49			26.42
4	9	3	2355	20.799999	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
4	9	6	2358	20.200001	1.38E-03	25.93			1.38E-04	0.49			26.42
4	9	8	2360	21	1.38E-03	25.93			1.38E-04	0.49			26.42
4	12	17	2441	20.1	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
5	26	22	3502	21.1	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
7	9	22	4558	23	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
7	9	23	4559	20	1.38E-03	25.93			1.38E-04	0.49			26.42
7	14	20	4676	20.4	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
7	14	22	4678	21	1.38E-03	25.93			1.38E-04	0.49			26.42
9	18	2	6242	27.299999	2.57E-03	48.29	4.90E-04	9.21	1.09E-04	0.39	1.00E-04	0.36	58.25
9	18	3	6243	22	1.38E-03	25.93			1.38E-04	0.49			26.42

10	21	4	7036	34.599998	3.16E-03	59.38	5.88E-04	11.05	4.83E-04	1.73	1.00E-04	0.36	72.51
11	21	9	7785	20.5	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
11	21	10	7786	21.700001	1.38E-03	25.93			1.38E-04	0.49			26.42
12	1	14	8030	23.799999	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
12	1	15	8031	20.9	1.38E-03	25.93			1.38E-04	0.49			26.42
12	3	8	8072	20.700001	1.38E-03	25.93	2.12E-04	3.98	1.38E-04	0.49	4.59E-06	0.02	30.42
12	3	9	8073	21.1	1.38E-03	25.93			1.38E-04	0.49			26.42
12	7	20	8180	25.4	2.57E-02	482.90	4.90E-04	9.21	1.09E-04	0.39		0.00	492.50
12	7	22	8182	25.799999	2.57E-02	482.90			1.09E-04	0.39			483.29
12	7	23	8183	20.6	1.38E-03	25.93			1.38E-04	0.49			26.42
12	7	24	8184	21	1.38E-03	25.93			1.38E-04	0.49			26.42
Total													2390.14

Table A.3. - Polygon 1 - CCHD Station cc

Stabilized soil, spike-corrected emission factors

CC PM-10	1999				Stable	Stable	Stable	Stable	**Stabilized**	**Stabilized**	**Stabilized**	**Stabilized**	
Polygon 1	vacant land area	317.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		266.7		266.7		50.8		50.8	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
3	31	16	2152	25.200001	2.57E-03	0.69	4.90E-04	0.13	1.09E-04	0.01		0.00	0.82
3	31	17	2153	21.5	1.38E-03	0.37			1.38E-04	0.01			0.38
12	7	20	8180	20.6	1.38E-03	0.37	2.12E-04	0.06	1.38E-04	0.01	4.59E-06	0.00	0.43
Total													1.63

Table A.4 - Polygon 15 CCHD Station cw

Stabilized soil, spike-corrected emission factors

CW PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 15	vacant land area	192	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		161.28		161.28		30.72		30.72	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
5	2	20	2924	35.900002	2.99E-03	0.48	9.24E-04	0.15	3.32E-04	0.01		0	0.64
5	2	21	2925	50	1.10E-02	1.77			6.30E-03	0.19			1.97
5	2	22	2926	50	1.10E-02	1.77			6.30E-03	0.19			1.97
5	2	23	2927	49.599998	7.58E-03	1.22			6.30E-03	0.19			1.42
5	2	24	2928	48.900002	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	1	2929	47.700001	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	2	2930	47.099998	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	3	2931	47	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	4	2932	46.099998	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	5	2933	45.799999	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	6	2934	45.799999	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	7	2935	45.900002	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	8	2936	45.5	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	9	2937	45.299999	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	10	2938	45.400002	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	11	2939	45.200001	7.58E-03	1.22			6.30E-03	0.19			1.42
5	3	12	2940	44.200001	5.92E-03	0.95			6.30E-03	0.19			1.15
5	3	13	2941	43.900002	5.92E-03	0.95			6.30E-03	0.19			1.15
5	3	14	2942	43.299999	5.92E-03	0.95			6.30E-03	0.19			1.15
5	3	15	2943	39.900002	2.99E-03	0.48			3.32E-04	0.01			0.49
Total													26.92

DM PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized		
Polygon 8	vacant land area	2192	acres											
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16		
	unstable fraction	0.16		Area (acres)		1841.28		1841.28		350.72		350.72		
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike		
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total	Daily
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons	25-Feb
2	25	15	1335	20.299999	1.38E-03	2.54	2.12E-04	0.39	1.38E-04	0.05	4.59E-06	0.00	2.98	2.98
3	15	16	1768	21.4	1.38E-03	2.54	2.12E-04	0.39	1.38E-04	0.05	4.59E-06	0.00	2.98	
3	20	13	1885	20.299999	1.38E-03	2.54	2.12E-04	0.39	1.38E-04	0.05	4.59E-06	0.00	2.98	
3	20	14	1886	21.6	1.38E-03	2.54			1.38E-04	0.05			2.59	
3	20	15	1887	21.4	1.38E-03	2.54			1.38E-04	0.05			2.59	
3	20	16	1888	20.200001	1.38E-03	2.54			1.38E-04	0.05			2.59	
3	31	15	2151	21.200001	1.38E-03	2.54	2.12E-04	0.39	1.38E-04	0.05	4.59E-06	0.00	2.98	
3	31	17	2153	20.799999	1.38E-03	2.54			1.38E-04	0.05			2.59	
4	6	1	2281	21.6	1.38E-03	2.54	2.12E-04	0.39	1.38E-04	0.05	4.59E-06	0.00	2.98	
4	6	2	2282	20.4	1.38E-03	2.54			1.38E-04	0.05			2.59	
4	6	3	2283	21.1	1.38E-03	2.54			1.38E-04	0.05			2.59	
4	6	4	2284	20.9	1.38E-03	2.54			1.38E-04	0.05			2.59	
4	6	5	2285	22.700001	1.38E-03	2.54			1.38E-04	0.05			2.59	
4	6	6	2286	22.299999	1.38E-03	2.54			1.38E-04	0.05			2.59	
4	6	7	2287	21	1.38E-03	2.54			1.38E-04	0.05			2.59	
7	27	14	4982	20.4	1.38E-03	2.54	2.12E-04	0.39	1.38E-04	0.05	4.59E-06	0.00	2.98	
Total													43.78	

Table A.6 - Polygon 9 - CCHD Station fl

Stabilized soil, spike-corrected emission factors

FL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 9	vacant land area	7832.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		6579.3		6579.3		1253.2		1253.2	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	21	477	24.4	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
1	20	24	480	25.5	1.38E-03	9.08			1.09E-04	0.14			9.22
1	21	1	481	22.799999	1.38E-03	9.08			1.38E-04	0.17			9.25
1	21	12	492	22.799999	1.38E-03	9.08			1.38E-04	0.17			9.25
1	21	13	493	23.5	1.38E-03	9.08			1.38E-04	0.17			9.25
2	21	11	1235	20	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
2	21	12	1236	22.1	1.38E-03	9.08			1.38E-04	0.17			9.25
2	21	13	1237	22.1	1.38E-03	9.08			1.38E-04	0.17			9.25
2	21	14	1238	22.299999	1.38E-03	9.08			1.38E-04	0.17			9.25
2	25	9	1329	20.5	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
2	25	10	1330	23.4	1.38E-03	9.08			1.38E-04	0.17			9.25
2	25	12	1332	22.9	1.38E-03	9.08			1.38E-04	0.17			9.25
2	25	13	1333	20.6	1.38E-03	9.08			1.38E-04	0.17			9.25
3	3	24	1488	20.200001	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
3	4	1	1489	22	1.38E-03	9.08			1.38E-04	0.17			9.25
3	20	16	1888	21.6	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
3	30	11	2123	24.700001	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
3	30	12	2124	25.5	2.57E-03	16.91			1.09E-04	0.14			17.05
3	30	13	2125	24.1	1.38E-03	9.08			1.38E-04	0.17			9.25
3	30	14	2126	23.6	1.38E-03	9.08			1.38E-04	0.17			9.25
3	30	15	2127	22.6	1.38E-03	9.08			1.38E-04	0.17			9.25
3	31	2	2138	20	1.38E-03	9.08			1.38E-04	0.17			9.25
3	31	6	2142	20.5	1.38E-03	9.08			1.38E-04	0.17			9.25
3	31	8	2144	20.9	1.38E-03	9.08			1.38E-04	0.17			9.25
3	31	13	2149	26	2.57E-03	16.91			1.09E-04	0.14			17.05
3	31	14	2150	27.299999	2.57E-03	16.91			1.09E-04	0.14			17.05
3	31	15	2151	23.299999	1.38E-03	9.08			1.38E-04	0.17			9.25
3	31	16	2152	23.299999	1.38E-03	9.08			1.38E-04	0.17			9.25
3	31	17	2153	24.799999	1.38E-03	9.08			1.38E-04	0.17			9.25
4	3	17	2225	20.1	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
4	8	21	2349	21.799999	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
4	8	22	2350	20	1.38E-03	9.08			1.38E-04	0.17			9.25
4	8	23	2351	21	1.38E-03	9.08			1.38E-04	0.17			9.25
4	27	14	2798	20.200001	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
4	27	24	2808	21.1	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
4	28	14	2822	20.5	1.38E-03	9.08			1.38E-04	0.17			9.25
4	28	15	2823	20.799999	1.38E-03	9.08			1.38E-04	0.17			9.25

5	2	17	2921	20.4	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17		0.00	10.65
5	2	18	2922	24.4	1.38E-03	9.08			1.38E-04	0.17			9.25
5	2	21	2925	21.1	1.38E-03	9.08			1.38E-04	0.17			9.25
5	2	23	2927	23.6	1.38E-03	9.08			1.38E-04	0.17			9.25
5	12	24	3168	25.9	2.57E-03	16.91	2.12E-04	1.39	1.09E-04	0.14		0.00	18.44
5	13	1	3169	23.6	1.38E-03	9.08			1.38E-04	0.17			9.25
5	13	2	3170	21.799999	1.38E-03	9.08			1.38E-04	0.17			9.25
5	13	18	3186	20.4	1.38E-03	9.08			1.38E-04	0.17			9.25
5	13	19	3187	20.6	1.38E-03	9.08			1.38E-04	0.17			9.25
5	13	20	3188	22	1.38E-03	9.08			1.38E-04	0.17			9.25
5	13	21	3189	23.700001	1.38E-03	9.08			1.38E-04	0.17			9.25
5	14	18	3210	21.4	1.38E-03	9.08			1.38E-04	0.17			9.25
5	14	22	3214	23.5	1.38E-03	9.08			1.38E-04	0.17			9.25
6	2	23	3671	22	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
6	2	24	3672	23.799999	1.38E-03	9.08			1.38E-04	0.17			9.25
6	3	1	3673	22.6	1.38E-03	9.08			1.38E-04	0.17			9.25
6	3	4	3676	22.299999	1.38E-03	9.08			1.38E-04	0.17			9.25
12	2	23	8063	21.700001	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
12	3	8	8072	21.5	1.38E-03	9.08			1.38E-04	0.17			9.25
12	3	9	8073	21.700001	1.38E-03	9.08			1.38E-04	0.17			9.25
12	3	10	8074	20.5	1.38E-03	9.08			1.38E-04	0.17			9.25
12	7	20	8180	21.799999	1.38E-03	9.08	2.12E-04	1.39	1.38E-04	0.17	4.59E-06	0.01	10.65
Total													598.02

Table A.7 - Polygon 14 - CCHD Station gv

Stabilized soil, spike-corrected emission factors

GV PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 14	vacant land area	26020.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		21857.22		21857.22		4163.28		4163.28	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	20	476	20.1	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
1	20	21	477	23.5	1.38E-03	30.16			1.38E-04	0.57			30.74
1	21	13	493	21.9	1.38E-03	30.16			1.38E-04	0.57			30.74
1	25	14	590	20.299999	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
4	8	24	2352	20.299999	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
4	9	2	2354	21	1.38E-03	30.16			1.38E-04	0.57			30.74
5	2	19	2923	20.299999	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
5	2	24	2928	20.799999	1.38E-03	30.16			1.38E-04	0.57			30.74
5	3	1	2929	22.700001	1.38E-03	30.16			1.38E-04	0.57			30.74
5	3	2	2930	20.200001	1.38E-03	30.16			1.38E-04	0.57			30.74
5	3	9	2937	20	1.38E-03	30.16			1.38E-04	0.57			30.74
5	3	10	2938	20.200001	1.38E-03	30.16			1.38E-04	0.57			30.74
5	3	13	2941	20.1	1.38E-03	30.16			1.38E-04	0.57			30.74
5	12	24	3168	21.6	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
5	13	1	3169	22.700001	1.38E-03	30.16			1.38E-04	0.57			30.74
5	13	2	3170	20.5	1.38E-03	30.16			1.38E-04	0.57			30.74
5	13	21	3189	25.4	2.57E-03	56.17			1.09E-04	0.45			56.63
5	14	19	3211	21.799999	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
5	14	20	3212	21.6	1.38E-03	30.16			1.38E-04	0.57			30.74
6	21	12	4116	22.6	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
6	21	13	4117	20.6	1.38E-03	30.16			1.38E-04	0.57			30.74
6	21	14	4118	20.4	1.38E-03	30.16			1.38E-04	0.57			30.74
7	3	12	4404	20.299999	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
7	6	20	4484	20.1	1.38E-03	30.16			1.38E-04	0.57			30.74
7	7	5	4493	22.4	1.38E-03	30.16			1.38E-04	0.57			30.74
7	27	14	4982	25.9	2.57E-03	56.17			1.09E-04	0.45			56.63
7	27	15	4983	27.4	2.57E-03	56.17			1.09E-04	0.45			56.63
7	28	18	5010	21.299999	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
8	6	9	5217	20	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
8	6	10	5218	21.200001	1.38E-03	30.16			1.38E-04	0.57			30.74
8	6	11	5219	21	1.38E-03	30.16			1.38E-04	0.57			30.74
8	6	14	5222	20.5	1.38E-03	30.16			1.38E-04	0.57			30.74
11	17	12	7692	20.9	1.38E-03	30.16	2.12E-04	4.63	1.38E-04	0.57	4.59E-06	0.02	35.39
Total													1143.19

JD PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 11	vacant land area	3115.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		2617.02		2617.02		498.48		498.48	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	26	11	611	22.9	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
2	25	15	1335	24.6	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
3	30	13	2125	21.200001	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
3	31	13	2149	21.4	1.38E-03	3.61			1.38E-04	0.07			3.68
3	31	14	2150	26.1	2.57E-03	6.73			1.09E-04	0.05			6.78
3	31	15	2151	24.200001	1.38E-03	3.61			1.38E-04	0.07			3.68
3	31	16	2152	26.5	2.57E-03	6.73			1.09E-04	0.05			6.78
3	31	17	2153	23.1	1.38E-03	3.61			1.38E-04	0.07			3.68
4	12	9	2433	21.6	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
7	27	14	4982	20.299999	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
7	27	15	4983	20.4	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
12	7	20	8180	21.799999	1.38E-03	3.61	2.12E-04	0.55	1.38E-04	0.07	4.59E-06	0.00	4.24
Total													54.26

Table A.9 - Polygon 17 - CCHD Station lo

Stabilized soil, spike-corrected emission factors

LO PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 17	vacant land area	26101.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		21925.26		21925.26		4176.24		4176.24	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	8	8	176	20.5	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
1	8	9	177	21.9	1.38E-03	30.26			1.38E-04	0.58			30.83
1	8	11	179	20.200001	1.38E-03	30.26			1.38E-04	0.58			30.83
1	8	13	181	20.799999	1.38E-03	30.26			1.38E-04	0.58			30.83
1	8	14	182	22.4	1.38E-03	30.26			1.38E-04	0.58			30.83
1	8	15	183	20.799999	1.38E-03	30.26			1.38E-04	0.58			30.83
1	20	20	476	25.1	2.57E-03	56.35	4.90E-04	10.74	1.09E-04	0.46		0.00	67.55
1	20	21	477	28	2.57E-03	56.35			1.09E-04	0.46			56.80
1	20	22	478	26.299999	2.57E-03	56.35			1.09E-04	0.46			56.80
1	20	23	479	23.700001	1.38E-03	30.26			1.38E-04	0.58			30.83
1	21	11	491	21.5	1.38E-03	30.26			1.38E-04	0.58			30.83
1	21	12	492	20	1.38E-03	30.26			1.38E-04	0.58			30.83
1	21	13	493	20.1	1.38E-03	30.26			1.38E-04	0.58			30.83
1	21	14	494	21.1	1.38E-03	30.26			1.38E-04	0.58			30.83
1	21	15	495	20.9	1.38E-03	30.26			1.38E-04	0.58			30.83
1	21	16	496	20.6	1.38E-03	30.26			1.38E-04	0.58			30.83
1	26	12	612	21.6	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
2	9	14	950	21	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
2	9	15	951	21.6	1.38E-03	30.26			1.38E-04	0.58			30.83
2	9	16	952	22.799999	1.38E-03	30.26			1.38E-04	0.58			30.83
2	10	2	962	22	1.38E-03	30.26			1.38E-04	0.58			30.83
2	10	5	965	20.799999	1.38E-03	30.26			1.38E-04	0.58			30.83
2	10	10	970	22.6	1.38E-03	30.26			1.38E-04	0.58			30.83
2	10	11	971	25.9	2.57E-03	56.35			1.09E-04	0.46			56.80
2	10	12	972	27.200001	2.57E-03	56.35			1.09E-04	0.46			56.80
2	10	13	973	24.200001	1.38E-03	30.26			1.38E-04	0.58			30.83
2	10	15	975	22	1.38E-03	30.26			1.38E-04	0.58			30.83
2	10	16	976	21.1	1.38E-03	30.26			1.38E-04	0.58			30.83
2	19	10	1186	20.700001	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
2	19	11	1187	20.299999	1.38E-03	30.26			1.38E-04	0.58			30.83
2	19	13	1189	20.299999	1.38E-03	30.26			1.38E-04	0.58			30.83
2	21	13	1237	20.299999	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
2	21	14	1238	21.1	1.38E-03	30.26			1.38E-04	0.58			30.83
2	25	12	1332	23.9	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
2	25	13	1333	22	1.38E-03	30.26			1.38E-04	0.58			30.83
2	25	14	1334	21.6	1.38E-03	30.26			1.38E-04	0.58			30.83
2	25	15	1335	20	1.38E-03	30.26			1.38E-04	0.58			30.83

3	9	9	1617	21.700001	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
3	9	10	1618	25.799999	2.57E-03	56.35			1.09E-04	0.46			56.80
3	9	11	1619	24.6	1.38E-03	30.26			1.38E-04	0.58			30.83
3	9	12	1620	24.5	1.38E-03	30.26			1.38E-04	0.58			30.83
3	9	13	1621	22.1	1.38E-03	30.26			1.38E-04	0.58			30.83
3	9	14	1622	22	1.38E-03	30.26			1.38E-04	0.58			30.83
3	9	15	1623	20.9	1.38E-03	30.26			1.38E-04	0.58			30.83
3	15	16	1768	22	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
3	20	14	1886	20.299999	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
3	20	15	1887	22.299999	1.38E-03	30.26			1.38E-04	0.58			30.83
3	20	16	1888	20.4	1.38E-03	30.26			1.38E-04	0.58			30.83
3	30	10	2122	21.200001	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
3	30	11	2123	21.799999	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	1	2137	22.299999	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	2	2138	24.200001	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	3	2139	28.1	2.57E-03	56.35			1.09E-04	0.46			56.80
3	31	4	2140	27.200001	2.57E-03	56.35			1.09E-04	0.46			56.80
3	31	5	2141	25.1	2.57E-03	56.35			1.09E-04	0.46			56.80
3	31	6	2142	20.6	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	9	2145	20.799999	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	10	2146	22.1	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	11	2147	22.6	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	12	2148	23.1	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	13	2149	21.4	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	14	2150	21.4	1.38E-03	30.26			1.38E-04	0.58			30.83
3	31	16	2152	29.200001	2.57E-03	56.35			1.09E-04	0.46			56.80
3	31	17	2153	22.6	1.38E-03	30.26			1.38E-04	0.58			30.83
4	9	2	2354	21.5	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
4	9	12	2364	20.200001	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
5	3	16	2944	20.1	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
5	26	20	3500	23.6	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
5	26	21	3501	22.5	1.38E-03	30.26			1.38E-04	0.58			30.83
5	26	22	3502	21.200001	1.38E-03	30.26			1.38E-04	0.58			30.83
7	15	21	4701	23	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
7	27	15	4983	21	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
10	15	4	6892	24.299999	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
10	16	3	6915	20.200001	1.38E-03	30.26			1.38E-04	0.58			30.83
10	16	4	6916	22.200001	1.38E-03	30.26			1.38E-04	0.58			30.83
10	16	6	6918	20.9	1.38E-03	30.26			1.38E-04	0.58			30.83
10	16	10	6922	23.5	1.38E-03	30.26			1.38E-04	0.58			30.83
10	16	11	6923	20.4	1.38E-03	30.26			1.38E-04	0.58			30.83
10	16	12	6924	20.9	1.38E-03	30.26			1.38E-04	0.58			30.83
10	31	4	7276	80.599998	1.69E-02	370.54	3.32E-03	72.79	6.30E-03	26.31		0.00	469.64
11	14	15	7623	72.699997	1.69E-02	370.54	3.32E-03	72.79	6.30E-03	26.31		0.00	469.64

11	17	9	7689	21.6	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
12	1	14	8030	20.5	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
12	2	22	8062	23	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
12	2	23	8063	29.5	2.57E-03	56.35			1.09E-04	0.46			56.80
12	2	24	8064	22.700001	1.38E-03	30.26			1.38E-04	0.58			30.83
12	3	9	8073	23.6	1.38E-03	30.26			1.38E-04	0.58			30.83
12	7	20	8180	24.299999	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
12	7	21	8181	25.1	2.57E-03	56.35			1.09E-04	0.46			56.80
12	7	22	8182	25	2.57E-03	56.35			1.09E-04	0.46			56.80
12	7	24	8184	20.6	1.38E-03	30.26			1.38E-04	0.58			30.83
12	8	1	8185	22.299999	1.38E-03	30.26			1.38E-04	0.58			30.83
12	8	2	8186	21.700001	1.38E-03	30.26			1.38E-04	0.58			30.83
12	21	12	8508	21.299999	1.38E-03	30.26	2.12E-04	4.65	1.38E-04	0.58	4.59E-06	0.02	35.50
12	21	13	8509	21.1	1.38E-03	30.26			1.38E-04	0.58			30.83
Total													4257.80

MC PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 6	vacant land area	421.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		354.06		354.06		67.44		67.44	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
2	10	10	970	20.5	1.38E-03	0.49	2.12E-04	0.08	1.38E-04	0.01	4.59E-06	0.00	0.57
2	10	11	971	20.200001	1.38E-03	0.49			1.38E-04	0.01			0.50
2	10	14	974	20	1.38E-03	0.49			1.38E-04	0.01			0.50
2	25	14	1334	25.200001	2.57E-03	0.91	4.90E-04	0.17	1.09E-04	0.01	4.59E-06	0.00	1.09
2	25	15	1335	24.1	1.38E-03	0.49			1.38E-04	0.01			0.50
3	30	13	2125	22	1.38E-03	0.49	2.12E-04	0.08	1.38E-04	0.01	4.59E-06	0.00	0.57
3	30	14	2126	20.1	1.38E-03	0.49			1.38E-04	0.01			0.50
3	31	14	2150	21.9	1.38E-03	0.49	2.12E-04	0.08	1.38E-04	0.01	4.59E-06	0.00	0.57
3	31	15	2151	22.5	1.38E-03	0.49			1.38E-04	0.01			0.50
3	31	16	2152	24.1	1.38E-03	0.49			1.38E-04	0.01			0.50
3	31	18	2154	23.6	1.38E-03	0.49			1.38E-04	0.01			0.50
4	8	23	2351	21.5	1.38E-03	0.49	2.12E-04	0.08	1.38E-04	0.01	4.59E-06	0.00	0.57
9	18	2	6242	20.299999	1.38E-03	0.49	2.12E-04	0.08	1.38E-04	0.01	4.59E-06	0.00	0.57
12	7	20	8180	20.4	1.38E-03	0.49	2.12E-04	0.08	1.38E-04	0.01	4.59E-06	0.00	0.57
Total													8.02

Table A.11 - Polygon 7 - CCHD Station ms

Stabilized soil, spike-corrected emission factors

MS PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 7	vacant land area	169.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		142.38		142.38		27.12		27.12	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	26	11	611	23.9	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
2	25	13	1333	20.6	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
2	25	14	1334	25.5	2.57E-03	0.37			1.09E-04	0.00			0.37
2	25	15	1335	24.9	1.38E-03	0.20			1.38E-04	0.00			0.20
2	25	16	1336	21.799999	1.38E-03	0.20			1.38E-04	0.00			0.20
3	9	13	1621	20.6	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
3	9	15	1623	20	1.38E-03	0.20			1.38E-04	0.00			0.20
3	30	11	2123	22.4	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
3	30	12	2124	24	1.38E-03	0.20			1.38E-04	0.00			0.20
3	30	13	2125	25.4	2.57E-03	0.37			1.09E-04	0.00			0.37
3	30	14	2126	24.200001	1.38E-03	0.20			1.38E-04	0.00			0.20
3	30	15	2127	21.6	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	6	2142	21.799999	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	7	2143	20.200001	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	8	2144	20.1	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	9	2145	20.5	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	10	2146	21	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	13	2149	20.1	1.38E-03	0.20			1.38E-04	0.00			0.20
3	31	14	2150	22.4	1.38E-03	0.20			1.38E-04	0.00			0.20
4	27	14	2798	20.200001	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
4	27	15	2799	20.5	1.38E-03	0.20			1.38E-04	0.00			0.20
5	13	19	3187	21.6	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
5	14	20	3212	20.200001	1.38E-03	0.20	2.12E-04	0.03	1.38E-04	0.00	4.59E-06	0.00	0.23
Total													5.15

Table A.12 - Polygon 5 - CCHD Station pl

Stabilized soil, spike-corrected emission factors

PL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 5	vacant land area	8,288	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		6961.92		6961.92		1326.08		1326.08	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	21	477	21.299999	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
1	23	18	546	20	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
1	23	19	547	23.4	1.38E-03	9.61			1.38E-04	0.18			9.79
1	23	20	548	21.9	1.38E-03	9.61			1.38E-04	0.18			9.79
1	23	21	549	22.1	1.38E-03	9.61			1.38E-04	0.18			9.79
1	23	22	550	21.5	1.38E-03	9.61			1.38E-04	0.18			9.79
1	23	23	551	20.6	1.38E-03	9.61			1.38E-04	0.18			9.79
1	25	15	591	21.6	1.38E-03	9.61			1.38E-04	0.18			9.79
2	9	7	943	20.1	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
2	9	8	944	22.1	1.38E-03	9.61			1.38E-04	0.18			9.79
2	9	9	945	22.9	1.38E-03	9.61			1.38E-04	0.18			9.79
2	9	10	946	21.700001	1.38E-03	9.61			1.38E-04	0.18			9.79
2	9	24	960	23.6	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	1	961	21.4	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	2	962	21.6	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	8	968	20.9	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	9	969	22.9	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	10	970	22.799999	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	11	971	22.5	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	12	972	24	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	13	973	22.4	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	14	974	23.6	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	15	975	24.1	1.38E-03	9.61			1.38E-04	0.18			9.79
2	10	16	976	20.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
2	21	19	1243	20.299999	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
2	21	20	1244	21.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
2	21	21	1245	20.1	1.38E-03	9.61			1.38E-04	0.18			9.79
2	25	12	1332	21.9	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
2	25	13	1333	22.4	1.38E-03	9.61			1.38E-04	0.18			9.79
2	25	14	1334	20.700001	1.38E-03	9.61			1.38E-04	0.18			9.79
3	3	19	1483	20	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
3	9	14	1622	22.1	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
3	20	13	1885	20.6	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
3	20	14	1886	22	1.38E-03	9.61			1.38E-04	0.18			9.79
3	20	15	1887	22.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
3	30	11	2123	20.200001	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
3	30	13	2125	22.299999	1.38E-03	9.61			1.38E-04	0.18			9.79

3	30	14	2126	20.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
3	31	12	2148	21.200001	1.38E-03	9.61			1.38E-04	0.18			9.79
3	31	13	2149	21.700001	1.38E-03	9.61			1.38E-04	0.18			9.79
3	31	15	2151	20.1	1.38E-03	9.61			1.38E-04	0.18			9.79
3	31	17	2153	22.4	1.38E-03	9.61			1.38E-04	0.18			9.79
4	5	13	2269	21.299999	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
4	5	14	2270	23.6	1.38E-03	9.61			1.38E-04	0.18			9.79
4	5	15	2271	23.4	1.38E-03	9.61			1.38E-04	0.18			9.79
4	5	16	2272	22.700001	1.38E-03	9.61			1.38E-04	0.18			9.79
4	5	17	2273	21.5	1.38E-03	9.61			1.38E-04	0.18			9.79
4	5	18	2274	20.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
4	6	15	2295	20	1.38E-03	9.61			1.38E-04	0.18			9.79
4	8	24	2352	20.299999	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
4	9	1	2353	20.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
4	9	8	2360	21.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
4	9	9	2361	21.799999	1.38E-03	9.61			1.38E-04	0.18			9.79
4	9	10	2362	21	1.38E-03	9.61			1.38E-04	0.18			9.79
5	3	1	2929	20.799999	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
5	14	19	3211	20.700001	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
7	6	20	4484	21.299999	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
7	7	1	4489	20.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
7	7	5	4493	20.5	1.38E-03	9.61			1.38E-04	0.18			9.79
7	27	14	4982	28.6	2.57E-03	17.89	4.90E-04	3.41	1.09E-04	0.14	4.59E-06	0.01	21.45
7	27	15	4983	28.200001	2.57E-03	17.89			1.09E-04	0.14			18.04
7	27	16	4984	20.6	1.38E-03	9.61			1.38E-04	0.18			9.79
7	28	17	5009	20	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
7	28	18	5010	20.4	1.38E-03	9.61			1.38E-04	0.18			9.79
7	28	19	5011	20.4	1.38E-03	9.61			1.38E-04	0.18			9.79
10	6	20	6692	20.5	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
10	16	10	6922	20.700001	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
10	16	11	6923	21.5	1.38E-03	9.61			1.38E-04	0.18			9.79
10	16	13	6925	21.299999	1.38E-03	9.61			1.38E-04	0.18			9.79
10	16	14	6926	20.200001	1.38E-03	9.61			1.38E-04	0.18			9.79
10	16	18	6930	20.1	1.38E-03	9.61			1.38E-04	0.18			9.79
10	16	19	6931	21.200001	1.38E-03	9.61			1.38E-04	0.18			9.79
11	21	18	7794	22	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
12	1	14	8030	21.4	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
12	3	7	8071	20.200001	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
12	3	12	8076	22.4	1.38E-03	9.61			1.38E-04	0.18			9.79
12	3	13	8077	20.9	1.38E-03	9.61			1.38E-04	0.18			9.79
12	7	20	8180	21.700001	1.38E-03	9.61	2.12E-04	1.48	1.38E-04	0.18	4.59E-06	0.01	11.27
12	7	23	8183	21	1.38E-03	9.61			1.38E-04	0.18			9.79
Total													824.48

Table A.13 - Polygon 12 - CCHD Station pm

Stabilized soil, spike-corrected emission factors

PM PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 12	vacant land area	30662	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		25756.08		25756.08		4905.92		4905.92	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	8	6	174	20.299999	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
1	21	11	491	23.1	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
1	21	12	492	24.200001	1.38E-03	35.54			1.38E-04	0.68			36.22
1	21	13	493	22.299999	1.38E-03	35.54			1.38E-04	0.68			36.22
1	21	14	494	22.299999	1.38E-03	35.54			1.38E-04	0.68			36.22
1	21	15	495	20	1.38E-03	35.54			1.38E-04	0.68			36.22
2	9	22	958	20.299999	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
2	25	10	1330	22.9	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
2	25	11	1331	26	2.57E-03	66.19			1.09E-04	0.53			66.73
2	25	12	1332	29.4	2.57E-03	66.19			1.09E-04	0.53			66.73
2	25	13	1333	22.1	1.38E-03	35.54			1.38E-04	0.68			36.22
3	3	22	1486	23.5	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
3	9	14	1622	21.299999	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
3	20	14	1886	20.1	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
3	20	15	1887	22.4	1.38E-03	35.54			1.38E-04	0.68			36.22
3	20	16	1888	21.1	1.38E-03	35.54			1.38E-04	0.68			36.22
3	30	12	2124	20.6	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
3	31	10	2146	20	1.38E-03	35.54			1.38E-04	0.68			36.22
3	31	13	2149	20.9	1.38E-03	35.54			1.38E-04	0.68			36.22
3	31	14	2150	23.6	1.38E-03	35.54			1.38E-04	0.68			36.22
4	8	23	2351	21.1	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
4	28	12	2820	20.9	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
5	3	14	2942	20.200001	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
5	14	19	3211	22.1	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
5	26	20	3500	21.5	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
12	7	20	8180	22.200001	1.38E-03	35.54	2.12E-04	5.46	1.38E-04	0.68	4.59E-06	0.02	41.70
Total													1079.50

Table A.14 - Polygon 10 - CCHD Station pt

Stabilized soil, spike-corrected emission factors

PT PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 10	vacant land area	6763.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		5681.34		5681.34		1082.16		1082.16	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
2	9	24	960	21.1	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
2	10	2	962	20.700001	1.38E-03	7.84			1.38E-04	0.15			7.99
2	25	12	1332	23	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
2	25	13	1333	23.299999	1.38E-03	7.84			1.38E-04	0.15			7.99
2	25	14	1334	23.299999	1.38E-03	7.84			1.38E-04	0.15			7.99
3	3	19	1483	20.200001	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
3	9	13	1621	20	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
3	9	14	1622	24.200001	1.38E-03	7.84			1.38E-04	0.15			7.99
3	9	15	1623	22.6	1.38E-03	7.84			1.38E-04	0.15			7.99
3	30	11	2123	22	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
3	30	12	2124	22.799999	1.38E-03	7.84			1.38E-04	0.15			7.99
3	30	13	2125	23.799999	1.38E-03	7.84			1.38E-04	0.15			7.99
3	30	15	2127	21.1	1.38E-03	7.84			1.38E-04	0.15			7.99
3	31	9	2145	20.799999	1.38E-03	7.84			1.38E-04	0.15			7.99
3	31	11	2147	20.799999	1.38E-03	7.84			1.38E-04	0.15			7.99
3	31	12	2148	22.799999	1.38E-03	7.84			1.38E-04	0.15			7.99
3	31	13	2149	25.200001	2.57E-03	14.60			1.09E-04	0.12			14.72
3	31	14	2150	23.4	1.38E-03	7.84			1.38E-04	0.15			7.99
3	31	15	2151	24.200001	1.38E-03	7.84			1.38E-04	0.15			7.99
3	31	16	2152	20.1	1.38E-03	7.84			1.38E-04	0.15			7.99
4	9	1	2353	20	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
4	9	2	2354	20.700001	1.38E-03	7.84			1.38E-04	0.15			7.99
5	13	21	3189	21.799999	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
5	14	19	3211	20.9	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
7	27	14	4982	23.6	1.38E-03	7.84	2.12E-04	1.20	1.38E-04	0.15	4.59E-06	0.00	9.20
7	27	15	4983	23	1.38E-03	7.84			1.38E-04	0.15			7.99
Total													225.34

6	21	13	4117	21.1	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
6	25	15	4215	20.1	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
6	25	16	4216	21.1	1.38E-03	14.06			1.38E-04	0.27			14.32
6	25	20	4220	21.9	1.38E-03	14.06			1.38E-04	0.27			14.32
7	3	14	4406	20	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
7	15	21	4701	24	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
7	27	15	4983	20.799999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
8	30	14	5798	20	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
10	16	11	6923	20.200001	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
10	29	4	7228	21.299999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
11	8	8	7472	20.4	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
11	8	9	7473	23.4	1.38E-03	14.06			1.38E-04	0.27			14.32
11	8	10	7474	21.799999	1.38E-03	14.06			1.38E-04	0.27			14.32
11	8	12	7476	21.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
11	8	14	7478	22.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
11	17	5	7685	22.4	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
11	17	6	7686	28.5	2.57E-03	26.18			1.09E-04	0.21			26.39
11	17	7	7687	25.1	2.57E-03	26.18			1.09E-04	0.21			26.39
11	17	8	7688	29.4	2.57E-03	26.18			1.09E-04	0.21			26.39
11	17	9	7689	30.1	3.16E-03	32.18			4.83E-04	0.94			33.12
11	17	10	7690	31.799999	3.16E-03	32.18			4.83E-04	0.94			33.12
11	17	11	7691	29.5	2.57E-03	26.18			1.09E-04	0.21			26.39
11	17	12	7692	23.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
11	17	13	7693	22	1.38E-03	14.06			1.38E-04	0.27			14.32
12	1	6	8022	21.799999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
12	2	23	8063	21.1	1.38E-03	14.06			1.38E-04	0.27			14.32
12	2	24	8064	25.9	2.57E-03	26.18			1.09E-04	0.21			26.39
12	3	1	8065	25.200001	2.57E-03	26.18			1.09E-04	0.21			26.39
12	3	9	8073	22.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
12	3	13	8077	22	1.38E-03	14.06			1.38E-04	0.27			14.32
12	3	14	8078	22.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
12	3	15	8079	20.6	1.38E-03	14.06			1.38E-04	0.27			14.32
12	7	20	8180	27.4	2.57E-03	26.18	4.90E-04	4.99	1.09E-04	0.21		0.00	31.38
12	7	21	8181	26.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
12	7	22	8182	21.9	1.38E-03	14.06			1.38E-04	0.27			14.32
12	8	1	8185	31.299999	3.16E-03	32.18			1.09E-04	0.21			32.40
12	8	2	8186	22.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
Total													2924.64

3	31	21	2157	21	1.38E-03	14.06			1.38E-04	0.27			14.32
4	3	14	2222	20.4	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
4	3	15	2223	21.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
4	3	17	2225	22.6	1.38E-03	14.06			1.38E-04	0.27			14.32
4	8	15	2343	23.4	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
4	8	16	2344	21.5	1.38E-03	14.06			1.38E-04	0.27			14.32
4	8	21	2349	25.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
4	8	22	2350	28.700001	2.57E-03	26.18			1.09E-04	0.21			26.39
4	8	23	2351	24.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
4	9	2	2354	23.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
4	9	12	2364	21.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
4	14	5	2477	22.1	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
4	26	23	2783	23.5	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
4	26	24	2784	34.5	3.16E-03	32.18			4.83E-04	0.94			33.12
4	27	1	2785	21.799999	1.38E-03	14.06			1.38E-04	0.27			14.32
4	27	18	2802	22.1	1.38E-03	14.06			1.38E-04	0.27			14.32
4	27	19	2803	25.299999	2.57E-03	26.18			1.09E-04	0.21			26.39
4	27	20	2804	23	1.38E-03	14.06			1.38E-04	0.27			14.32
4	27	21	2805	20.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
4	28	13	2821	20	1.38E-03	14.06			1.38E-04	0.27			14.32
5	2	17	2921	21.799999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
5	3	14	2942	22.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
5	3	15	2943	21.9	1.38E-03	14.06			1.38E-04	0.27			14.32
5	3	16	2944	22.1	1.38E-03	14.06			1.38E-04	0.27			14.32
5	12	22	3166	26	2.57E-03	26.18	4.90E-04	4.99	1.09E-04	0.21		0.00	31.38
5	12	23	3167	23.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
5	12	24	3168	23.4	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	2	3170	20.4	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	3	3171	22.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	15	3183	20	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	16	3184	21.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	17	3185	23.1	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	21	3189	23.1	1.38E-03	14.06			1.38E-04	0.27			14.32
5	13	22	3190	21.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
5	14	16	3208	20.299999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
5	14	17	3209	21.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
5	14	18	3210	25.5	2.57E-03	26.18			1.09E-04	0.21			26.39
5	14	19	3211	26.9	2.57E-03	26.18			1.09E-04	0.21			26.39
5	14	20	3212	20.4	1.38E-03	14.06			1.38E-04	0.27			14.32
5	26	20	3500	22.6	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
5	26	21	3501	23.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
5	26	22	3502	20.4	1.38E-03	14.06			1.38E-04	0.27			14.32
6	2	21	3669	22.200001	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
6	16	14	3998	20.9	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49

2	25	10	1330	24.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
2	25	12	1332	27	2.57E-03	26.18			1.09E-04	0.21			26.39
3	3	12	1476	21.4	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
3	3	13	1477	22	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	14	1478	23	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	15	1479	21.5	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	16	1480	23.5	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	17	1481	23.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	18	1482	25.299999	2.57E-03	26.18			1.09E-04	0.21			26.39
3	3	19	1483	26.200001	2.57E-03	26.18			1.09E-04	0.21			26.39
3	3	20	1484	21.6	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	23	1487	22.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	3	24	1488	22.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	8	23	1607	20.299999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
3	8	24	1608	20.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	1	1609	22.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	2	1610	24	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	3	1611	22.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	4	1612	21.9	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	14	1622	21.4	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	15	1623	23.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	9	16	1624	20.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	15	16	1768	20.1	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
3	20	13	1885	21.200001	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
3	20	14	1886	23.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	20	15	1887	23.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	20	16	1888	21.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	20	17	1889	20.9	1.38E-03	14.06			1.38E-04	0.27			14.32
3	20	18	1890	21.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	20	19	1891	22	1.38E-03	14.06			1.38E-04	0.27			14.32
3	20	20	1892	22.5	1.38E-03	14.06			1.38E-04	0.27			14.32
3	21	16	1912	20.9	1.38E-03	14.06			1.38E-04	0.27			14.32
3	23	5	1949	20.9	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
3	23	6	1950	22.799999	1.38E-03	14.06			1.38E-04	0.27			14.32
3	23	8	1952	20.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	30	9	2121	22.299999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
3	30	10	2122	24.9	1.38E-03	14.06			1.38E-04	0.27			14.32
3	30	11	2123	27.200001	2.57E-03	26.18			1.09E-04	0.21			26.39
3	30	12	2124	26.700001	2.57E-03	26.18			1.09E-04	0.21			26.39
3	30	13	2125	21.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
3	31	12	2148	25.799999	2.57E-03	26.18			1.09E-04	0.21			26.39
3	31	13	2149	29.4	2.57E-03	26.18			1.09E-04	0.21			26.39
3	31	14	2150	35.799999	2.99E-03	30.45			3.32E-04	0.64			31.10
3	31	15	2151	31.299999	3.16E-03	32.18			4.83E-04	0.94			33.12

Table A.15 - Polygon 18 - CCHD Station pv

Stabilized soil, spike-corrected emission factors

PV PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 18	vacant land area	12125	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		10185		10185		1940		1940	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	8	9	177	22.700001	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
1	8	10	178	20.9	1.38E-03	14.06			1.38E-04	0.27			14.32
1	8	14	182	21.4	1.38E-03	14.06			1.38E-04	0.27			14.32
1	8	15	183	21	1.38E-03	14.06			1.38E-04	0.27			14.32
1	20	4	460	21.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
1	20	9	465	22.1	1.38E-03	14.06			1.38E-04	0.27			14.32
1	20	10	466	22.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
1	20	17	473	20.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
1	20	18	474	24.6	2.57E-03	26.18			1.38E-04	0.27			26.44
1	20	19	475	28.1	2.57E-03	26.18			1.09E-04	0.21			26.39
1	20	20	476	30	3.16E-03	32.18			1.09E-04	0.21			32.40
1	20	21	477	26.299999	2.57E-03	26.18			1.09E-04	0.21			26.39
1	20	22	478	31.5	3.16E-03	32.18			4.83E-04	0.94			33.12
1	20	23	479	32.099998	3.16E-03	32.18			4.83E-04	0.94			33.12
1	20	24	480	24.5	1.38E-03	14.06			1.38E-04	0.27			14.32
1	21	1	481	29.5	2.57E-03	26.18			1.09E-04	0.21			26.39
1	21	2	482	32.900002	3.16E-03	32.18			4.83E-04	0.94			33.12
1	21	3	483	27.6	2.57E-03	26.18			1.09E-04	0.21			26.39
1	21	15	495	20.6	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
2	9	13	949	20.5	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
2	9	14	950	20.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
2	9	15	951	24.700001	1.38E-03	14.06			1.38E-04	0.27			14.32
2	9	16	952	23.6	1.38E-03	14.06			1.38E-04	0.27			14.32
2	9	21	957	20.299999	1.38E-03	14.06			1.38E-04	0.27			14.32
2	9	22	958	26.4	2.57E-03	26.18			1.38E-04	0.27			26.44
2	9	23	959	22.9	1.38E-03	14.06			1.38E-04	0.27			14.32
2	10	5	965	21.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
2	10	11	971	21.5	1.38E-03	14.06			1.38E-04	0.27			14.32
2	10	12	972	36	2.99E-03	30.45			3.32E-04	0.64			31.10
2	10	13	973	22.799999	1.38E-03	14.06			1.38E-04	0.27			14.32
2	21	11	1235	20.299999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49
2	21	12	1236	24	1.38E-03	14.06			1.38E-04	0.27			14.32
2	21	13	1237	23.200001	1.38E-03	14.06			1.38E-04	0.27			14.32
2	21	14	1238	25	2.57E-03	26.18			1.09E-04	0.21			26.39
2	21	15	1239	23.9	1.38E-03	14.06			1.38E-04	0.27			14.32
2	21	16	1240	25.6	2.57E-03	26.18			1.09E-04	0.21			26.39
2	25	9	1329	22.299999	1.38E-03	14.06	2.12E-04	2.16	1.38E-04	0.27	4.59E-06	0.01	16.49

Table A.16 - Polygon 16 - CCHD Station sa

Stabilized soil, spike-corrected emission factors

SA PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 16	vacant land area	207	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		173.88		173.88		33.12		33.12	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	12	492	22.799999	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
1	21	13	493	21.200001	1.38E-03	0.24			1.38E-04	0.00			0.24
1	21	14	494	21.6	1.38E-03	0.24			1.38E-04	0.00			0.24
1	21	15	495	22.200001	1.38E-03	0.24			1.38E-04	0.00			0.24
1	21	16	496	20.299999	1.38E-03	0.24			1.38E-04	0.00			0.24
2	10	9	969	21	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
2	10	10	970	22.1	1.38E-03	0.24			1.38E-04	0.00			0.24
2	10	11	971	22.1	1.38E-03	0.24			1.38E-04	0.00			0.24
2	10	12	972	21.4	1.38E-03	0.24			1.38E-04	0.00			0.24
2	10	13	973	21.799999	1.38E-03	0.24			1.38E-04	0.00			0.24
2	10	14	974	20.9	1.38E-03	0.24			1.38E-04	0.00			0.24
2	10	15	975	20.700001	1.38E-03	0.24			1.38E-04	0.00			0.24
2	25	12	1332	20.299999	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
2	25	13	1333	21.700001	1.38E-03	0.24			1.38E-04	0.00			0.24
2	25	14	1334	21.5	1.38E-03	0.24			1.38E-04	0.00			0.24
2	25	15	1335	22.299999	1.38E-03	0.24			1.38E-04	0.00			0.24
3	31	13	2149	20.700001	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
3	31	14	2150	23.6	1.38E-03	0.24			1.38E-04	0.00			0.24
3	31	15	2151	23.200001	1.38E-03	0.24			1.38E-04	0.00			0.24
3	31	16	2152	29.6	2.57E-03	0.45			1.09E-04	0.00			0.45
3	31	17	2153	26.200001	2.57E-03	0.45			1.09E-04	0.00			0.45
5	26	21	3501	20	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
5	26	22	3502	21.5	1.38E-03	0.24			1.38E-04	0.00			0.24
7	14	20	4676	20.6	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
9	18	2	6242	22	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
12	1	14	8030	20.9	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
12	1	15	8031	20.700001	1.38E-03	0.24			1.38E-04	0.00			0.24
12	3	1	8065	21.6	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
12	3	3	8067	20.1	1.38E-03	0.24			1.38E-04	0.00			0.24
12	3	8	8072	21.299999	1.38E-03	0.24			1.38E-04	0.00			0.24
12	3	9	8073	21.6	1.38E-03	0.24			1.38E-04	0.00			0.24
12	3	10	8074	21.200001	1.38E-03	0.24			1.38E-04	0.00			0.24
12	7	20	8180	24.799999	1.38E-03	0.24	2.12E-04	0.04	1.38E-04	0.00	4.59E-06	0.00	0.28
12	7	21	8181	20	1.38E-03	0.24			1.38E-04	0.00			0.24
12	7	22	8182	22.4	1.38E-03	0.24			1.38E-04	0.00			0.24
Total													9.34

Table A.17 - Polygon 3 - CCHD Station sl

Stabilized soil, spike-corrected emission factors

SL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 3	vacant land area	1315	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		1104.6		1104.6		210.4		210.4	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
3	31	13	2149	20.799999	1.38E-03	1.52	2.12E-04	0.23	1.38E-04	0.03	4.59E-06	0.00	1.79
3	31	16	2152	23.700001	1.38E-03	1.52			1.38E-04	0.03			1.55
3	31	17	2153	21.6	1.38E-03	1.52			1.38E-04	0.03			1.55
6	3	5	3677	21.1	1.38E-03	1.52	2.12E-04	0.23	1.38E-04	0.03	4.59E-06	0.00	1.79
12	7	20	8180	20.1	1.38E-03	1.52	2.12E-04	0.23	1.38E-04	0.03	4.59E-06	0.00	1.79
Total													8.47

Table A.18 - Polygon 13 - CCHD Station wj

Stabilized soil, spike-corrected emission factors

WJ PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 13	vacant land area	1522.5	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		1278.9		1278.9		243.6		243.6	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	12	492	20.799999	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
2	9	16	952	20.799999	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
2	21	14	1238	20.200001	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
2	25	11	1331	20.9	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
2	25	12	1332	29.700001	2.57E-03	3.29			1.09E-04	0.03			3.31
2	25	13	1333	25.799999	2.57E-03	3.29			1.09E-04	0.03			3.31
3	9	13	1621	23.799999	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
3	9	14	1622	23.200001	1.38E-03	1.76			1.38E-04	0.03			1.80
3	20	15	1887	20.700001	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
3	31	10	2146	21.5	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
3	31	14	2150	21.5	1.38E-03	1.76			1.38E-04	0.03			1.80
3	31	16	2152	21.5	1.38E-03	1.76			1.38E-04	0.03			1.80
3	31	17	2153	22	1.38E-03	1.76			1.38E-04	0.03			1.80
10	16	10	6922	20.299999	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
12	3	1	8065	20.299999	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
12	7	20	8180	21.200001	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
12	7	21	8181	21.5	1.38E-03	1.76			1.38E-04	0.03			1.80
12	7	22	8182	22	1.38E-03	1.76			1.38E-04	0.03			1.80
12	8	1	8185	20	1.38E-03	1.76			1.38E-04	0.03			1.80
12	21	13	8509	20.9	1.38E-03	1.76	2.12E-04	0.27	1.38E-04	0.03	1.09E-04	0.03	2.10
Total													42.27

Table A.19 - Polygon 2 - CCHD Station ww

Stabilized soil, spike-corrected emission factors

WW PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 2	vacant land area	1574	acres										
Excel 5.0	stable fraction	0.84		fraction		0.84		0.84		0.16		0.16	
	unstable fraction	0.16		Area (acres)		1322.16		1322.16		251.84		251.84	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind_(mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	1	481	20.4	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03		0.00	2.14
1	26	11	611	20.9	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
2	9	23	959	21.299999	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
2	25	15	1335	21.6	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
3	9	14	1622	21	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
3	20	14	1886	21	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
3	30	13	2125	21.1	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
3	30	14	2126	20.1	1.38E-03	1.82			1.38E-04	0.03			1.86
3	31	14	2150	21.1	1.38E-03	1.82			1.38E-04	0.03			1.86
3	31	15	2151	24.6	1.38E-03	1.82			1.38E-04	0.03			1.86
3	31	16	2152	20.9	1.38E-03	1.82			1.38E-04	0.03			1.86
3	31	17	2153	21.4	1.38E-03	1.82			1.38E-04	0.03			1.86
4	5	13	2269	21.299999	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
4	5	14	2270	21.9	1.38E-03	1.82			1.38E-04	0.03			1.86
4	5	17	2273	20.799999	1.38E-03	1.82			1.38E-04	0.03			1.86
4	5	18	2274	20.799999	1.38E-03	1.82			1.38E-04	0.03			1.86
4	8	23	2351	21.6	1.38E-03	1.82	2.12E-04	0.28	1.38E-04	0.03	4.59E-06	0.00	2.14
4	8	24	2352	21	1.38E-03	1.82			1.38E-04	0.03			1.86
Total													36.00

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
1	123	18	655	29-Nov-99
2	123	19	681	29-Nov-99
3	123	20	655	29-Nov-99
4	123	21	657	29-Nov-99
5	123	22	188	29-Nov-99
6	123	23	1	29-Nov-99
7	123	26	82	29-Nov-99
8	123	27	572	29-Nov-99
9	123	28	476	29-Nov-99
10	123	29	413	29-Nov-99
11	123	30	620	29-Nov-99
12	123	31	438	29-Nov-99
13	123	32	435	29-Nov-99
14	123	33	575	29-Nov-99
15	123	34	459	29-Nov-99
16	123	35	296	29-Nov-99
17	124	6	315	29-Nov-99
18	124	7	645	29-Nov-99
19	124	13	626	29-Nov-99
20	124	14	627	29-Nov-99
21	124	15	639	29-Nov-99
22	124	16	633	29-Nov-99
23	124	17	646	29-Nov-99
24	124	18	647	29-Nov-99
25	124	19	632	29-Nov-99
26	124	20	646	29-Nov-99
27	124	21	647	29-Nov-99
28	124	22	646	29-Nov-99
29	124	23	612	29-Nov-99
30	124	24	645	29-Nov-99
31	124	25	560	29-Nov-99
32	124	26	558	29-Nov-99
33	124	27	449	29-Nov-99
34	124	28	131	29-Nov-99
35	124	29	471	29-Nov-99
36	124	30	608	29-Nov-99
37	124	31	288	29-Nov-99
38	124	32	239	29-Nov-99
39	124	33	330	29-Nov-99
40	124	34	181	29-Nov-99
41	124	35	485	29-Nov-99
42	124	36	239	29-Nov-99
43	125	1	286	29-Nov-99
44	125	2	613	29-Nov-99
45	125	3	596	29-Nov-99
46	125	4	308	29-Nov-99
47	125	5	496	29-Nov-99
48	125	6	603	29-Nov-99
49	125	7	610	29-Nov-99
50	125	8	301	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
51	125	9	516	29-Nov-99
52	125	10	598	29-Nov-99
53	125	11	518	29-Nov-99
54	125	12	527	29-Nov-99
55	125	13	504	29-Nov-99
56	125	14	341	29-Nov-99
57	125	15	259	29-Nov-99
58	125	16	237	29-Nov-99
59	125	17	505	29-Nov-99
60	125	18	623	29-Nov-99
61	125	19	593	29-Nov-99
62	125	20	565	29-Nov-99
63	125	21	321	29-Nov-99
64	125	22	220	29-Nov-99
65	125	23	278	29-Nov-99
66	125	24	448	29-Nov-99
67	125	25	258	29-Nov-99
68	125	26	282	29-Nov-99
69	125	27	157	29-Nov-99
70	125	28	398	29-Nov-99
71	125	29	297	29-Nov-99
72	125	30	412	29-Nov-99
73	125	31	518	29-Nov-99
74	125	32	286	29-Nov-99
75	125	33	93	29-Nov-99
76	125	34	101	29-Nov-99
77	125	35	108	29-Nov-99
78	125	36	39	29-Nov-99
79	126	1	533	29-Nov-99
80	126	2	525	29-Nov-99
81	126	3	573	29-Nov-99
82	126	10	289	29-Nov-99
83	126	12	667	29-Nov-99
84	126	13	661	29-Nov-99
85	126	24	649	29-Nov-99
86	126	25	564	29-Nov-99
87	126	23	529	29-Nov-99
88	137	1	673	29-Nov-99
89	137	12	529	29-Nov-99
90	137	13	51	29-Nov-99
91	137	14	57	29-Nov-99
92	137	15	335	29-Nov-99
93	137	20	477	29-Nov-99
94	137	21	632	29-Nov-99
95	137	22	654	29-Nov-99
96	137	23	435	29-Nov-99
97	137	24	18	29-Nov-99
98	137	25	36	29-Nov-99
99	137	26	490	29-Nov-99
100	137	27	653	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
101	137	28	629	29-Nov-99
102	137	29	638	29-Nov-99
103	137	33	684	29-Nov-99
104	137	34	682	29-Nov-99
105	137	35	590	29-Nov-99
106	137	36	162	29-Nov-99
107	138	1	100	29-Nov-99
108	138	2	175	29-Nov-99
109	138	3	141	29-Nov-99
110	138	4	187	29-Nov-99
111	138	5	506	29-Nov-99
112	138	6	405	29-Nov-99
113	138	7	260	29-Nov-99
114	138	8	184	29-Nov-99
115	138	9	147	29-Nov-99
116	138	10	160	29-Nov-99
117	138	11	23	29-Nov-99
118	138	12	71	29-Nov-99
119	138	13	116	29-Nov-99
120	138	14	52	29-Nov-99
121	138	15	171	29-Nov-99
122	138	16	63	29-Nov-99
123	138	17	3	29-Nov-99
124	138	18	5	29-Nov-99
125	138	19	96	29-Nov-99
126	138	20	46	29-Nov-99
127	138	21	47	29-Nov-99
128	138	22	87	29-Nov-99
129	138	23	42	29-Nov-99
130	138	24	16	29-Nov-99
131	138	26	13	29-Nov-99
132	138	27	92	29-Nov-99
133	138	28	216	29-Nov-99
134	138	29	175	29-Nov-99
135	138	30	68	29-Nov-99
136	138	31	169	29-Nov-99
137	138	32	197	29-Nov-99
138	138	33	11	29-Nov-99
139	138	35	9	29-Nov-99
140	138	36	8	29-Nov-99
141	139	1	325	29-Nov-99
142	139	2	287	29-Nov-99
143	139	3	206	29-Nov-99
144	139	4	529	29-Nov-99
145	139	5	240	29-Nov-99
146	139	6	107	29-Nov-99
147	139	7	275	29-Nov-99
148	139	8	206	29-Nov-99
149	139	9	199	29-Nov-99
150	139	10	397	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
151	139	11	170	29-Nov-99
152	139	12	327	29-Nov-99
153	139	13	78	29-Nov-99
154	139	14	88	29-Nov-99
155	139	15	154	29-Nov-99
156	139	16	212	29-Nov-99
157	139	17	520	29-Nov-99
158	139	18	369	29-Nov-99
159	139	19	109	29-Nov-99
160	139	20	198	29-Nov-99
161	139	21	149	29-Nov-99
162	139	22	67	29-Nov-99
163	139	23	80	29-Nov-99
164	139	24	10	29-Nov-99
165	139	25	71	29-Nov-99
166	139	26	23	29-Nov-99
167	139	27	63	29-Nov-99
168	139	28	59	29-Nov-99
169	139	29	55	29-Nov-99
170	139	30	7	29-Nov-99
171	139	31	8	29-Nov-99
172	139	32	22	29-Nov-99
173	139	33	191	29-Nov-99
174	139	34	58	29-Nov-99
175	139	35	25	29-Nov-99
176	139	36	50	29-Nov-99
177	140	2	335	29-Nov-99
178	140	4	119	29-Nov-99
179	140	5	297	29-Nov-99
180	140	6	219	29-Nov-99
181	140	7	168	29-Nov-99
182	140	8	223	29-Nov-99
183	140	10	315	29-Nov-99
184	140	11	330	29-Nov-99
185	140	14	350	29-Nov-99
186	140	15	284	29-Nov-99
187	140	16	343	29-Nov-99
188	140	17	322	29-Nov-99
189	140	18	214	29-Nov-99
190	140	19	123	29-Nov-99
191	140	20	193	29-Nov-99
192	140	21	110	29-Nov-99
193	140	22	87	29-Nov-99
194	140	23	29	29-Nov-99
195	140	26	95	29-Nov-99
196	140	27	179	29-Nov-99
197	140	28	48	29-Nov-99
198	140	29	81	29-Nov-99
199	140	30	60	29-Nov-99
200	140	31	56	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
201	140	32	22	29-Nov-99
202	140	33	44	29-Nov-99
203	140	34	178	29-Nov-99
204	140	35	49	29-Nov-99
205	160	26	563	29-Nov-99
206	160	27	652	29-Nov-99
207	160	31	631	29-Nov-99
208	160	32	626	29-Nov-99
209	160	33	607	29-Nov-99
210	160	34	226	29-Nov-99
211	160	35	3	29-Nov-99
212	161	2	258	29-Nov-99
213	161	3	135	29-Nov-99
214	161	4	29	29-Nov-99
215	161	5	44	29-Nov-99
216	161	6	6	29-Nov-99
217	161	7	67	29-Nov-99
218	161	8	68	29-Nov-99
219	161	9	45	29-Nov-99
220	161	10	169	29-Nov-99
221	161	11	28	29-Nov-99
222	161	14	321	29-Nov-99
223	161	15	290	29-Nov-99
224	161	16	108	29-Nov-99
225	161	17	34	29-Nov-99
226	161	18	26	29-Nov-99
227	161	19	28	29-Nov-99
228	161	20	11	29-Nov-99
229	161	21	130	29-Nov-99
230	161	22	4	29-Nov-99
231	161	23	227	29-Nov-99
232	161	25	493	29-Nov-99
233	161	26	440	29-Nov-99
234	161	27	287	29-Nov-99
235	161	28	141	29-Nov-99
236	161	29	51	29-Nov-99
237	161	30	36	29-Nov-99
238	161	31	190	29-Nov-99
239	161	32	107	29-Nov-99
240	161	33	116	29-Nov-99
241	161	34	495	29-Nov-99
242	161	35	208	29-Nov-99
243	161	36	398	29-Nov-99
244	162	1	37	29-Nov-99
245	162	2	11	29-Nov-99
246	162	3	5	29-Nov-99
247	162	4	13	29-Nov-99
248	162	5	5	29-Nov-99
249	162	6	10	29-Nov-99
250	162	7	11	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
251	162	8	8	29-Nov-99
252	162	9	76	29-Nov-99
253	162	10	34	29-Nov-99
254	162	11	15	29-Nov-99
255	162	12	16	29-Nov-99
256	162	13	74	29-Nov-99
257	162	14	8	29-Nov-99
258	162	15	86	29-Nov-99
259	162	16	83	29-Nov-99
260	162	17	68	29-Nov-99
261	162	18	2	29-Nov-99
262	162	19	97	29-Nov-99
263	162	20	63	29-Nov-99
264	162	21	65	29-Nov-99
265	162	22	76	29-Nov-99
266	162	23	5	29-Nov-99
267	162	24	39	29-Nov-99
268	162	25	26	29-Nov-99
269	162	26	47	29-Nov-99
270	162	27	53	29-Nov-99
271	162	28	386	29-Nov-99
272	162	29	185	29-Nov-99
273	162	30	133	29-Nov-99
274	162	31	452	29-Nov-99
275	162	32	298	29-Nov-99
276	162	33	359	29-Nov-99
277	162	34	465	29-Nov-99
278	162	35	358	29-Nov-99
279	162	36	125	29-Nov-99
280	163	1	33	29-Nov-99
281	163	2	85	29-Nov-99
282	163	3	115	29-Nov-99
283	163	4	130	29-Nov-99
284	163	5	45	29-Nov-99
285	163	6	52	29-Nov-99
286	163	7	3	29-Nov-99
287	163	8	15	29-Nov-99
288	163	9	250	29-Nov-99
289	163	10	117	29-Nov-99
290	163	11	71	29-Nov-99
291	163	12	65	29-Nov-99
292	163	13	39	29-Nov-99
293	163	14	11	29-Nov-99
294	163	15	135	29-Nov-99
295	163	16	186	29-Nov-99
296	163	17	125	29-Nov-99
297	163	18	192	29-Nov-99
298	163	19	523	29-Nov-99
299	163	20	296	29-Nov-99
300	163	21	129	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
301	163	22	16	29-Nov-99
302	163	23	8	29-Nov-99
303	163	24	97	29-Nov-99
304	163	25	206	29-Nov-99
305	163	26	131	29-Nov-99
306	163	27	174	29-Nov-99
307	163	28	257	29-Nov-99
308	163	29	561	29-Nov-99
309	163	30	617	29-Nov-99
310	163	31	650	29-Nov-99
311	163	32	624	29-Nov-99
312	163	33	556	29-Nov-99
313	163	34	528	29-Nov-99
314	163	35	527	29-Nov-99
315	163	36	426	29-Nov-99
316	164	1	567	29-Nov-99
317	164	2	543	29-Nov-99
318	164	3	62	29-Nov-99
319	164	11	425	29-Nov-99
320	164	12	211	29-Nov-99
321	164	13	615	29-Nov-99
322	164	14	700	29-Nov-99
323	164	23	620	29-Nov-99
324	164	24	561	29-Nov-99
325	164	25	647	29-Nov-99
326	164	26	637	29-Nov-99
327	164	36	654	29-Nov-99
328	175	1	318	29-Nov-99
329	176	1	587	29-Nov-99
330	176	2	615	29-Nov-99
331	176	3	618	29-Nov-99
332	176	4	645	29-Nov-99
333	176	5	641	29-Nov-99
334	176	6	650	29-Nov-99
335	176	7	679	29-Nov-99
336	176	8	382	29-Nov-99
337	176	9	648	29-Nov-99
338	176	10	609	29-Nov-99
339	176	11	497	29-Nov-99
340	176	12	611	29-Nov-99
341	176	13	523	29-Nov-99
342	176	14	568	29-Nov-99
343	176	15	541	29-Nov-99
344	176	16	501	29-Nov-99
345	176	17	563	29-Nov-99
346	176	18	643	29-Nov-99
347	176	19	585	29-Nov-99
348	176	20	585	29-Nov-99
349	176	21	573	29-Nov-99
350	176	22	244	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
351	176	23	433	29-Nov-99
352	176	24	483	29-Nov-99
353	176	25	543	29-Nov-99
354	176	26	634	29-Nov-99
355	176	27	604	29-Nov-99
356	176	28	626	29-Nov-99
357	176	29	612	29-Nov-99
358	176	30	320	29-Nov-99
359	176	34	601	29-Nov-99
360	176	35	461	29-Nov-99
361	176	36	626	29-Nov-99
362	177	1	151	29-Nov-99
363	177	2	169	29-Nov-99
364	177	3	88	29-Nov-99
365	177	4	315	29-Nov-99
366	177	5	330	29-Nov-99
367	177	6	360	29-Nov-99
368	177	7	456	29-Nov-99
369	177	8	366	29-Nov-99
370	177	9	205	29-Nov-99
371	177	10	163	29-Nov-99
372	177	11	123	29-Nov-99
373	177	12	111	29-Nov-99
374	177	13	29	29-Nov-99
375	177	14	373	29-Nov-99
376	177	15	87	29-Nov-99
377	177	16	273	29-Nov-99
378	177	17	316	29-Nov-99
379	177	18	549	29-Nov-99
380	177	19	6	29-Nov-99
381	177	20	316	29-Nov-99
382	177	21	276	29-Nov-99
383	177	22	198	29-Nov-99
384	177	23	199	29-Nov-99
385	177	24	318	29-Nov-99
386	177	25	352	29-Nov-99
387	177	26	386	29-Nov-99
388	177	27	312	29-Nov-99
389	177	28	398	29-Nov-99
390	177	29	509	29-Nov-99
391	177	30	613	29-Nov-99
392	177	31	637	29-Nov-99
393	177	32	543	29-Nov-99
394	177	33	384	29-Nov-99
395	177	34	610	29-Nov-99
396	177	35	502	29-Nov-99
397	177	36	360	29-Nov-99
398	178	1	107	29-Nov-99
399	178	2	286	29-Nov-99
400	178	3	213	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
401	178	4	172	29-Nov-99
402	178	5	50	29-Nov-99
403	178	6	84	29-Nov-99
404	178	7	5	29-Nov-99
405	178	8	12	29-Nov-99
406	178	9	64	29-Nov-99
407	178	10	100	29-Nov-99
408	178	11	446	29-Nov-99
409	178	12	486	29-Nov-99
410	178	13	305	29-Nov-99
411	178	14	284	29-Nov-99
412	178	15	339	29-Nov-99
413	178	16	290	29-Nov-99
414	178	17	19	29-Nov-99
415	178	18	18	29-Nov-99
416	178	19	145	29-Nov-99
417	178	20	103	29-Nov-99
418	178	21	223	29-Nov-99
419	178	22	502	29-Nov-99
420	178	23	253	29-Nov-99
421	178	24	313	29-Nov-99
422	178	25	572	29-Nov-99
423	178	26	633	29-Nov-99
424	178	27	623	29-Nov-99
425	178	28	471	29-Nov-99
426	178	29	107	29-Nov-99
427	178	30	351	29-Nov-99
428	178	31	318	29-Nov-99
429	178	32	605	29-Nov-99
430	178	33	636	29-Nov-99
431	179	4	319	29-Nov-99
432	179	5	520	29-Nov-99
433	179	6	631	29-Nov-99
434	179	7	460	29-Nov-99
435	179	8	121	29-Nov-99
436	179	9	334	29-Nov-99
437	179	16	531	29-Nov-99
438	179	17	121	29-Nov-99
439	179	18	100	29-Nov-99
440	179	19	49	29-Nov-99
441	179	20	126	29-Nov-99
442	179	21	199	29-Nov-99
443	179	27	73	29-Nov-99
444	179	28	310	29-Nov-99
445	179	29	65	29-Nov-99
446	179	30	92	29-Nov-99
447	179	31	493	29-Nov-99
448	179	32	516	29-Nov-99
449	179	33	309	29-Nov-99
450	179	34	402	29-Nov-99

Table B-1

Clark County Assessor Data
Vacant parcels by Section 1/2 acre and greater

ID	Book	Section	Total Acres	Run date
451	189	3	252	29-Nov-99
452	190	5	605	29-Nov-99
453	190	6	262	29-Nov-99
454	190	7	290	29-Nov-99
455	190	8	595	29-Nov-99
456	190	17	287	29-Nov-99
457	190	18	634	29-Nov-99
458	190	19	333	29-Nov-99
459	190	20	35	29-Nov-99
460	191	1	303	29-Nov-99
461	191	2	179	29-Nov-99
462	191	3	459	29-Nov-99
463	191	4	555	29-Nov-99
464	191	5	537	29-Nov-99
465	191	6	633	29-Nov-99
466	191	8	510	29-Nov-99
467	191	9	546	29-Nov-99
468	191	10	588	29-Nov-99
469	191	11	608	29-Nov-99
470	191	12	275	29-Nov-99
471	191	13	648	29-Nov-99
472	191	14	651	29-Nov-99
473	191	15	634	29-Nov-99
474	191	16	631	29-Nov-99
475	191	17	530	29-Nov-99
476	191	20	593	29-Nov-99
477	191	21	644	29-Nov-99
478	191	22	621	29-Nov-99
479	191	23	629	29-Nov-99
480	191	24	675	29-Nov-99
Total			148,575	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates

Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
277	1	139	21	149	
296	1	139	22	67	
331	1	139	26	23	
309	1	139	27	63	
310	1	139	28	59	
349	1	139	33	191	
348	1	139	34	58	
347	1	139	35	25	635
247	2	140	13	0	
253	2	140	14	350	
256	2	140	15	284	
298	2	140	20	193	
279	2	140	21	110	
263	2	140	22	87	
261	2	140	23	29	
257	2	140	24	0	
299	2	140	25	0	
300	2	140	26	95	
301	2	140	27	179	
302	2	140	28	48	
303	2	140	29	81	
340	2	140	32	22	
337	2	140	33	44	
338	2	140	34	178	
339	2	140	35	49	
335	2	140	36	0	
381	2	161	1	0	
383	2	161	2	258	
382	2	161	3	135	
384	2	161	4	29	
385	2	161	5	44	
432	2	161	8	68	
431	2	161	9	45	
429	2	161	10	169	2,497
283	3	138	24	16	
316	3	138	25	0	
353	3	138	36	8	
224	3	139	7	275	
227	3	139	8	206	
235	3	139	17	520	
236	3	139	18	369	
271	3	139	19	109	
270	3	139	20	198	
276	3	139	21	149	
311	3	139	28	59	
312	3	139	29	55	
313	3	139	30	7	
352	3	139	31	8	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
351	3	139	32	22	
350	3	139	33	191	
356	3	139	34	58	
394	3	162	3	5	
395	3	162	4	13	
396	3	162	5	5	
397	3	162	6	10	
443	3	162	7	11	
440	3	162	8	8	
441	3	162	9	76	
442	3	162	10	34	
398	3	163	1	33	
444	3	163	12	65	2,510
5	4	123	1	0	
6	4	123	2	0	
2	4	123	3	0	
3	4	123	4	0	
4	4	123	5	0	
7	4	123	6	0	
32	4	123	7	0	
29	4	123	8	0	
27	4	123	9	0	
28	4	123	10	0	
31	4	123	11	0	
30	4	123	12	0	
56	4	123	13	0	
55	4	123	14	0	
53	4	123	15	0	
52	4	123	16	0	
54	4	123	17	0	
57	4	123	18	655	
83	4	123	19	681	
78	4	123	20	655	
79	4	123	21	657	
82	4	123	22	188	
80	4	123	23	1	
81	4	123	24	0	
108	4	123	25	0	
109	4	123	26	82	
107	4	123	27	572	
106	4	123	28	476	
110	4	123	29	413	
111	4	123	30	620	
138	4	123	31	438	
137	4	123	32	435	
134	4	123	33	575	
135	4	123	34	459	
136	4	123	35	296	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates

Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
133	4	123	36	0	
8	4	124	1	0	
9	4	124	2	0	
10	4	124	3	0	
12	4	124	4	0	
11	4	124	5	0	
13	4	124	6	315	
38	4	124	7	645	
37	4	124	8	0	
36	4	124	9	0	
34	4	124	10	0	
35	4	124	11	0	
33	4	124	12	0	
58	4	124	13	626	
59	4	124	14	627	
61	4	124	15	639	
60	4	124	16	633	
62	4	124	17	646	
65	4	124	18	647	
91	4	124	19	632	
88	4	124	20	646	
86	4	124	21	647	
87	4	124	22	646	
85	4	124	23	612	
84	4	124	24	645	
112	4	124	25	560	
113	4	124	26	558	
116	4	124	27	449	
115	4	124	28	131	
114	4	124	29	471	
145	4	124	32	239	
143	4	124	33	330	
144	4	124	34	181	
140	4	124	35	485	
139	4	124	36	239	
166	4	139	1	325	
167	4	139	2	287	
168	4	139	3	206	
169	4	139	4	529	
174	4	139	5	240	
198	4	139	10	397	
197	4	139	11	170	
195	4	139	12	327	
229	4	139	13	78	
162	4	140	1	0	
161	4	140	2	335	
160	4	140	3	0	
163	4	140	4	119	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
164	4	140	5	297	
165	4	140	6	219	
194	4	140	7	168	
193	4	140	8	223	
191	4	140	9	0	
192	4	140	10	315	
190	4	140	11	330	
189	4	140	12	0	
220	4	140	13	0	
221	4	140	14	350	
223	4	140	15	284	
225	4	140	16	343	
226	4	140	17	322	
228	4	140	18	214	
260	4	140	20	193	
258	4	140	21	110	
259	4	140	22	87	25,920
714	5	178	11	446	
712	5	178	12	486	
717	5	178	13	305	
718	5	178	14	284	
737	5	178	15	339	
755	5	178	22	502	
754	5	178	23	253	
753	5	178	24	313	
786	5	178	25	572	
787	5	178	26	633	
788	5	178	27	623	
837	5	178	33	636	
822	5	178	34	0	
821	5	178	35	0	
820	5	178	36	0	
711	5	179	7	460	
708	5	179	8	121	
706	5	179	9	334	
705	5	179	10	0	
704	5	179	11	0	
703	5	179	12	0	
707	5	179	13	0	
709	5	179	14	0	
710	5	179	15	0	
713	5	179	16	531	
715	5	179	17	121	
716	5	179	18	100	
752	5	179	19	49	
751	5	179	20	126	
750	5	179	21	199	
749	5	179	22	0	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
748	5	179	23	0	
747	5	179	24	0	
780	5	179	25	0	
781	5	179	26	0	
782	5	179	27	73	
783	5	179	28	310	
784	5	179	29	65	
785	5	179	30	92	
819	5	179	31	493	
818	5	179	32	516	
817	5	179	33	309	
816	5	179	34	402	
815	5	179	35	0	
814	5	179	36	0	
849	5	189	1	0	
850	5	189	2	0	
851	5	189	3	252	
852	5	189	4	0	
853	5	189	5	0	
854	5	189	6	0	
874	5	189	7	0	
873	5	189	8	0	
872	5	189	9	0	
871	5	189	10	0	
870	5	189	11	0	
869	5	189	12	0	
889	5	189	13	0	
890	5	189	14	0	
891	5	189	15	0	
892	5	189	16	0	
894	5	189	17	0	
895	5	189	18	0	
914	5	189	19	0	
913	5	189	20	0	
912	5	189	21	0	
911	5	189	22	0	
910	5	189	23	0	
909	5	189	24	0	
928	5	189	25	0	
929	5	189	26	0	
930	5	189	27	0	
931	5	189	28	0	
932	5	189	29	0	
933	5	189	30	0	
953	5	189	31	0	
952	5	189	32	0	
951	5	189	33	0	
950	5	189	34	0	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
949	5	189	35	0	
948	5	189	36	0	
855	5	190	1	0	
856	5	190	2	0	
857	5	190	3	0	
858	5	190	4	0	
893	5	190	8	595	
878	5	190	9	0	
877	5	190	10	0	
876	5	190	11	0	
875	5	190	12	0	
896	5	190	13	0	
897	5	190	14	0	
898	5	190	15	0	
899	5	190	16	0	
900	5	190	17	287	
921	5	190	20	35	
918	5	190	21	0	
917	5	190	22	0	
916	5	190	23	0	
915	5	190	24	0	
934	5	190	25	0	
935	5	190	26	0	
936	5	190	27	0	
937	5	190	28	0	
938	5	190	29	0	
947	5	190	30	0	
959	5	190	31	0	
958	5	190	32	0	
957	5	190	33	0	
956	5	190	34	0	
955	5	190	35	0	
954	5	190	36	0	10,862
330	6	140	29	81	
365	6	140	31	56	
341	6	140	32	22	
386	6	161	5	44	
387	6	161	6	6	
434	6	161	7	67	
433	6	161	8	68	
485	6	161	17	34	
486	6	161	18	26	
526	6	161	19	28	
527	6	161	20	11	
564	6	161	29	51	
565	6	161	30	36	
425	6	162	1	37	
435	6	162	12	16	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
487	6	162	13	74	
528	6	162	24	39	
569	6	162	25	26	722
370	7	139	36	50	
326	7	140	29	81	
334	7	140	30	60	
343	7	140	31	56	
342	7	140	32	22	
388	7	161	6	6	
389	7	162	1	37	
411	7	162	2	11	
436	7	162	12	16	339
371	8	140	36	0	
373	8	160	1	0	
374	8	160	2	0	
375	8	160	3	0	
376	8	160	4	0	
378	8	160	5	0	
379	8	160	6	0	
424	8	160	7	0	
423	8	160	8	0	
422	8	160	9	0	
421	8	160	10	0	
417	8	160	11	0	
418	8	160	12	0	
473	8	160	15	0	
474	8	160	16	0	
476	8	160	17	0	
478	8	160	18	0	
519	8	160	19	0	
518	8	160	20	0	
380	8	161	1	0	
404	8	161	2	258	
416	8	161	3	135	
469	8	161	8	68	
452	8	161	9	45	
428	8	161	10	169	
427	8	161	11	28	
426	8	161	12	0	
479	8	161	13	0	
480	8	161	14	321	
482	8	161	15	290	
483	8	161	16	108	
484	8	161	17	34	
525	8	161	20	11	
523	8	161	21	130	
522	8	161	22	4	
521	8	161	23	227	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
520	8	161	24	0	
559	8	161	25	493	
560	8	161	26	440	
561	8	161	27	287	
562	8	161	28	141	
563	8	161	29	51	
582	8	161	30	36	3,276
466	9	162	7	11	
464	9	162	8	8	
463	9	162	9	76	
462	9	162	10	34	
515	9	162	13	74	
496	9	162	14	8	
491	9	162	15	86	
494	9	162	16	83	
493	9	162	17	68	
492	9	162	18	2	
533	9	162	19	97	
531	9	162	20	63	
532	9	162	21	65	
534	9	162	22	76	
530	9	162	23	5	
529	9	162	24	39	
572	9	162	25	26	
566	9	162	26	47	
567	9	162	27	53	
570	9	162	28	386	
571	9	162	29	185	
573	9	162	30	133	
614	9	162	31	452	
615	9	162	32	298	
613	9	162	33	359	
612	9	162	34	465	
611	9	162	35	358	
608	9	162	36	125	
467	9	163	12	65	
495	9	163	13	39	
535	9	163	24	97	
647	9	177	2	169	
648	9	177	3	88	
649	9	177	4	315	
651	9	177	5	330	
650	9	177	6	360	
685	9	177	7	456	
686	9	177	8	366	
684	9	177	9	205	
682	9	177	10	163	
679	9	177	11	123	

Table B-2

Grid cells within or touched by each Theissen polygon
Wind station number = Theissen polygon number

Includes duplicates

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
727	9	177	15	87	
728	9	177	16	273	
730	9	177	17	316	
729	9	177	18	549	
765	9	177	19	600	
764	9	177	20	316	
763	9	177	21	276	
797	9	177	28	398	
796	9	177	29	509	
799	9	177	30	613	
833	9	177	31	637	
832	9	177	32	542	11,574
408	10	160	1	0	
458	10	160	10	0	
420	10	160	11	0	
419	10	160	12	0	
471	10	160	13	0	
470	10	160	14	0	
472	10	160	15	0	
477	10	160	16	0	
510	10	160	17	0	
524	10	160	19	0	
516	10	160	20	0	
514	10	160	21	0	
513	10	160	22	0	
511	10	160	23	0	
512	10	160	24	0	
552	10	160	25	0	
551	10	160	26	563	
553	10	160	27	652	
554	10	160	28	0	
555	10	160	29	0	
556	10	160	30	0	
601	10	160	31	631	
599	10	160	32	626	
598	10	160	33	307	
597	10	160	34	226	
596	10	160	35	3	
595	10	160	36	0	
549	10	161	24	0	
558	10	161	25	493	
568	10	161	26	440	
593	10	161	27	287	
603	10	161	35	208	
602	10	161	36	398	
637	10	178	1	107	
638	10	178	2	286	
674	10	178	11	446	

Table B-2

Grid cells within or touched by each Theissen polygon
Wind station number = Theissen polygon number

Includes duplicates

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
672	10	178	12	486	
631	10	179	1	0	
632	10	179	2	0	
633	10	179	3	0	
634	10	179	4	319	
635	10	179	5	520	
636	10	179	6	631	
673	10	179	7	460	
671	10	179	8	121	
670	10	179	9	334	
669	10	179	10	0	
668	10	179	11	0	
667	10	179	12	0	8,544
196	11	139	3	206	
187	11	139	4	529	
186	11	139	5	240	
219	11	139	7	275	
205	11	139	8	206	
202	11	139	9	199	
199	11	139	10	397	
217	11	139	11	170	
222	11	139	12	327	
230	11	139	13	78	
231	11	139	14	88	
232	11	139	15	154	
233	11	139	16	212	
234	11	139	17	520	
269	11	139	20	198	
268	11	139	21	149	
267	11	139	22	67	
266	11	139	23	80	
265	11	139	24	10	
307	11	139	25	71	
306	11	139	26	23	
308	11	139	27	63	
255	11	140	17	322	
252	11	140	18	214	
264	11	140	19	123	
262	11	140	20	193	
281	11	140	21	110	
304	11	140	29	81	
305	11	140	30	60	5,365
550	12	162	19	97	
574	12	162	30	133	
616	12	162	31	452	
481	12	163	7	3	
475	12	163	8	15	
468	12	163	9	250	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
465	12	163	10	117	
461	12	163	11	71	
460	12	163	12	65	
497	12	163	13	39	
499	12	163	14	11	
498	12	163	15	135	
504	12	163	16	186	
502	12	163	17	125	
503	12	163	18	192	
541	12	163	19	523	
540	12	163	20	296	
539	12	163	21	129	
538	12	163	22	16	
537	12	163	23	8	
536	12	163	24	97	
575	12	163	25	206	
576	12	163	26	131	
577	12	163	27	174	
579	12	163	28	257	
578	12	163	29	561	
580	12	163	30	617	
622	12	163	31	650	
620	12	163	32	624	
621	12	163	33	556	
619	12	163	34	528	
618	12	163	35	527	
617	12	163	36	426	
517	12	164	13	615	
557	12	164	23	620	
542	12	164	24	561	
581	12	164	25	647	
585	12	164	26	637	
600	12	164	27	0	
630	12	164	33	0	
628	12	164	34	0	
627	12	164	35	0	
623	12	164	36	654	
661	12	175	1	318	
662	12	175	2	0	
665	12	175	3	0	
664	12	175	4	0	
666	12	175	5	0	
702	12	175	7	0	
698	12	175	8	0	
697	12	175	9	0	
696	12	175	10	0	
695	12	175	11	0	
694	12	175	12	0	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
739	12	175	13	0	
740	12	175	14	0	
742	12	175	15	0	
741	12	175	16	0	
743	12	175	17	0	
744	12	175	18	0	
778	12	175	19	0	
779	12	175	20	0	
776	12	175	21	0	
777	12	175	22	0	
774	12	175	23	0	
775	12	175	24	0	
811	12	175	25	0	
810	12	175	26	0	
809	12	175	27	0	
808	12	175	28	0	
812	12	175	29	0	
813	12	175	30	0	
847	12	175	31	0	
846	12	175	32	0	
845	12	175	33	0	
844	12	175	34	0	
842	12	175	35	0	
843	12	175	36	0	
653	12	176	1	587	
654	12	176	2	615	
655	12	176	3	618	
656	12	176	4	645	
657	12	176	5	641	
658	12	176	6	650	
693	12	176	7	679	
692	12	176	8	382	
691	12	176	9	648	
690	12	176	10	609	
689	12	176	11	497	
688	12	176	12	611	
732	12	176	13	523	
733	12	176	14	568	
734	12	176	15	541	
735	12	176	16	501	
736	12	176	17	563	
738	12	176	18	643	
773	12	176	19	585	
772	12	176	20	585	
771	12	176	21	573	
770	12	176	22	244	
769	12	176	23	433	
768	12	176	24	483	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
801	12	176	25	543	
802	12	176	26	634	
803	12	176	27	604	
805	12	176	28	626	
806	12	176	29	612	
807	12	176	30	320	
841	12	176	31	0	
840	12	176	32	0	
839	12	176	33	0	
838	12	176	34	601	
836	12	176	35	461	
835	12	176	36	626	
652	12	177	6	360	
687	12	177	7	456	
731	12	177	18	549	
767	12	177	19	600	
800	12	177	30	613	
834	12	177	31	637	
868	12	191	6	633	
888	12	191	7	0	34,568
297	13	138	20	46	
294	13	138	21	47	
293	13	138	22	87	
292	13	138	23	42	
291	13	138	24	16	
314	13	138	25	0	
315	13	138	26	13	
317	13	138	27	92	
318	13	138	28	216	
319	13	138	29	175	
359	13	138	30	68	
363	13	138	31	169	
360	13	138	32	197	
358	13	138	33	11	
357	13	138	34	0	
355	13	138	35	9	
354	13	138	36	8	
399	13	163	1	33	
400	13	163	2	85	
401	13	163	3	115	
402	13	163	4	130	
403	13	163	5	45	
430	13	163	6	52	
448	13	163	7	3	
449	13	163	8	15	
451	13	163	9	250	
447	13	163	10	117	
446	13	163	11	71	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
445	13	163	12	65	2,177
592	14	161	27	287	
591	14	161	28	141	
590	14	161	29	51	
589	14	161	30	36	
607	14	161	31	190	
610	14	161	32	107	
605	14	161	33	116	
604	14	161	34	495	
609	14	161	35	208	
594	14	162	25	26	
645	14	162	35	358	
606	14	162	36	125	
642	14	177	1	151	
646	14	177	2	169	
699	14	177	10	163	
677	14	177	11	123	
680	14	177	12	111	
723	14	177	13	29	
726	14	177	14	373	
725	14	177	15	87	
746	14	177	16	273	
766	14	177	21	276	
761	14	177	22	198	
762	14	177	23	199	
760	14	177	24	318	
793	14	177	25	352	
794	14	177	26	386	
795	14	177	27	312	
798	14	177	28	398	
804	14	177	29	509	
848	14	177	31	637	
831	14	177	32	542	
830	14	177	33	384	
829	14	177	34	610	
828	14	177	35	502	
827	14	177	36	360	
639	14	178	2	286	
640	14	178	3	213	
641	14	178	4	172	
644	14	178	5	50	
643	14	178	6	84	
681	14	178	7	5	
683	14	178	8	12	
678	14	178	9	64	
676	14	178	10	100	
675	14	178	11	446	
719	14	178	14	284	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
720	14	178	15	339	
721	14	178	16	290	
724	14	178	17	19	
722	14	178	18	18	
758	14	178	19	145	
759	14	178	20	103	
757	14	178	21	223	
756	14	178	22	502	
789	14	178	27	623	
790	14	178	28	471	
792	14	178	29	107	
791	14	178	30	351	
826	14	178	31	318	
825	14	178	32	605	
824	14	178	33	636	
823	14	178	34	0	
859	14	190	4	0	
860	14	190	5	605	
861	14	190	6	262	
881	14	190	7	290	
880	14	190	8	595	
879	14	190	9	0	
901	14	190	17	287	
903	14	190	18	634	
920	14	190	19	333	
922	14	190	20	35	
939	14	190	29	0	
940	14	190	30	0	
960	14	190	31	0	
862	14	191	1	303	
863	14	191	2	179	
864	14	191	3	459	
865	14	191	4	555	
866	14	191	5	537	
867	14	191	6	633	
887	14	191	7	0	
886	14	191	8	510	
884	14	191	9	546	
885	14	191	10	588	
883	14	191	11	608	
882	14	191	12	275	
902	14	191	13	648	
904	14	191	14	651	
906	14	191	15	634	
905	14	191	16	631	
907	14	191	17	530	
908	14	191	18	0	
927	14	191	19	0	

Table B-2 | Grid cells within or touched by each Theissen polygon | Includes duplicates

Wind station number = Theissen polygon number

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
926	14	191	20	593	
924	14	191	21	644	
925	14	191	22	621	
923	14	191	23	629	
919	14	191	24	675	
943	14	191	25	0	
942	14	191	26	0	
941	14	191	27	0	
944	14	191	28	0	
946	14	191	29	0	
945	14	191	30	0	
966	14	191	31	0	
965	14	191	32	0	
963	14	191	33	0	
964	14	191	34	0	
962	14	191	35	0	
961	14	191	36	0	30,558
377	15	139	34	58	
372	15	139	35	25	
413	15	162	1	37	
392	15	162	2	11	
393	15	162	3	5	
439	15	162	10	34	
438	15	162	11	15	
437	15	162	12	16	
488	15	162	13	74	
489	15	162	14	8	
490	15	162	15	86	369
333	16	139	25	71	
336	16	139	26	23	
345	16	139	35	25	
346	16	139	36	50	
328	16	140	29	81	
332	16	140	30	60	
344	16	140	31	56	
390	16	162	1	37	
391	16	162	2	11	414
14	17	124	6	315	
39	17	124	7	645	
64	17	124	18	647	
90	17	124	19	632	
104	17	124	20	646	
121	17	124	29	471	
120	17	124	30	608	
149	17	124	31	288	
148	17	124	32	239	
15	17	125	1	286	
16	17	125	2	613	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
17	17	125	3	596	
18	17	125	4	308	
19	17	125	5	496	
20	17	125	6	603	
45	17	125	7	610	
44	17	125	8	301	
43	17	125	9	516	
41	17	125	10	598	
42	17	125	11	518	
40	17	125	12	527	
63	17	125	13	504	
70	17	125	14	341	
71	17	125	15	259	
67	17	125	16	237	
66	17	125	17	505	
68	17	125	18	623	
94	17	125	19	593	
92	17	125	20	565	
93	17	125	21	321	
97	17	125	22	220	
96	17	125	23	278	
89	17	125	24	448	
119	17	125	25	258	
125	17	125	26	282	
118	17	125	27	157	
117	17	125	28	398	
122	17	125	29	297	
123	17	125	30	412	
151	17	125	31	518	
147	17	125	32	286	
146	17	125	33	93	
141	17	125	34	101	
142	17	125	35	108	
150	17	125	36	39	
21	17	126	1	533	
22	17	126	2	525	
23	17	126	3	573	
24	17	126	4	0	
25	17	126	5	0	
26	17	126	6	0	
51	17	126	7	0	
50	17	126	8	0	
49	17	126	9	0	
47	17	126	10	289	
48	17	126	11	0	
46	17	126	12	667	
69	17	126	13	661	
72	17	126	14	0	

Table B-2 — Grid cells within or touched by each Theissen polygon — Includes duplicates
Wind station number = Theissen polygon number

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
74	17	126	15	0	
73	17	126	16	0	
75	17	126	17	0	
76	17	126	18	0	
102	17	126	19	0	
101	17	126	20	0	
99	17	126	21	0	
100	17	126	22	0	
98	17	126	23	0	
95	17	126	24	649	
124	17	126	25	564	
126	17	126	26	0	
127	17	126	27	0	
128	17	126	28	0	
129	17	126	29	0	
155	17	126	33	0	
154	17	126	34	0	
153	17	126	35	0	
152	17	126	36	529	
179	17	137	1	673	
180	17	137	2	0	
181	17	137	3	0	
213	17	137	11	0	
210	17	137	12	529	
244	17	137	13	51	
178	17	138	1	100	
171	17	138	2	175	
170	17	138	3	141	
173	17	138	4	187	
172	17	138	5	506	
177	17	138	6	405	
207	17	138	7	260	
200	17	138	8	184	
201	17	138	9	147	
203	17	138	10	160	
204	17	138	11	23	
209	17	138	12	71	
242	17	138	13	116	
238	17	138	14	52	
237	17	138	15	171	
241	17	138	16	63	
240	17	138	17	3	
243	17	138	18	5	
282	17	138	19	96	
280	17	138	20	46	
278	17	138	21	47	
272	17	138	22	87	
273	17	138	23	42	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
274	17	138	24	16	
175	17	139	5	240	
176	17	139	6	107	
208	17	139	7	275	
206	17	139	8	206	
239	17	139	18	369	
275	17	139	19	109	28,958
77	18	126	18	0	
103	18	126	19	0	
105	18	126	20	0	
132	18	126	28	0	
130	18	126	29	0	
131	18	126	30	0	
158	18	126	31	0	
157	18	126	32	0	
156	18	126	33	0	
159	18	126	34	0	
188	18	137	2	0	
182	18	137	3	0	
183	18	137	4	0	
184	18	137	5	0	
185	18	137	6	0	
214	18	137	7	0	
215	18	137	8	0	
216	18	137	9	0	
211	18	137	10	0	
212	18	137	11	0	
218	18	137	12	529	
245	18	137	13	51	
246	18	137	14	570	
248	18	137	15	335	
249	18	137	16	0	
251	18	137	17	0	
250	18	137	18	0	
290	18	137	19	0	
289	18	137	20	477	
288	18	137	21	632	
287	18	137	22	654	
286	18	137	23	435	
285	18	137	24	18	
320	18	137	25	36	
323	18	137	26	490	
324	18	137	27	653	
325	18	137	28	629	
327	18	137	29	638	
329	18	137	30	0	
369	18	137	31	0	
368	18	137	32	0	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
367	18	137	33	684	
366	18	137	34	682	
364	18	137	35	590	
361	18	137	36	162	
254	18	138	18	5	
284	18	138	19	96	
295	18	138	20	46	
322	18	138	29	175	
321	18	138	30	68	
362	18	138	31	169	
405	18	163	5	45	
406	18	163	6	52	
450	18	163	7	3	
505	18	163	18	192	
407	18	164	1	567	
409	18	164	2	543	
410	18	164	3	62	
412	18	164	4	0	
414	18	164	5	0	
415	18	164	6	0	
459	18	164	7	0	
457	18	164	8	0	
456	18	164	9	0	
455	18	164	10	0	
454	18	164	11	425	
453	18	164	12	211	
506	18	164	13	615	
501	18	164	14	700	
500	18	164	15	0	
507	18	164	16	0	
508	18	164	17	0	
509	18	164	18	0	
548	18	164	19	0	
543	18	164	20	0	
544	18	164	21	0	
545	18	164	22	0	
546	18	164	23	620	
547	18	164	24	561	
586	18	164	26	637	
587	18	164	27	0	
584	18	164	28	0	
583	18	164	29	0	
588	18	164	30	0	
624	18	164	31	0	
625	18	164	32	0	
626	18	164	33	0	
629	18	164	34	0	
663	18	175	4	0	

Table B-2 Grid cells within or touched by each Theissen polygon Includes duplicates
Wind station number = Theissen polygon number

Record Id#	wind station number	BOOK	SECTION	vacant area (acres)	total vacant area (acres)
660	18	175	5	0	
659	18	175	6	0	
701	18	175	7	0	
700	18	175	8	0	
745	18	175	18	0	14,057

Total area, including duplicate sections	183,345	183,345

Duplicate grid cells in each Theissen polygon (wind station) - based on study area# assigned to more than one Theissen polygon (wind station)

Table B-3

wind station	STUDYAREA# (unique)	BOOK	SECTION	vacant area (acres)	total duplicate area	correction
1	226	139	22	67		
1	227	139	21	149		
1	248	139	26	23		
1	250	139	27	63		
1	251	139	28	59		
1	272	139	35	25		
1	274	139	34	58		
1	275	139	33	191	635	318
2	195	140	14	350		
2	196	140	15	284		
2	219	140	21	110		
2	220	140	22	87		
2	221	140	20	193		
2	246	140	29	81		
2	270	140	32	22		
2	297	161	3	135		
2	298	161	2	258		
2	300	161	5	44		
2	328	161	10	169		
2	329	161	9	45		
2	330	161	8	68	1846	923
3	184	139	8	206		
3	186	139	7	275		
3	204	139	17	520		
3	205	139	18	369		
3	227	139	21	149		
3	228	139	20	198		
3	229	139	19	109		
3	232	138	24	16		
3	251	139	28	59		
3	274	139	34	58		
3	275	139	33	191		
3	278	138	36	8		
3	304	162	3	5		
3	308	163	1	33		
3	334	162	10	34		
3	335	162	8	8		
3	336	162	9	76		
3	337	162	7	11		
3	338	163	12	65	2390	1195
4	13	124	6	315		
4	37	124	7	645		
4	62	124	18	647		
4	84	124	20	646		
4	86	124	19	632		
4	106	124	29	471		
4	134	124	32	239		
4	154	139	3	206		
4	155	139	4	529		
4	160	139	5	240		
4	176	139	12	327		

Duplicate grid cells in each Theissen polygon (wind station) - based on study area# assigned to more than one Theissen polygon (wind station)

Table B-3

wind station #	STUDYAREA# (unique)	BOOK	SECTION	vacant area (acres)	total duplicate area	correction
4	177	139	11	170		
4	178	139	10	397		
4	195	140	14	350		
4	196	140	15	284		
4	198	140	17	322		
4	199	140	18	214		
4	200	139	13	78		
4	219	140	21	110		
4	220	140	22	87		
4	221	140	20	193	7102	3551
5	503	179	9	334		
5	504	179	8	121		
5	505	178	12	486		
5	506	179	7	460		
5	507	178	11	446		
5	537	178	14	284		
5	538	178	15	339		
5	568	178	22	502		
5	598	178	27	623		
5	629	178	33	636		
5	678	190	8	595		
5	696	190	17	287		
5	716	190	20	35	5148	2574
6	246	140	29	81		
6	270	140	32	22		
6	271	140	31	56		
6	300	161	5	44		
6	301	161	6	6		
6	302	162	1	37		
6	330	161	8	68		
6	332	162	12	16		
6	360	161	17	34		
6	362	162	13	74		
6	390	161	20	11		
6	392	162	24	39		
6	420	161	29	51		
6	421	161	30	36		
6	424	162	25	26	601	301
7	246	140	29	81		
7	247	140	30	60		
7	270	140	32	22		
7	271	140	31	56		
7	273	139	36	50		
7	301	161	6	6		
7	302	162	1	37		
7	303	162	2	11		
7	332	162	12	16	339	170
8	297	161	3	135		
8	298	161	2	258		
8	328	161	10	169		
8	329	161	9	45		

Duplicate grid cells in each Theissen polygon (wind station) - based on study area# assigned to more than one Theissen polygon (wind station)

Table B-3

wind station	STUDYAREA# (unique)	BOOK	SECTION	vacant area (acres)	total duplicate area	correction
8	330	161	8	68		
8	360	161	17	34		
8	390	161	20	11		
8	416	161	25	493		
8	417	161	26	440		
8	418	161	27	287		
8	419	161	28	141		
8	420	161	29	51		
8	421	161	30	36	2168	1084
9	334	162	10	34		
9	335	162	8	8		
9	336	162	9	76		
9	337	162	7	11		
9	338	163	12	65		
9	362	162	13	74		
9	363	162	14	8		
9	364	162	15	86		
9	368	163	13	39		
9	392	162	24	39		
9	396	162	19	97		
9	398	163	24	97		
9	424	162	25	26		
9	427	162	30	133		
9	450	162	36	125		
9	453	162	35	358		
9	456	162	31	452		
9	483	177	2	169		
9	486	177	6	360		
9	509	177	11	123		
9	513	177	10	163		
9	516	177	7	456		
9	543	177	15	87		
9	545	177	16	273		
9	546	177	18	549		
9	575	177	21	276		
9	577	177	19	600		
9	605	177	29	509		
9	606	177	28	398		
9	607	177	30	613		
9	636	177	32	542		
9	637	177	31	637	7483	3742
10	416	161	25	493		
10	417	161	26	440		
10	418	161	27	287		
10	447	161	35	208		
10	477	178	2	286		
10	503	179	9	334		
10	504	179	8	121		
10	505	178	12	486		
10	506	179	7	460		
10	507	178	11	446	3561	1781

Duplicate grid cells in each Theissen polygon (wind station) - based on study area# assigned to more than one Theissen polygon (wind station)

Table B-3

wind station	STUDYAREA# (unique)	BOOK	SECTION	vacant area (acres)	total duplicate area	correction
11	154	139	3	206		
11	155	139	4	529		
11	160	139	5	240		
11	176	139	12	327		
11	177	139	11	170		
11	178	139	10	397		
11	184	139	8	206		
11	186	139	7	275		
11	198	140	17	322		
11	199	140	18	214		
11	200	139	13	78		
11	204	139	17	520		
11	219	140	21	110		
11	221	140	20	193		
11	226	139	22	67		
11	227	139	21	149		
11	228	139	20	198		
11	246	140	29	81		
11	247	140	30	60		
11	248	139	26	23		
11	249	139	25	71		
11	250	139	27	63	4499	2250
12	338	163	12	65		
12	339	163	11	71		
12	340	163	10	117		
12	341	163	7	3		
12	342	163	8	15		
12	343	163	9	250		
12	368	163	13	39		
12	374	163	18	192		
12	376	164	13	615		
12	396	162	19	97		
12	398	163	24	97		
12	404	164	24	561		
12	408	164	23	620		
12	427	162	30	133		
12	437	164	26	637		
12	456	162	31	452		
12	486	177	6	360		
12	516	177	7	456		
12	546	177	18	549		
12	577	177	19	600		
12	607	177	30	613		
12	637	177	31	637		
12	667	191	6	633	7812	3906
13	230	138	22	87		
13	231	138	23	42		
13	232	138	24	16		
13	233	138	21	47		
13	234	138	20	46		
13	258	138	29	175		

Duplicate grid cells in each Theissen polygon (wind station) - based on study area# assigned to more than one Theissen polygon (wind station)

Table B-3

wind station #	STUDYAREA# (unique)	BOOK	SECTION	vacant area (acres)	total duplicate area	correction
13	260	138	30	68		
13	278	138	36	8		
13	284	138	31	169		
13	308	163	1	33		
13	312	163	5	45		
13	313	163	6	52		
13	338	163	12	65		
13	339	163	11	71		
13	340	163	10	117		
13	341	163	7	3		
13	342	163	8	15		
13	343	163	9	250	1309	655
14	418	161	27	287		
14	419	161	28	141		
14	420	161	29	51		
14	421	161	30	36		
14	424	162	25	26		
14	447	161	35	208		
14	450	162	36	125		
14	453	162	35	358		
14	477	178	2	286		
14	483	177	2	169		
14	507	178	11	446		
14	509	177	11	123		
14	513	177	10	163		
14	537	178	14	284		
14	538	178	15	339		
14	543	177	15	87		
14	545	177	16	273		
14	568	178	22	502		
14	575	177	21	276		
14	598	178	27	623		
14	605	177	29	509		
14	606	177	28	398		
14	629	178	33	636		
14	636	177	32	542		
14	637	177	31	637		
14	667	191	6	633		
14	678	190	8	595		
14	696	190	17	287		
14	716	190	20	35	9075	4538
15	272	139	35	25		
15	274	139	34	58		
15	302	162	1	37		
15	303	162	2	11		
15	304	162	3	5		

Duplicate grid cells in each Theissen polygon (wind station) - based on study area# assigned to more than one Theissen polygon (wind station)

Table B-3

wind station	STUDYAREA# (unique)	BOOK	SECTION	vacant area (acres)	total duplicate area	correction
15	332	162	12	16		
15	334	162	10	34		
15	362	162	13	74		
15	363	162	14	8		
15	364	162	15	86	354	177
16	246	140	29	81		
16	247	140	30	60		
16	248	139	26	23		
16	249	139	25	71		
16	271	140	31	56		
16	272	139	35	25		
16	273	139	36	50		
16	302	162	1	37		
16	303	162	2	11	414	207
17	13	124	6	315		
17	37	124	7	645		
17	62	124	18	647		
17	84	124	20	646		
17	86	124	19	632		
17	106	124	29	471		
17	134	124	32	239		
17	160	139	5	240		
17	184	139	8	206		
17	186	139	7	275		
17	188	137	12	529		
17	205	139	18	369		
17	211	138	18	5		
17	212	137	13	51		
17	229	139	19	109		
17	230	138	22	87		
17	231	138	23	42		
17	232	138	24	16		
17	233	138	21	47		
17	234	138	20	46		
17	235	138	19	96	5713	2857
18	188	137	12	529		
18	211	138	18	5		
18	212	137	13	51		
18	234	138	20	46		
18	235	138	19	96		
18	258	138	29	175		
18	260	138	30	68		
18	284	138	31	169		
18	312	163	5	45		
18	313	163	6	52		
18	341	163	7	3		
18	374	163	18	192		
18	376	164	13	615		
18	404	164	24	561		
18	408	164	23	620		
18	437	164	26	637	3864	1932

Table B-4

Field sampling summary

	General comments
	Following the proposed Clark County rule section 41.7.2.2, the
	Ball drop -> % nonerodible -> TFV test sequence is heirarchical.
	A 999 code indicates that a test was not needed and not performed
	because of an earlier result in the heirarchy.
	In some cases, the tests were performed even when not needed.
Ball drop	If Ball drop = pass (P), then a visible crust is present, the site is stable (0) and %non-erodible, TFV
	tests are not needed and usually not performed
Flat veg	If Ball drop = fail (F), then do count of % flat vegetation & non-erodible elements, per section 41.9.5
	page 41-15. This method counts both flat vegetation and other non-erodible elements
	If % flat + non-erodible > 50% then site is stable, and TFV test is not
	usually performed
	If % non-erodible <= 50%, then do TFV test by sieving to determine
	mode of soil particle size distribution & compute TFV in cm/sec
TFV	The TFV test is carried out per section 41.9.4.1, pp 41-12 and 41-13,
	If sieve analysis test shows TFV > 100 cm/sec, then site is stable
	If sieve analysis test shows TFV <= 100 cm/sec, then
	run Rock Test
Rock Test	Rock Test Method
	The method used by UNLV does not conform to 41.9.7 Rock Test
	Method in proposed Clark County rule 41. UNLV attempted to
	develop a faster, more quantitative procedure than 41.9.7
	UNLV sampled all rocks to depth of 1 cm from a random cast
	of the 1 square foot quadrat
	Rocks were poured into a 1 cm sieve, and rocks not passing
	1 cm sieve were poured into a cake pan, and shaken into
	a single layer in one corner to determine areal coverage of
	rock elements. Dimensions of rock layer were measured with
	a ruler, and the area calculated, then divided by two to compute
	frontal area of the rocks. The frontal area was then divided by the area sampled
	by the dust pan (generally 1 square foot) to get the % area.
	If % rock frontal area exceeds 10% then site is stable.
adjust TFV	If rock frontal area is less than 10%, then adjust TFV using
	the percent frontal area result per 41.9.4.1 Table 2
	If adjusted TFV > 100 cm/sec, site is stable
	If adjusted TFV < 100 cm/sec, site is unstable

Table B-4

Field sampling summary

BOOK #	LOCATION	TOWNSHIP	RANGE	SECTION	AREA (ft^2)	BALL DROP (P/F)	% FLAT VEG+NONEROD	TFV (cm/s)	UNSTABLE (yes=1, no=0)
140	Bonanza Rd/Fogg	20 S	62 E	34	67,500	F	60.6	76.7	0
140	Spanish Dr./Clayton (East End)	20 S	62 E	34	186,000	F	37	30	1
140	Spanish Dr./Clayton (West End)	20 S	62 E	34	225,000	F	14.5	30	1
140	Stewart Ave/Fogg	20 S	62 E	34	41,250	F	25.6	76.7	0
140	Mabel/Fogg (A)	20 S	62 E	34	240,625	F	49.3	30	1
140	Mabel/Fogg (B)	20 S	62 E	34	68,750	F	23	30	1
140	Mabel/Fogg (C)	20 S	62 E	34	151,250	F	17.5	53.3	0
140	Mabel/Fogg (D)	20 S	62 E	34	89,375	N/A	27	999	1
140	Mabel/Beesley	20 S	62 E	34	60,000	F	46.3	30	1
140	Sunrise Mt. Drive	20 S	62 E	34	250,000	P	23	999	0
164	Havenwood/Town Center Dr.(SW)	21 S	59 E	12		F	86	999	0
164	Havenwood Development (cons)	21 S	59 E	12		N/A	76	999	0
164	Town Cntr btwn. Havenwood Desert Primrose Ln	21 S	59 E	12		F	55.5	999	0
164	Havenwood/Town Center Dr. (SE)	21 S	59 E	12		F	78.5	999	0
162	McLeod/McCong	21 S	61 E	25		P	999	999	0
162	McCong/Harrison	21 S	61 E	25		F	30.7	116.1	0
162	Reno/Harrison	21 S	61 E	25		F	40	117.9	0
162	West of Oak off of Russell	21 S	61 E	25		F	53	999	0
162	Shamrock/Pecos	21 S	61 E	25		F	16.5	60	0
162	I-15/Post Rd.	21 S	61 E	32	360,000	F	42.3	159	0
162	Russell Rd./Polaris	21 S	61 E	32	1,125,000	P	60	999	0
162	West Sunset/Polaris	21 S	61 E	32	174,000	P	999	999	0
162	West Sunset/Crystal*	21 S	61 E	32	195,000	N/A	999	999	N/R
162	Russell Rd btwn. I-15 and LV Blvd	21 S	61 E	32	6,600,000	N/A	999	999	N/R
162	West Sunset btwn. LV Blvd and Windy Rd.	21 S	61 E	32	350,000	N/A	999	999	N/R
162	Post/Crystal	21 S	61 E	32	195,000	P	999	999	0
177	Las Vegas Blvd./Warm Springs Rd.	22 S	61 E	8	8,820,000	F	55.5	999	0
177	Blue Diamond Rd/Industrial	22 S	61 E	8	750,000	F	51.3	999	0
177	Valley View/Eldorado	22 S	61 E	8	445,500	F	49.5	999	0
177	Windmill/LV Blvd *	22 S	61 E	8	2,310,000	N/A	999	999	N/R
161	Galleria Dr./Russell Rd	21 S	62 E	33	285,000	P	999	999	0
161	Patrick Ln/Galleria Dr. (A)	21 S	62 E	33	307,500	F	18.3	117.99	0
161	Patrick Ln/Galleria Dr. (B)	21 S	62 E	33	343,313	P	999	999	0
161	Russell off of US 95 Hwy. (C)	21 S	62 E	33	680,000	F	63.5	999	0
161	Russell off of US 95 Hwy. (D)	21 S	62 E	33	840,000	F	49	62.67	0
161	Patrick Ln./Stephanie	21 S	62 E	33	38,063	F	50.6	999	0
162	Pecos/Oquendo	21 S	61 E	36	37,500	P	999	999	0
162	McCleod/Harrison	21 S	61 E	36	136,250	P	999	999	0
162	McCleod/Post	21 S	61 E	36	265,000	N/A	999	999	999
162	Patrick Ln./Oquendo	21 S	61 E	36	877,500	P	999	999	0
162	Patrick Ln off of Eastern	21 S	61 E	36	384,688	P	999	999	0
139	Walnut/Craig Rd. (1)	20 S	61 E	1		P	999	999	0
139	Washburn/Pecos	20 S	61 E	1		P	999	999	0
139	Walnut/Craig Rd. (2)	20 S	61 E	1		P	999	999	0
139	Craig Rd/Statz	20 S	61 E	1		P	999	999	0
170	Lake Mead/Mohave (South Lot)	22 S	63 E	5		F	76	999	0
170	Lake Mead/Mohave (North Lot)	22 S	63 E	5		F	74	999	0
162	Decatur/Beltway(1)	21 S	61 E	31		P	999	999	0
162	Decatur/Beltway (2)	21 S	61 E	31		P	999	999	0
162	Decatur/Sunset (A)	21 S	61 E	31	709,938	P	999	999	0
162	Decatur/Sunset (B)	21 S	61 E	31		P	999	999	0
162	Arville/Sunset (A)	21 S	61 E	31	338,000	F	53.5	999	0
162	Arville/Sunset (B)	21 S	61 E	31		P	999	999	0
162	Hinson/Industrial Park	21 S	61 E	31		P	999	999	0
124	Willus/Ann	19 S	61 E	30		F	50.3	999	0

Table B-4

Field sampling summary

BOOK #	LOCATION	TOWNSHIP	RANGE	SECTION	AREA (ft^2)	BALL DROP (P/F)	% FLAT VEG+NONEROD	TFV (cm/s)	UNSTABLE (yes=1, no=0)
124	Decatur/Ranch House	19 S	61 E	30		P	999	999	0
124	Decatur/Centennial Pkwy	19 S	61 E	30		N/A	55.7	999	0
124	Willus/Ranch House	19 S	61 E	30		P	999	999	0
124	Willus/Ranch House (C)	19 S	61 E	30		N/A	53.3	999	0
125	Grand Canyon/Bath (A)	19 S	60 E	19		P	102	999	0
138	Fort Apache/Lone Mountain	20 S	60 E	5		P	84	999	0
138	Bonita Vista/Stange	20 S	60 E	5		P	70	999	0
140	Cheyenne/Lamb	20 S	62 E	17		P	999	999	0
140	Alto/Nellis	20 S	62 E	17		P	999	999	0
140	Lamont/Carey	20 S	62 E	17		P	999	999	0
140	Lamb/Carey	20 S	62 E	17		P	999	999	0
139	Lone Mountain/Clayton	20 S	61 E	5		P	999	999	0
139	Craig/Ruselier	20 S	61 E	5		P	999	999	0
139	Simmons/Lone Mountain	20 S	61 E	5		P	999	999	0

Table B-4

Field sampling summary

BOOK #	LOCATION	PHOTO VEG Cover (%)	VISUAL (yes=1, no=0)	Notes
140	Bonanza Rd/Fogg	5.7		
140	Spanish Dr./Clayton (East End)	5.7		
140	Spanish Dr./Clayton (West End)	5.7		
140	Stewart Ave/Fogg	5.7		
140	Mabel/Fogg (A)	5.7		
140	Mabel/Fogg (B)	5.7		
140	Mabel/Fogg (C)	5.7		
140	Mabel/Fogg (D)	5.7		N/A = ball drop test difficult to interpret
140	Mabel/Beesley	5.7		
140	Sunrise Mt. Drive	5.7		
164	Havenwood/Town Center Dr.(SW)	1.1		
164	Havenwood Development (cons)	1.1		N/A = ball drop test difficult to interpret
164	Town Cntr btwn. Havenwood Desert Primrose Ln	1.1		
164	Havenwood/Town Center Dr. (SE)	1.1		
162	McLeod/McCong	23.8		
162	McCong/Harrison	23.8		
162	Reno/Harrison	23.8		
162	West of Oak off of Russell	23.8		
162	Shamrock/Pecos	23.8		
162	I-15/Post Rd.	3.4		
162	Russell Rd./Polaris	3.4		
162	West Sunset/Polaris	3.4		Completely Bladed/Active Construction
162	West Sunset/Crystal*	3.4	0	
162	Russell Rd btwn. I-15 and LV Blvd	3.4		Active Construction/Completely Bladed/No Access/Area Approximated
162	West Sunset btwn. LV Blvd and Windy Rd.	999	0	Area approximated/Gravel Lot/Visual Pass
162	Post/Crystal	3.4		
177	Las Vegas Blvd./Warm Springs Rd.			Small portion of Area Sampled/Total Area Uniform
177	Blue Diamond Rd/Industrial			
177	Valley View/Eldorado			Small Area Sampled/Total Area Uniform
177	Windmill/LV Blvd *		0	Total Area Uniform/Visual Pass
161	Galleria Dr./Russell Rd	5.6		Small Area Sampled/Total Area Uniform
161	Patrick Ln/Galleria Dr. (A)	5.6		Dumping found in small areas
161	Patrick Ln/Galleria Dr. (B)	5.6		
161	Russell off of US 95 Hwy. (C)	5.6		
161	Russell off of US 95 Hwy. (D)	5.6		
161	Patrick Ln./Stephanie	5.6		Large portion of area covered by dumping
162	Pecos/Oquendo	16.2		
162	McCleod/Harrison	16.2		Active dumping taking place in small section of area
162	McCleod/Post	16.2	0	Highly vegetative area-visual pass
162	Patrick Ln./Oquendo	16.2		
162	Patrick Ln off of Eastern	16.2		
139	Walnut/Craig Rd. (1)			
139	Washburn/Pecos			
139	Walnut/Craig Rd. (2)			
139	Craig Rd/Statz			
170	Lake Mead/Mohave (South Lot)			
170	Lake Mead/Mohave (North Lot)			
162	Decatur/Beltway(1)	28.9		

Table B-4

Field sampling summary

BOOK #	LOCATION	PHOTO VEG Cover (%)	VISUAL (yes=1, no=0)	Notes
162	Decatur/Beltway (2)	28.9		
162	Decatur/Sunset (A)	28.9		
162	Decatur/Sunset (B)	28.9		
162	Arville/Sunset (A)	28.9		
162	Arville/Sunset (B)	28.9		
162	Hinson/Industrial Park	28.9		
124	Willus/Ann			
124	Decatur/Ranch House			
124	Decatur/Centennial Pkwy			
124	Willus/Ranch House			
124	Willus/Ranch House (C)			
125	Grand Canyon/Bath (A)			
138	Fort Apache/Lone Mountain			
138	Bonita Vista/Stange			
140	Cheyenne/Lamb			
140	Alto/Nellis			
140	Lamont/Carey			
140	Lamb/Carey			
139	Lone Mountain/Clayton			
139	Craig/Ruselier			
139	Simmons/Lone Mountain			

Table B-5

Orthophotos examined manually for vegetative coverage				
book	township, S	range, E	section	percent coverage
139	20	61	33	3.9
139	20	61	34	1.7
140	20	62	33	1.7
140	20	62	34	5.7
140	20	62	35	1.3
160	21	63	33	9.8
161	21	62	10	12.7
161	21	62	16	41.4
161	21	62	23	26.6
161	21	62	26	39.6
161	21	62	27	12.8
161	21	62	31	11.1
161	21	62	32	11.6
161	21	62	33	5.6
161	21	62	34	4.5
161	21	62	35	9.0
161	21	62	36	30.1
162	21	61	3	10.5
162	21	61	7	21.6
162	21	61	8	9.2
162	21	61	10	51.2
162	21	61	15	5.6
162	21	61	21	7.8
162	21	61	23	12.0
162	21	61	25	23.8
162	21	61	26	7.0
162	21	61	27	5.9
162	21	61	29	17.5
162	21	61	30	4.6
162	21	61	31	28.9
162	21	61	32	3.4
162	21	61	33	1.2
162	21	61	34	1.7
162	21	61	35	1.8
162	21	61	36	16.2
163	21	60	3	0.0
163	21	60	4	0.2
163	21	60	9	1.0
163	21	60	17	0.0
163	21	60	18	0.0
163	21	60	20	0.0
163	21	60	21	0.8
163	21	60	25	0.9
163	21	60	28	23.1
164	21	59	11	3.8
164	21	59	12	1.1
164	21	59	30	NA
176	22	60	10	1.3
176	22	60	11	1.5

Table B-5

Orthophotos examined manually for vegetative coverage				
book	township, S	range, E	section	percent coverage
176	22	60	27	1.4
178	22	62	32	0.3
178	22	62	33	NA
179	22	63	5	4.3
179	22	63	6	7.3
minimum				0.0
arith mean				9.73
standard dev				11.78
maximum				51.20
geom mean - 1 std dev				0.95
geom mean				4.64
geom mean + 1 std dev				22.66
number of sections exceeding 20% coverage				9
number of sections analyzed				52

APPENDIX C

Section III

Estimation of PM_{10} vacant land emissions factors for Unstable, Stable and Stabilized lands using data from 1995 and 1998-1999 UNLV wind tunnel studies of vacant and dust-suppressant treated lands

January 16, 2001 – Second Final Report

Estimation of PM-10 vacant land emissions factors for Unstable, Stable and Stabilized lands using data from 1995 and 1998-1999 UNLV wind tunnel studies of vacant and dust-suppressant treated lands

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Second Final Report

for

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January 16, 2001

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The Clark County Health District, Air Quality Division, provided the impetus and the funding for the first wind tunnel field study in 1995, and also funded the 1998-1999 wind tunnel study of the effectiveness of dust suppressants. The Health District also provided 1999 wind field data and 1999 dust permit data that greatly facilitated computation of the valley-wide estimates. The contributions of Michael Naylor, Cheryl McDonnell-Canan, Lew Wallenmyer, Mike Sword, Femi Durosimini, Mickey Palmer, Monte Symons, and Cyndy Mikes are especially appreciated.

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Any errors or omissions in this report are the sole responsibility of the principal author, David James.

Introduction

This report:

1. Explains the methodology and uncertainties behind calculation of fluxes of wind-eroded PM-10 (emission factors) using wind tunnel measurements carried out by UNLV in 1995 and 1998-1999, and

2. Contains emission factor data developed by UNLV for unstable (disturbed or weak covering), stable (undisturbed or strong covering) and stabilized (treated with dust suppressants) vacant lands. The emission factors presented here were used earlier in UNLV's computations of Valley-wide PM-10 vacant land emissions.

In this report, the wind tunnel volumetric flow rates, PM-10 initiation velocities, erosion velocities and TSI PM-10 concentrations are converted to PM-10 fluxes (emission factors) in tons/acre/hour, and PM-10 initiation and erosion velocities extrapolated to z = 10 meters. The 1995 wind tunnel field study sampling locations and sampling methods are described. Methods used in the 1998-99 wind tunnel dust suppressant study are described and compared to the 1995 wind tunnel study.

This is the second final report developed for this Clark County Comprehensive Planning-funded project and the fourth report created for this project. The report dates and titles are:

January 16, 2001	Estimation of PM-10 vacant land emissions factors for Unstable, Stable and Stabilized lands using data from 1995 and 1998-1999 UNLV wind tunnel studies of vacant and dust-suppressant treated lands. *Second final report.*
September 13, 2000	Estimation of Valley-Wide PM-10 emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands. *Final Report*
March 28, 2000	Estimation of Valley-Wide PM-10 Emissions using UNLV 1995 wind tunnel measurements, revised vacant land classifications, and GIS-based mapping of vacant lands. *Supplemental Task: Estimation of stabilized land PM-10 emissions using data from 1998-1999 UNLV wind tunnel study of PM-10 emissions from different dust suppressants*
February 22, 2000	Estimation of Valley-Wide PM-10 Emissions using UNLV 1995 wind tunnel measurements, revised vacant land classifications, and GIS-based mapping of vacant lands

This report is divided into 10 sections that, taken together, provide a road map through the wind tunnel data, from the PM-10 and flow measurements in the field to the statistical summaries of the emission factor data, classified by wind speed category and major soil group.

Section 1 provides information about the locations and stability classifications of the 1995 wind tunnel sampling sites, 1995 wind tunnel field test methods, and mass balances. It also provides a comparison of the 1995 test methods to the 1998-1999 test methods, an uncertainty analysis, the 1995 repeatability study, and flow rate corrections.

Section 2 tabulates the soil group and stability classifications, 10 meter velocities, TSI measured PM-10 concentrations, and tunnel volumetric flow rates for each 1995 wind tunnel test run. TSI concentrations and tunnel volumetric flow rates were used to compute individual, non-spike corrected fluxes in $mg/m^2/min$ and ton/acre/hour. The equations for computing fluxes are presented.

Section 3 tabulates 1995 wind tunnel individual and cumulative spike-corrected fluxes. The method for correcting PM-10 fluxes for the effects of the initial loose PM-10 "spike" is presented. Equations for computing cumulative fluxes and example calculations are presented. Non-corrected individual flux data from Section 2 are used to compute spike-corrected individual and cumulative flux data in Section 3.

Section 4 presents the methods for computing individual and cumulative spike masses from the 1995 study, and tabulates the resulting data. Spike areas presented in Section 3 are used with TSI concentrations and wind tunnel volumetric flow rates from Section 2 to compute results shown in Section 4.

Section 5 tabulates 10 meter erosion velocities from Section 2, cumulative flux data from Section 3 and the cumulative spike data from Section 4 by major soil group and stability classification. These data are used in Section C to compute emission factors classified by soil group and wind speed range.

Section A tabulates 10 meter erosion velocities from Section 2, cumulative flux data from Section 3 and the cumulative spike data from Section 4 by wind speed category for *unstable* lands, all soil groups, and presents the calculations of $\log_{10}$means and $\log_{10}$standard deviations for each wind speed range for which data are available.

Section B tabulates 10 meter erosion velocities from Section 2, cumulative flux data from Section 3 and the cumulative spike data from Section 4 by wind speed category for *stable* lands, all soil groups, and presents the calculations of $\log_{10}$means and $\log_{10}$standard deviations for each wind speed range for which data are available.

Section C presents summaries of the geometric mean emission factors and spike masses for unstable and stable lands, classified by wind speed range and major soil group. Data presented in these tables and figures constitute the emission factors that were employed to compute 1999 Valley-wide PM-10 emission estimates from vacant lands. Data from Section 5 were used in the computation of these results.

Section D presents statistical summaries of the aerodynamic roughness heights and PM-10 initiation velocities for each major soil group.

Section E presents comprehensive data the 1998-1999 wind tunnel emission factors from stabilized (treated with dust suppressant), surfaces. Data for each dust suppressant and test phase (Phase I, August - December, 1998; and Phase II, February - June, 1999), are presented. Computations of the weighted average fluxes (from 5 and 10 minute runs) and statistical summaries of the emission factors, averaged over all dust suppressants and classified by wind speed range, are presented. Plots of emission factor data are presented, some of which are plotted to the same scale as for stable and unstable lands, so that the relative magnitudes of the emission factors can be visually compared for different stability classifications.

Section 1 - Wind Tunnel Description, Field Methods and Uncertainty Analyses

1-A. Site selection (Table 1 and Figure 1-1)

Wind tunnel sites for the 1995 study were selected to provide uniform coverage in the urban core of Las Vegas. The approximate distribution of sites across the Valley is shown relative to major cross streets in Figure 1-1. The 1998-1999 dust suppressant study was conducted in the long-abandoned sludge beds at the City of Las Vegas Water Pollution Control Facility, located at the east end of Vegas Valley Drive next to Las Vegas Wash.

In the 1995 study, major cross streets and compass direction relative to the nearest intersection (i.e. North-east corner of Mountain Vista and Gold Dust) were recorded, and uncorrected global positioning system (GPS) coordinates were determined by a Magellan hand-held Global Positioning System unit, generally accurate to +/- 2 seconds of latitude and longitude (+/- 3 hundredths of a minute, approximately +/- 50 meters). When near the intersections of major north-south and east-west streets, the compass location relative to the intersection (example, north-east corner of Sahara and Walnut for WT006) was usually recorded. To determine major soil group, site GPS coordinates were manually mapped onto an enlarged version of the major soil group map from the 1985 Speck and McKay US Agricultural Research Service soil survey.

Photographs of the site were taken, including an area photograph (nearest landmarks) and a close-up of the soil surface under the working section of the tunnel. Two digit numeric site codes were assigned to each tested location. A total of 85 sites were tested in a three-month period from May 31, 1995 until September 1, 1995.

1-B. Methods for determination of site stability

In 1995, site stability was determined by presence or absence of intact crust, by proportion of vegetation present (using an average from two 50-foot transects, counting vegetation every foot), and by evidence of human disturbance (tire tracks, trash, litter, evidence of recent earthmoving). Additionally, a surface soil sample was collected and subjected to conventional ASTM sieve analysis. Vegetation coverage and ASTM soil particle size distributions are available, but are not provided in this report.

Since the 1995 study was completed, new procedures for determination of stability of vacant lands have been proposed and adopted by ordinances or rules in Maricopa County, Arizona and by Clark County, Nevada. In late 1999, Clark County requested that the stability of the 1995 wind tunnel sites be re-evaluated using 1995 close up (generally from a distance of 2 feet) site photographs (most of which showed sheltering elements, rocks and cobbles) and the proposed Maricopa/Clark County rules. The 1995 site photos were evaluated by the 1999 UNLV field crew (which had been performing field stability classifications under the proposed Maricopa County rules) as to whether or not they would pass ball drop and threshold friction velocity (TFV) tests. The result of this re-estimation using the Maricopa/Clark County rules converted three 1995 "unstable" site designations to "stable," at Wind tunnel sites, WT058, WT059 and WT060. All other 1995 site stability designations were unchanged.

Table 1 contains 1995 test date, site cross street and compass corner locations, GPS coordinates, stability classification and major soil group information, sorted by Wind tunnel site designation. Stability designations are shown as a 1 (unstable) or 0 (stable) in Table 1.

1-C. Spatial and temporal variability field studies (Table 1A)
Several locations tested early in the summer season were visited later in the season in an attempt to determine temporal and small scale spatial variability. During the late season visit, the wind tunnel was operated at a location adjacent to the early season site visit (excavation of earth for sealing the tunnel flaps to the soil surface made it difficult to re-position the tunnel at exactly the same location. Because the tunnel was not run in exactly the same location, the late-season site revisits were given a new two-digit designation. One unstable site, WT031, was tested over a 6-day period at eight different locations (WT031-A through WT031-H) on a small lot on the east site of the Las Vegas Valley in an attempt to determine small-scale spatial variability. A concordance of early and late season site visits is shown in Table 1A.

1-D. Description of Wind Tunnel (Figures 1-2 and 1-3)

The UNLV-CCHD wind tunnel used in the 1995 field study and the 1998-99 dust suppressant study is a modification of the draw-through design developed by Duane Ono at Great Basin Unified Air Pollution Control District, Bishop, California. Modifications in the UNLV tunnel include a 6 inch diameter working section instead of 4 inch section, addition of a TSI Dust-Trak(r) PM-10 monitor in the riser section, use of heavy gauge plastic flaps and soil or draft tubes to seal the tunnel to the surface instead of sharp metal runners, and use of a rear air bypass to control averaging flow instead of a venturi and an electronic motor speed controller. Major components of the tunnel are shown schematically in Figure 1-2. Wind tunnel processes are diagrammed in Figure 1-3.

The working section of the tunnel is 6.00 inches wide x 6.00 inches high x 60 inches long. Additionally, not shown in the figure, there is a 60-inch long flow-conditioning section installed ahead of the working section of tunnel with a honeycomb flow diffuser at the front end, giving incoming air 10 diameters to develop a turbulent profile before it passes into the tunnel working section.

The working section is sealed to the soil surface with 3-inch wide heavy gauge flexible PVC flaps. In 1995, the flaps were sealed to the surface with soil and rock excavated from the site being tested. In 1998-1999, to allow measurement of much lower fluxes on stabilized surfaces treated with dust suppressants, the flaps were sealed to the surface with closed cell foam and 2-inch diameter 6 foot long cloth draft tubes filled with sand.

A Dwyer 90-degree pitot tube (labeled "profiling pitot tube" in Figure 1-2) is located in the working section, attached to a height adjusting system that allows the tube to be set at a logarithmic series of elevations above the soil surface. The pitot tube is connected in parallel to two Magnehelic(r) pressure gauges, one reading from 0.00 to 0.20 inches of water, and the other reading from 0.00 to 1.00 inches of water.

As air passes through the working section of the tunnel, it entrains particulates from the soil surface (Figure 1-3), and the particulates are conveyed in the air flow through the working section to the divergence section. The expansion section contains a front bypass air inlet, located on the top of the section. The size of the front bypass opening is controlled by a sliding damper. The purpose of this front bypass air inlet is to control the volumetric flow rate of air in the working section, and thus control the erosion velocity. Air flow rate in the working section is lowest when the damper is wide open, and highest when the damper is closed. In field work the damper is adjusted to give a specified centerline pitot tube reading for a particular erosion run.

The expansion section is connected to a rectangular metallic box called the elutriation chamber (Figure 1-2). As air flow enters the elutriation chamber and slows down, the chamber captures particles with diameters greater than 70 microns physical diameter (Figure 1-3). A door at the back of the elutriation chamber allows it to be cleaned after each wind tunnel run.

Air flow leaves the elutriation chamber through a 6-inch diameter PVC pipe section, called the riser (Figure 1-2). Air velocity in the riser is generally sufficient to suspend soil particles with physical diameters less than 70 microns (Figure 1-3).

As air proceeds up the riser, a small sample is pulled off by the TSI Dust-Trak PM-10 monitor. The Dust-Trak(r) measures PM-10 concentrations in the range 0.000 to 19.99 mg/m^3. The instrument uses attenuation of a laser diode light beam to estimate PM-10 concentration. Air is drawn into the unit at a fixed rate of 1.70 liters per minute by a positive displacement pump, and passes through a built-in cyclonic separator (50% aerodynamic cut size, 10 microns) before proceeding into a chamber where the suspended particle stream breaks the light beam. The units are factory calibrated against a standard dust suspension. The manufacturer (TSI) recommends annual servicing and recalibration. UNLV's first unit (Unit A) was acquired in the Spring of 1995, and was used during the summer 1995 study with its original factory calibration. Prior to the start of the 1998-1999 wind tunnel study, Unit A was shipped to the factory for calibration. A second TSI Dust-Trak(r), Unit B, acquired in 1999, was employed at the end of the 1998-1999 study, when Unit A was returned to the factory for calibration.

After passing the TSI sampling port, particle-laden air in the riser makes a 90-degree turn and passes by the sampling orifice of the cyclone, filter, venturi and fan system (Figure 1-2). The venturi, fan motor and filter housing, from a standard General Metal Works PM-10 atmospheric sampler, is equipped with a venturi orifice designed to choke air flow through sonic velocity, and thus make air flow independent of temperature and pressure. Design flow rate is 40 cubic feet per minute. The cyclone was built by UNLV to have a 50% physical cut size of 6.5 microns for approximately spherical particulates of density approximately 2.5 $grams/cm^3$. This physical diameter corresponds to an aerodynamic diameter of 10 microns for particles of density 1.0 gram/cm^3 for particles settling in Stokesian flow. After passing through the cyclone, air is drawn through a glass fiber filter for particle trapping before exhaust to the atmosphere (Figure 1-3).

After passing the cyclone orifice, the remaining flow proceeds through a reducing coupling into a 4-inch diameter flexible tube, and then enters the velocity box (Figure 1-2). The velocity box is a 6-foot long 4-inch diameter PVC pipe that is used for measurement of the total volumetric flow rate in the wind tunnel. A Dwyer averaging pitot tube is located 40 inches (10 diameters) downstream of the entrance to the velocity box. Pressure drop across this pitot tube is measured by a Dwyer solid-state pressure logger with a range of 0.00-9.99 inches of water, a resolution of 0.01 inches of water, and an accuracy of 2%.

After passing the averaging pitot tube, flow enters the rear-bypass air inlet (Figures 1-2 and 1-3) . The rear by-pass air inlet is adjusted to give a specified pressure drop in the averaging pitot tube, so that the flow sampling at the TSI and the cyclone is nearly isokinetic. Typical pressure drop values were usually in the range of 3.00-3.30 inches of water.

After leaving the rear bypass, air is drawn into the fan section and exhausted from the system (Figures 1-2 and 1-3). The Dayton 10 5/8" diameter fan is powered by a 1 horsepower Dayton electric motor, turning approximately 3000 rpm. At field sites, the electric motor is powered by a 5 horsepower portable AC generator.

1-E. Wind Tunnel Air flow balance (Figures 1-4 and 1-5)

Intakes and withdrawals of air in the wind tunnel are graphically depicted in Figure 1-4. Air is drawn into the wind tunnel at front end of the working section and at the front bypass air inlet. The combined flow proceeds through the riser, where a small subsample is withdrawn at 1.7 liters/minute by the TSI Dust-Trak(r). A 40 cfm sample is then withdrawn from riser by the sampling tube connected to the cyclone, filter, venturi and filter fan subsystem. The flow then proceeds down the flexible PVC tube to the velocity box, where it is measured by the averaging pitot tube, and then blended with air from the rear bypass air inlet before entering the fan and being exhausted from the system.

Assuming negligible air density changes in the tunnel, air mass flow rate balances can be converted into air volumetric flow rate balances. The corresponding volumetric air flow balance equations are shown in Figure 1-5. The key result is equation g, which shows that the sum of two unknown flow rates, Qdil + Qwork, is equal to the sum of two known or measured flows, Qavg +Qcyc,

(Equation 1-5g) $$Qdil + Qwork = Qavg + Qcyc$$

where:

Qdil	is the flow rate entering at the front bypass air inlet
Qwork	is the flow rate entering through the working section of the tunnel
Qavg	is the flow rate measured by the averaging pitot tube in the velocity box
Qcyc	is the known flow rate passing through the venturi in the cyclone-filter set.

This relationship will be used in section F to estimate flux rates from the soil surface.

1-F. Wind tunnel PM-10 mass balance and PM-10 flux calculation

Intakes and withdrawals of particulates are graphically depicted in Figure 1-6. The corresponding mass balance equations are shown in Figure 1-7. The term "mdot" in Figures 1-6 and 1-7 corresponds to a particulate mass flow rate in the system.

The purpose of Figure 1-7 is to lead the reader through the mathematics of the derivation of the PM-10 mass flow rate (shown as mdotsoil) from the soil surface in the tunnel working section. PM-10 mass balances and air flow balances from Figure 1-5 are used to develop am equation that estimates PM-10 flux rate from the soil surface in terms of known or measured quantities.

Figure 1-7, equation p shows the key relationship that is derived from the mass balance:

(Equation 1-7p) fluxsoil = [(Qavg + Qcyc) x (Crise - Cbak)] / [Tunnel floor area]

where:

fluxsoil	is mass rate per unit area of PM-10 eroded from the soil surface in units of mass/area/time, generally milligrams per square meter per minute and tons per acre per hour.
Qavg	is the flow rate measured by the averaging pitot tube in the velocity box
Qcyc	is the known flow rate passing through the venturi in the cyclone-filter set
Crise	is the PM-10 concentration measured by the TSI Dust-Trak(r) in the tunnel riser
Cbak	is the PM-10 atmospheric background concentration, typically assumed to be 20 or 30 $\mu g/m^3$
Tunnel floor area	is the exposed area under the working section of the tunnel, 2.5 ft^2

Measured, known or assumed quantities from each wind tunnel run are substituted into 1-7p to compute the wind tunnel flux. An example calculation of the flux is shown in Figure 1-8.

Fluxes computed using this methodology are tabulated in Section 2 of this report. These fluxes are not corrected for the initial "spike" of loose PM-10 that was recorded by the TSI Dust Trak(r) in many of the wind tunnel field study runs.

Spike corrections are computed and explained in Section 3 of this report.

1-G. Wind Tunnel Test procedure - 1995 field study

The wind tunnel was transported disassembled in the back of a medium size (Dodge Dakota) pick-up truck, and assembled at each site. A flat area at least 15 feet long x 5 feet wide was needed for assembly of four rigidly-connected units, the tunnel flow conditioning section, tunnel working section, elutriation chamber, and support stand for the cyclone-filter combination. Other components, attached with flexible PVC, could be arranged in a variety of locations behind the rigidly connected units. Soil was excavated from locations outside of the tunnel working section with hand trowels and shovels and deposited in a 2-3 inch thick layer on the flexible plastic flaps to form a seal to the surface.

After assembly, the ambient barometric pressure, atmospheric temperature and relative humidity were recorded, and the pressure gauges were zeroed. The rear bypass air inlet was set to measure a pressure drop of 3.20 inches of water to give a riser section flow velocity that was nearly isokinetic with the flow velocities of the cyclone and TSI Dust-Trak(r) sampling ports.

The TSI Dust-Trak(r) was turned on and set to measure instantaneous PM-10 concentration, with no logging of data to memory. The tunnel fans were turned on and the damper on the front bypass air inlet was closed until a "spike" of PM-10 exceeding 1 mg/m^3 was observed on the TSI display. Damper position was fixed at this point, and the velocity profile over the soil surface was determined by the profiling pitot tube. The tunnel fans were then turned off and the front bypass air inlet was opened all the way.

Barometric pressure, air temperature, and profiling pitot pressure drop data were entered into a Quick-BASIC(r) computer program on a laptop computer to determine the aerodynamic roughness and a corresponding set of pitot tube centerline pressure drops that would correspond to a range of three or four 10-meter erosion velocities.

For the first wind tunnel run, the TSI Dust-Trak(r) was then set to datalogging mode, the tunnel fans were turned on, and the bypass damper was closed until the indicated pressure drop from the pitot tube reached the first designated 10-meter erosion velocity. At this point, the Dust-Trak was set to begin recording one PM-10 concentration each second for 10 minutes.

The TSI display would blank at the end of the 10-minute period, and the tunnel fans were turned off. Dust captured in the elutriation chamber and cyclone was brushed into new, preweighed zip-lock plastic bags, and the glass fiber filter was changed. The tunnel was reassembled, and the sampling repeated in exactly the same location, at a higher indicated wind speed. For the first 49 wind tunnel sites (WT001 through WT049), the goal was to conduct three sampling runs per location at progressively higher wind-speeds. For sites WT050 through WT078, this was changed to four runs per location. at the request of Clark County Health District.

Samples collected in the elutriation chamber were brushed into clean, plastic bags at the end of each run and returned to the laboratory for weighing. Weight changes were determined in a Sargent-Welch electronic analytical balance with resolution of +/- 0.1 milligram (mg). These data are available, and were reported in the UNLV M.S. thesis by Joe Alvin Haun, but are not reported in this study.

Samples collected in the cyclone were brushed into clean, plastic bags at the end of each run and returned to the laboratory for weighing. Weight changes were determined in a Sargent-Welch electronic analytical balance with resolution of +/- 0.1 milligram (mg). These data are available, and were reported in the UNLV M.S. thesis by Joe Alvin Haun, but are not reported in this study.

Glass fiber filters were pre-conditioned in a constant relative humidity chamber, weighed, sealed flat in large plastic ziplock bags, handled with latex gloves when installed and removed from the PM-10 filter mount in the field. After sampling, they were returned to the lab and reconditioned to the same relative humidity and temperature, and then reweighed. Filter weights were determined to +/- 0.1 milligram in a Sargent-Welch electronic balance. Experience in both the 1995 and 1998-99 wind tunnel studies showed that, unless an unusually high PM-10 concentration was eroded from the soil surface, 10 minute wind tunnel sampling runs were of insufficient duration to obtain a detectable weight change on the glass fiber filters. For this reason, TSI Dust-Trak PM-10 data are the only values reported in this study. PM-10 filter data are available, and were reported in the UNLV M.S. thesis by Joe Alvin Haun.

1-H. Variations in wind tunnel field test methods and flux calculations for the 1998-1999 dust suppressant study

Changes in sampling techniques developed for the 1998-1999 dust suppressant study are described in this subsection.

1) Surface seals

In the 1995 study, soil was excavated from locations outside of the tunnel working section with hand trowels and shovels and deposited in a 2-3 inch thick layer on the flexible plastic flaps to form a seal to the surface. In the 1998-1999 study, this approach was not found to work on the dust-suppressant-treated surfaces, as good surface seals could not be made with some of the crusted suppressant material, and cleaner sampling techniques were required. Instead, the tunnel flaps were placed on pad of flexible closed cell foam, and weighed down with 6-foot long, 3-inch diameter cloth tubes filled with sand.

2) Determination of aerodynamic roughness and velocity profile

During the 1995 study, PM-10 eroded in during first three minutes of low-velocity operation of the tunnel, was assumed to be small relative to the reservoir on the surface, and other than observing the first exceedance over 1 mg/m3, was not recorded by the TSI Dust-Trak(r). During the 1998-1999 dust suppressant study, it became apparent that the PM-10 reservoir on dust suppressant-treated surfaces was very limited, and the first three minutes operation during velocity profile determination was significantly depleting the reservoir. A revised sampling procedure was developed as a result of this realization.

The TSI Dust-Trak(r) was set to record PM-10 concentrations for a fixed period of five (5) minutes during the velocity profile determination. The tunnel was set to operate at a fixed centerline profiling pitot pressure drop during this initial 5-minute run. During this initial run, the velocity profile was measured and the fans and TSI were shut off exactly 5 minutes after they were started.

The aerodynamic roughness and corresponding wind velocity at 10 meters were then calculated with the Quick-BASIC(r) computer program. Then tunnel fans were then restarted, and tunnel was operated at exactly the same damper opening as in the 5 minute run, while the TSI logged PM-10 for 10 minutes. At the conclusion of the 10 minute run, the elutriation chamber and cyclone contents were swept into plastic bags, and the glass fiber filter was changed.

Fluxes obtained during the 1998-1999 sampling were then computed as a weighted average of the 5 minute (weight 1/3)and 10 minute (weight 2/3) runs.

3) Flux (emission factor) calculations

As discussed above, the wind tunnel was operated only one time in each place during the 1998-1999 dust suppressant testing study. In contrast, during the 1995 wind tunnel field study, the wind tunnel was operated for three or four times in each place at progressively increasing wind speeds, and cumulative fluxes were computed (see Sections 3 and 4 of this report for the computational methodology.

As a result, the flux values from Stabilized surfaces treated with dust suppressants are not cumulative, and the 1995 flux values from Unstable and Stable surfaces are reported as cumulative results.

There should be little effect of this difference in data processing at lower wind speeds (< 30 mph), where most of the 1995 fluxes are reported for run 1, and are, not cumulative.

4) Site sampling protocols

Since the dust suppressant-treated surfaces generally had very low reservoirs of PM-10, it was found after a few tests that multiple runs in one location at progressively higher wind speeds did not produce additional PM-10. The first 15 minutes of operation (5 minute run + 10 minute run) significantly depleted the treated surfaces of PM-10. As result, the tunnel was operated for only one run (a "run" being the 5 minute velocity profile determination followed by the 10 minute erosion experiment) in each location. The tunnel was moved to a different location for a subsequent run.

In Phase I, to assess effects of weathering, the tunnel was moved from one treated surfaced to another after one run on each surface. With a set of 10 treatments, and a productivity of 2-3 runs per day, each surface was revisited generally about once every 7-10 days. See Section E, Tables E12 through E.22 for Phase I sampling dates for each suppressant.

In Phase II, to assess spatial variability of PM-10 on each surface as the surface weathered, the tunnel was moved from one location to another on the same treated surface until a set of about 5 runs had been completed, and then moved to the next surface. Each treated surface was visited about three times during Phase II. See Section E, Tables E.2 through E.11, for Phase II sampling dates for each suppressant.

Wind tunnel testing during each 1998-1999 dust suppressant testing Phase took place over a four to five month period, with many visits to the same locations. During the 1995 field study, wind tunnel testing took place over a three month period, with very few visits to the same locations.

The following table summarizes differences between the 1995 field study and the 1998-1999 dust suppressant study

Feature	**1995 field study**	**1998-1999 study**
Surface seals	Site soil directly on flaps	open cell foam under flaps sand filled tubes over flaps
Aero roughness Velocity profile	3 minute, not logged by TSI	5 minutes, logged by TSI used in flux calculations
PM-10 spike velocity	damper closed until spike observed	too little PM-10 not performed
Repeat runs in one place	Yes, three or four	No, only one per test location
Emission factors	Computed directly from 10 minute runs	Weighted average of 5 and 10 minute runs
Emission factors	Cumulative at higher wind speeds, accounting for earlier runs in same place. Many runs > 30 mph	Not cumulative Few runs > 30 mph

1-I. Uncertainty analysis of wind tunnel measurements

A complete uncertainty analysis of wind tunnel measurements was developed for this report. Uncertainties for derived quantities were determined as the square root of the sum of the squares of uncertainties of directly measured values, using the following formula.

For a quantity, X, that is a function of parameters A, B, C . . .

I.a) $wX = \{ [(\delta X/\delta A)wA]^2 + [(\delta X/\delta B)wB)]^2 + [(\delta X/\delta C)wC)]^2 + \ldots \}^{1/2}$

where $\delta X/\delta A$, $\delta X/\delta B$, $\delta X/\delta C$, etc. represent the partial derivatives of X with respect to A, B, C, etc. respectively, and

*w*A, *w*B, *w*C, etc., represent the experimental uncertainties of the parameters A, B, C, etc. respectively

The partial derivatives represent the rate of change of the quantity X with respect to each parameter, and can be thought of as "weights" on the uncertainties.

For example, for computation of gas density, $\rho = [P\ MW] / [R\ T]$

I.b) $w\rho = \{ [(\delta\rho/\delta P)wP]^2 + [(\delta\rho/\delta MW)wMW)]^2 + [(\delta\rho/\delta R)wR)]^2 + [(\delta\rho/\delta T)wT)]^2 \}^{1/2}$

When the partial derivatives are symbolically determined and substituted into the equation, and the result is divided by the formula for ρ, the following symbolic relationship for relative uncertainty is obtained:

I.c) $w\rho/\rho = \{ [wP / P]^2 + [wMW / MW]^2 + [-wR/R]^2 + [-wT/T)]^2 \}^{1/2}$

Values of P, MW, R and T, and values of the uncertainties wP, wMW, wR, and wT, may be substituted into equation I.c to compute the relative uncertainty of gas density. For example, for

P = 0.920 atm	uncertainty, wP = 0.00167 atm
(from P = 27.53 inches Hg,	uncertainty, wP = 0.05 in Hg)
MW = 28.9 g/gmole	uncertainty, wMW = 0.2 g/gmole
R = 0.08206 atm-L/mole/°K	uncertainty, wR = 0.0001 atm-L/mole/°K
T = 294 °K	uncertainty, wT = 0.55 °K

$$w\rho/\rho = \{ [0.00167 / .920]^2 + [0.2 /28.9]^2 + [-.0001/.08206]^2 + [-.55/294)]^2 \}^{1/2}$$
$$w\rho/\rho = \{ 5.62\text{x}10^{-5} \}^{1/2} = 7.50\text{x}10^{-3}$$

and $\rho = [(0.92)\ (28.9)] / [\ (0.08206)\ (294)\ ] = 1.100\ kg/m^3$,

giving $w\rho = 7.50 \times 10^{-3} \times 1.100\ kg/m^3 = 0.008\ kg/m^3$.

In this study, uncertainties were computed for gas density, centerline velocity, 10-meter velocity, averaging pitot velocity and tunnel volumetric flow rate, and PM-10 flux.

Tables 1B through 1E present uncertainty results for quantities used in determination of the PM-10 emission factors

Table	**Parameter**	**Estimated relative uncertainty**	
		Worst case	**Best case**
1B	air density	no data	0.75%
1C	centerline velocity	13%	4%
1C	10 meter velocity	17%	12%
1D	tunnel volumetric flow rate	6%	4%
1E	tunnel floor area	no data	0.50%
1E	others	see Table 1E and Tables 1F and 1G	
1F	PM-10 flux - low riser flow uncert	71%	7%
1G	PM-10 flux - high riser flow uncert	71%	10%

Tables 1F and 1G present uncertainty results for PM-10 emission factors (flux in ton/acre/hr) for several combinations of riser flow uncertainty and PM-10 concentration.

When the relative uncertainty of riser flow rate is low (4%), and with PM-10 background uncertainty of 10 μg/m^3, the following emission factor uncertainty results are obtained. Corresponding combinations displayed in Table 1F are underlined. * = not physically real.

Riser PM-10 concentration	**40**	**200**	**1000**
Riser PM-10 uncertainty	**μg/m^3**	**μg/m^3**	**μg/m^3**
2 μg/m^3	<u>51%</u>	7%	4%
6 μg/m^3	<u>58%</u>	8%	4%
10 μg/m^3	<u>71%</u>	<u>9%</u>	4%
20 μg/m^3	112%	<u>13%</u>	5%
50 μg/m^3	*	<u>29%</u>	<u>7%</u>
100 μg/m^3	*	56%	<u>11%</u>
200 μg/m^3	*	*	<u>21%</u>

When the relative uncertainty of riser flow rate is high (9%), with a PM-10 background uncertainty of 10 μg/m^3, the following emission factor uncertainty results are obtained. Corresponding combinations displayed in Table 1G are underlined. * = not physically real.

Riser PM-10 concentration	**40**	**200**	**1000**
Riser PM-10 uncertainty	**μg/m^3**	**μg/m^3**	**μg/m^3**
2 μg/m^3	<u>52%</u>	11%	9%
6 μg/m^3	<u>59%</u>	11%	9%
10 μg/m^3	<u>71%</u>	<u>12%</u>	9%
20 μg/m^3	112%	<u>15%</u>	9%
50 μg/m^3	*	<u>30%</u>	<u>10%</u>
100 μg/m^3	*	57%	<u>14%</u>
200 μg/m^3	*	*	<u>22%</u>

The above tables show that flux (emission factor) relative uncertainties tend to plateau at the riser flow rate uncertainty for conditions where the relative uncertainty in PM-10 riser concentration is small (low fluctuations and a high average PM-10 concentration). This corresponds to physical conditions where the stochastic fluctuations in the TSI-measured PM-10 signal are small.

Relative uncertainties in flux estimates are highest for conditions where the riser PM-10 concentration is low and uncertainties in riser and background PM-10 concentrations are high. Physically, this corresponds to occasions when the tunnel is measuring fluxes from stabilized surfaces that generate low amounts of PM-10.

1-J. 1995 repeatability study

In late 1995, a repeatability study was conducted with the portable wind tunnel in an effort to estimate the inherent variability of its particulate measurements.

About cubic feet of soil were collected in five 5-gallon plastic buckets from WT078, an unstable site with one of the highest measured PM-10 production rates, located on the east side of the Las Vegas Valley near the intersection of Mountain Vista and Gold Dust. Bucket contents were thoroughly mixed prior to application.

A one-inch thick, one foot wide, eight foot long, uniform layer of soil was placed on a level concrete pad in the utility yard of the UNLV College of Engineering, a site partially shielded from the wind by a 10-foot high wall. The top surface was smoothed with flat cardboard, and then indented with about 1/8" of surface relief with corrugated cardboard. The cardboard was removed and the portable wind tunnel was placed on the soil, with the flaps sealed to the surface with more soil from the site. The wind tunnel was operated at a fixed flow rate, and PM-10 filter, cyclone, saltation, and TSI measurements were obtained.

Eight controlled runs were conducted at the same tunnel flow rate, with each run conducted on a new batch of soil. (Soil from the previous run was swept up before new soil was applied to the concrete pad). Results of these eight controlled are shown in Table 1H.

The average TSI PM-10 mass collected was 46.2 ug, with a standard deviation of 21.0 ug, giving a coefficient of variation (CV) of 21.0/46.2 = 0.45, or 45%, for an average riser concentration of 2.72 mg/m^3 (2,720 µg/m^3). This CV was lower than for the other collected size fractions, but higher than the theoretical uncertainty estimated for single measurements of high riser PM-10 concentrations in Tables 1F and 1G.

1-K. Flow calculation error in original 1995 data

Average wind tunnel flows for each 1995 run were re-computed in late 1999 for this study. This occurred because a flow calculation error was uncovered in the summer of 1998 during a refit of the portable wind tunnel for the 1998-1999 dust suppressant study. The source of the calculation error was incorrect interpretation by UNLV of units for a pitot tube constant in a manufacturer-supplied guidance document for use of the averaging pitot tube. The averaging pitot tube was used to calculate average volumetric flow through the wind tunnel, and average volumetric flow is used to calculate PM-10 fluxes from the tested soil surfaces.

Use of corrected units for the pitot tube constant reduced computed flow rates by a factor of about 3, and correspondingly reduced computed fluxes by a factor of about 3. Upon discovery of the calculation error, all 1995 fluxes were recalculated in late 1999 and early 2000.

Only the correct, recalculated average tunnel flows and recalculated fluxes are reported in this document. Flux rates reported by UNLV to Clark County in 1996, and used in the Clark County 1996 PM-10 SIP, were too high by a factor of about two to three. Data in this report reflect the use of the correct, recalculated average flow rate, and emission factors in this report supersede emission factors reported by UNLV in 1996.

Table 1 - 1995 Wind tunnel field study sampling locations

Date	Site #	Cross streets	Intersection corner	GPS West Longitude deg and hundredths of minutes +/-.05'	GPS North Latitude +/-.05'	Unstable (y=1, n=0)	Major soil group
5/31/95	WT001	Schuster & Frias	NW	115°11.54'	36°00.22'	0	3
6/01/95	WT002	Lake Mead Drive & Van Wagenan	SE	114°59.86'	36°02.08'	0	6
6/01/95	WT003	Boulder Highway & Snap	SW	114°59.94'	36°03.15'	0	6
6/07/95	WT004	Lake Mead & McDaniel	NW	115°07.30'	36°11.92'	0	8
6/08/95	WT005	Mitchell & Walnut	NW	115°05.62'	36°14.69'	1	8
6/08/95	WT006	Sahara & Walnut	NE	115°05.22'	36°08.72'	0	8
6/09/95	WT007	Craig & Losee	NW	115°06.93'	36°14.42'	0	5
6/09/95	WT008	Craig & Lamb	SW	115°04.90'	36°14.39'	0	8
6/09/95	WT009	Craig & Lamont	SE	115°03.96'	36°14.28'	0	8
6/19/95	WT010	Hollywood & Nellis Air Force Base	NE	115°01.46'	36°13.49'	0	8
6/19/95	WT011	Alto & Mt Hood	NE	115°02.16'	36°12.64'	0	6
6/20/95	WT012	Alto & Lamb		115°05.87'	36°12.69'	0	2
6/20/95	WT013	Christy & Carey	NE	115°03.27'	36°12.32'	1	8
6/21/95	WT014	LV Blvd & Belmont		115°06.28'	36°12.59'	0	8
6/21/95	WT015	Carey & Revere	NW	115°09.11'	36°12.27'	0	2
6/21/95	WT016	Harmon & Cameron	SW	115°12.15'	36°16.48'	1	2
6/22/95	WT017	Alexander & 5th		115°08.00'	36°13.96'	0	2
6/22/95	WT018	Clayton & Alexander		115°10.19'	36°13.92'	1	2
6/26/95	WT019	Valley View & Alexander	NE	115°11.81'	36°13.89'	1	2
6/26/95	WT020	Simmons & Carey	NW	115°10.74'	36°12.20'	1	8
6/27/95	WT021	Maverick & Alexander	SE	115°13.77'	36°13.86'	1	2
6/27/95	WT022	Decatur & Rancho	SW	115°12.17'	36°12.39'	1	2
6/27/95	WT023	Smoke Ranch & Steinke (US-95)		115°14.36'	36°12.15'	0	5
6/28/95	WT024	Martin Luther King & Alta	NW	115°09.75'	36°10.01'	1	9
6/28/95	WT025	Charleston & Torrey Pines	SW	115°14.20'	36°09.49'	0	2
6/29/95	WT026	Lake Mead Drive & Gibson	SE	115°01.75'	36°01.84'	0	6
6/29/95	WT027	Gibson & Boulder Highway		115°01.45'	36°04.56'	0	6
6/30/95	WT028	Racetrack & Powerline				0	6
6/30/95	WT029	Equestrian & Foothills		114°55.50'	36°00.74'	1	3
6/30/95	WT030	Racetrack & Drake		115°56.91'	36°02.39'	0	6

Table 1 - 1995 Wind tunnel field study sampling locations

Date	Site #	Cross streets	Intersection corner	GPS West Longitude [illegible]	GPS North Latitude [illegible]	Unstable (y=1,n=0)	Major soil group
7/05/95	WT031-A	Washington & Bledsoe	NW	115°03.31'	36°10.92'	1	8
7/05/95	WT031-B	Washington & Bledsoe	NW	115°03.31'	36°10.92'	1	8
7/05/95	WT031-C	Washington & Bledsoe	NW	115°03.31'	36°10.92'	1	8
7/06/95	WT031-D	Washington & Bledsoe	NW	115°03.31'	36°10.92'	1	8
7/07/95	WT031-E	Washington & Bledsoe	NW	115°03.31'	36°10.98'	1	8
7/10/95	WT031-F	Washington & Bledsoe	NW	115°03.30'	36°10.89'	1	8
7/10/95	WT031-G	Washington & Bledsoe	NW	115°03.30'	36°10.89'	1	8
7/10/95	WT031-H	Washington & Bledsoe	NW	115°03.26'	36°10.92'	1	8
7/06/95	WT032	Alta & Valley View		115°11.49'	36°10.01'	1	2
7/07/95	WT033	Hollywood & Bonanza	NW	115°02.03'	36°10.69'	0	5
7/12/95	WT034	Rainbow & Raven	NW	115°14.72'	36°01.36'	0	2
7/12/95	WT035	Gary & Seeliger		115°17.84'	36°00.72'	0	2
7/13/95	WT036	Blue Diamond & Warbonnet	SW	115°15.95'	36°00.98'	0	2
7/13/95	WT037	Rainbow & Windmill	NW	115°14.99'	36°02.58'	0	2
7/14/95	WT038	Windmill & Ft Apache	NE	115°17.76'	36°02.47'	0	2
7/14/95	WT039	Buffalo & Robindale	NW	115°15.64'	36°03.01'	0	2
7/14/95	WT040	Buffalo & Sunset	NW	115°15.86'	36°04.22'	0	2
7/18/95	WT041	Sunset & Durango	NE	115°16.75'	36°04.34'	0	2
7/18/95	WT042	Sunset & Ft Apache	NE	115°17.90'	36°04.29'	0	2
7/18/95	WT043	Cameron & Oquendo	SW	115°12.31'	36°04.51'	1	2
7/19/95	WT044	Patrick & Torrey Pines	SW	115°14.15'	36°04.49'	0	2
7/19/95	WT045	Decatur & Agate	SE	115°12.39'	36°01.49'	0	2
7/20/95	WT046	Arville & Robindale	NW	115°11.95'	36°03.03'	0	3
7/20/95	WT047	Spencer & Sunset	SE	115°07.54'	36°04.23'	0	7
7/24/95	WT048	Carey & Revere	NW	115°09.23'	36°12.68'	0	2
7/24/95	WT049	Carey & Revere	NW	115°09.22'	36°12.31'	0	2
7/26/95	WT050	Carey & Revere	NW	115°09.23'	36°12.33'	1	2
7/25/95	WT051	Carey & Simmons	NW	115°10.74'	36°12.22'	0	8
7/25/95	WT052	Carey & Simmons	NW	115°10.79'	36°12.27'	0	8
7/26/95	WT053	Carey & Simmons	NW	115°10.79'	36°12.27'	1	8

Table 1 - 1995 Wind tunnel field study sampling locations

Date	Site #	Cross streets	Intersection corner	GPS West Longitude deg and hundredths of minutes +/-.005'	GPS North Latitude +/-.005'	Unstable (y=1,n=0)	Major soil group
7/27/95	WT054	Cameron & Harmon	SE	115°12.16'	36°06.48'	1	2
7/27/95	WT055	Cameron & Harmon	SE	115°12.17'	36°06.51'	1	2
7/28/95	WT056	Post Office		115°07.31'	36°11.90'	1	8
7/28/95	WT057	Post Office		115°07.34'	36°11.89'	1	8
7/31/95	WT058	Martin Luther King & Alta	NW	115°09.77'	36°10.00'	0	9
8/01/95	WT059	Martin Luther King & Alta	NW	115°09.75'	36°10.01'	0	9
8/01/95	WT060	Martin Luther King & Alta	NW	115°09.70'	36°10.01'	0	9
8/02/95	WT061	Craig & Losee	NE	115°06.87'	36°14.44'	1	5
8/02/95	WT062	Craig & Losee	NE	115°06.90'	36°14.38'	0	5
8/02/95	WT063	Craig & Losee	NE	115°06.93'	36°14.40'	0	5
8/04/95	WT064	Hollywood & Bonanza	NW	115°02.01'	36°10.66'	0	5
8/03/95	WT065	Hollywood & Bonanza	NW	115°01.98'	36°10.71'	0	5
8/03/95	WT066	Racetrack & Powerline		114°57.01'	36°01.33'	0	6
8/03/95	WT067	Racetrack & Powerline		114°56.99'	36°10.33'	0	6
8/08/95	WT068	Sahara & Summerlin	NW	115°19.66'	36°08.65'	0	2
8/08/95	WT069	Charleston & Rampart	NW	115°19.88'	36°09.84'	0	5
8/09/95	WT070	Hualapai & Anasazi	SW	115°19.65'	36°10.47'	0	5
8/14/95	WT071	Summerlin dirt road		115°20.03'	36°10.18'	1	5
8/14/95	WT072	Paradise & Sur Este	SE	115°08.38'	36°03.18'	0	7
8/15/95	WT073	Las Vegas Blvd & Warm Springs	NW	115°10.46'	36°03.48'	0	7
8/18/95	WT074	Las Vegas Blvd & Blue Diamond	SW	115°10.46'	36°03.48'	0	7
8/18/95	WT075	Patrick & Sandhill	SE			0	9
8/30/95	WT076	Jimmy Durante & Stephanie	SE			0	9
8/30/95	WT077	Mtn Vista & Gold Dust	SE			0	9
9/01/95	WT078	Mtn Vista & Gold Dust	SE			1	9

Table 1A - Index of repeat sites - 1995 wind tunnel field study

Cross street location	Early season date & site # (before 7/15/95)		Late season date & site # (after 7/15/95)	
Cameron & Harmon	6/21/95	WT016	7/27/95	WT054
			7/27/95	WT055
Carey & Revere	6/21/95	WT015	7/24/95	WT048
			7/24/95	WT049
Carey & Simmons - unstable	6/26/95	WT020	7/26/95	WT053
Carey & Simmons - stable			7/25/95	WT051
			7/25/95	WT052
Craig & Losee	6/9/95	WT007	8/2/95	WT061
			8/2/95	WT062
			8/2/95	WT063
Hollywood & Bonanza	7/7/95	WT033	8/4/95	WT064
			8/3/95	WT065
Martin Luther King & Alta	6/28/95	WT024	7/31/95	WT058
			8/1/95	WT059
			8/1/95	WT060
North Las Vegas Post Office			7/28/95	WT056
			7/28/95	WT057
Racetrack & Powerline	6/30/95	WT028	8/3/95	WT066
			8/3/95	WT067
Washington & Bledsoe	7/5/95	WT-031A		
	7/5/95	WT-031B		
	7/5/95	WT-031C		
	7/6/95	WT-031D		
	7/7/95	WT-031E		
	7/10/95	WT-031F		
	7/10/95	WT-031G		
	7/10/95	WT-031H		

Table 1B - Uncertainty analysis of air density calculations

Scenario	1	2	Cause of Uncertainty
	Low temp, Low press	High temp, high press	
Formula	$\rho = m/V = P\ MW / RT$	$\rho = m/V = P\ MW / RT$	
P inches Hg	27.53	28.43	
wP inches Hg	0.05	0.05	uncertainty in last digit of display
wP/P	1.82E-03	1.76E-03	
T °R	530.0	570.0	
wT °R	1.0	1.0	resolution of thermometer
wT/T	1.89E-03	1.75E-03	
MW g/gmole	28.9	28.7	
wMW g/gmole	0.2	0.2	variation in composition with relative humidity changes
wMW/MW	6.92E-03	6.97E-03	
R atm-L/gmole-K	0.08206	0.08206	
wR	0.0001	0.0001	+/- 1 in last digit
wR/R	1.22E-03	1.22E-03	
Sum of squares	5.62E-05	5.62E-05	
RMS uncertainty, $w\rho / \rho$	7.50E-03	7.50E-03	
RMS %	0.750%	0.750%	
density, ρ kg/m^3	1.100	1.049	
RMS $w\rho /2$ +/-kg/m^3	0.004	0.004	

Table 1C - Uncertainty analysis of centerline and 10 meter velocities

Scenario	1	2	Source of uncertainty
Instrument	profiling pitot tube	profiling pitot tube	
measurement	centerline ΔP	centerline ΔP	
Conditions	Best case	Worst case	
Formula	$V = k[2\Delta P/\rho]^{1/2}$	$V = k[2\Delta P/\rho]^{1/2}$	
Typical data			
ΔP, inches H20	0.160	0.160	
+/- uncert in meter reading	0.005	0.020	
cause	meter readability	cross wind fluctuation	see "cause" in each column
$w\Delta P$ inches H20 (= 2x fluct)	0.010	0.040	
$w\Delta P / \Delta P$	**6.25E-02**	**2.50E-01**	
ρ kg/meter^3	1.06	1.06	
$w\rho$ kg/meter^3	0.008	0.008	from density calculation, **Table 1B**
$w\rho / \rho$	**7.55E-03**	**7.55E-03**	
k (pitot constant)	1.000	1.000	
wk	0.020	0.020	variation in k for +/- 5° alignment error
wk/k	**0.020**	**0.020**	
Sum of squares $\Sigma(wX/X)^2$	1.39E-03	1.60E-02	
$wV/V = [\Sigma(wX/X)^2]^{1/2}$	3.73E-02	1.27E-01	
RMS uncert wV/V in %	**3.7%**	**12.7%**	V = centerline velocity at z1 = 7.6 cm
Scenario for U10	**1**	**2**	**Units & source of uncertainty**
Computed centerline velocity	9.2	9.2	m/sec
Uncertainty, wV	0.3	1.2	m/sec
Computed centerline velocity	20.6	20.6	mph
Uncertainty, wV	0.8	2.6	mph
sample aero roughness, zo	0.100	0.100	cm
uncertainty, wzo	0.010	0.010	cm, estimate from regression
centerline height, z1	7.60	7.60	cm
uncertainty, wz1	0.10	0.10	cm, wobble in pitot adjustment
wind measurement height, z2	1000	1000	cm
(RMS term wrt zo)^2	1.27E-02	1.27E-02	
(RMS term wrt z1)^2	9.23E-06	9.23E-06	
(RMS term wrt V, wV/V)^2	1.39E-03	1.60E-02	
RMS uncert w(U10)/(U10) %	**11.9%**	**17.0%**	
extrapolated U(10)	43.7	43.7	mph
uncertainty w(U10)	5.2	7.4	mph

Table 1D - Uncertainty analysis of averaging pitot velocity and tunnel volumetric flow rate

Scenario	**1**	**2**	**Source of uncertainty**
Instrument	averaging pitot tube	averaging pitot tube	
measurement	ΔP at 4 locations	ΔP at 4 locations	
Conditions	Best case	Worst case	
Formula	$V = k[2\Delta P/\rho]^{1/2}$	$V = k[2\Delta P/\rho]^{1/2}$	
Typical data			
ΔP, inches H20	3.200	3.200	
+/- uncert in meter reading	0.050	0.150	
cause	fan pulsation	cross winds	see "cause" in each column
wΔP inches H20 (= 2x fluct)	0.100	0.300	
wΔP / ΔP	**3.13E-02**	**9.38E-02**	
ρ kg/meter^3	1.06	1.06	
wρ kg/meter^3	0.008	0.008	from density calculation, **Table 1B**
wρ / ρ	**7.55E-03**	**7.55E-03**	
k (pitot constant)	0.600	0.600	
wk	0.020	0.020	variation in k for +/- 5° alignment error
wk/k	**3.33E-02**	**3.33E-02**	
Sum of squares $\Sigma(wX/X)^2$	1.37E-03	3.32E-03	
wV/V = $[\Sigma(wX/X)^2]^{1/2}$	3.70E-02	5.76E-02	
RMS uncert wV/V in %	**3.7%**	**5.8%**	
Computed velocity m/sec	24.7	24.7	
RMS uncertainty ± m/sec	0.9	1.4	
Computed velocity mph	55.2	55.2	
RMS uncertainty ± mph	2.0	3.2	
Pipe cross section	round	round	
Volumetric flow conversion	$Q = V(\pi\ diam^2 / 4)$	$Q = V(\pi\ diam^2 / 4)$	
pipe diam inches	4.00	4.00	
pipe diam feet	0.333	0.333	
pipe area ft^2	0.087	0.087	
velocity ft/min	4856	4856	
approximate wall correction	1.00	1.00	
flow rate ft^3/ min	424	424	
flow rate uncertainty ft^3/ min	16	24	

Table 1E - Sources of Uncertainty in flux calculation

Variable	Typical value	Source of uncertainty
Working section length, inches	60	
wLength inches	3.13E-02	measurement uncertainty, tape
wLength/Length	**5.21E-04**	
Working section width, inches	6	
wWidth inches	3.13E-02	measurement uncertainty, tape
wWidth/Width	**5.21E-03**	
Area ft^2	2.500	
wArea ft^2	1.31E-02	RMS error computed from length,width uncertainties
WArea/Area	**5.23E-03**	
Qavg cfm	424	
wQavg / Qavg	5.76E-02	Max fluctuation in meter reading from cross winds, fan oscillations
wQavg cfm	24	Computed from pitot probe fluctuations **(see Table 1D)**
Qcyc cfm	40.0	
wQcyc cfm	1.0	Assumed venturi choke flow uncertainty
wQavg/(Qavg+Qcyc)	**5.26E-02**	
wQcyc/(Qavg+Qcyc)	**2.16E-03**	
Crise ug/m3	1000	
Cbak ug/m3	20	
Crise - Cbak ug/m3	980	
wCrise ug/m3	200	If large, RMS error of fluctuating TSI signal. If small, uncertainty in
wCrise/(Crise-Cbak)	**2.04E-01**	individual TSI measurment. See flux calculation scenarios
wCbak ug/m3	10	Uncertainty in assumed clean air background PM-10
wCbak/(Crise-Cbak)	**1.02E-02**	

Table 1F - Flux calculation - uncertainty analysis scenarios for low riser flow uncertainty and several riser concentrations

Scenario	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
riser concentration	high	high	high	medium	medium	medium	low	low	low
riser concentr uncert	high	medium	low	high	medium	low	high	med	low
Typical site	unstable lands	unstable lands		stable lands	stable lands		stabilized lands	stabilized lands	stabilized lands
Surface condition							torn up		not torn up
Riser flow uncertainty	low	low	low	low	low	low	low	low	low
Data									
Area ft^2	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
wArea ft^2	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
wArea/Area	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03
Qavg cfm	468	468	468	468	468	468	468	468	468
Qcyc cfm	40	40	40	40	40	40	40	40	40
Qavg+Qcyc cfm	508	508	508	508	508	508	508	508	508
wQavg cfm	21	21	21	21	21	21	21	21	21
wQavg/(Qavg+Qcyc)	4.13E-02	4.13E-02	4.13E-02	4.13E-02	4.13E-02	4.13E-02	4.13E-02	4.13E-02	4.13E-02
wQcyc cfm	1	1	1	1	1	1	1	1	1
wQcyc/(Qavg+Qcyc)	1.97E-03	1.97E-03	1.97E-03	1.97E-03	1.97E-03	1.97E-03	1.97E-03	1.97E-03	1.97E-03
Crise ug/m3	*1000*	*1000*	*1000*	*200*	*200*	*200*	*40*	*40*	*40*
Cbak ug/m3	20	20	20	20	20	20	20	20	20
Crise - Cbak ug/m3	980	980	980	180	180	180	20	20	20
wCrise ug/m3	*200*	*100*	*50*	*50*	*20*	*10*	*10*	*6*	2
wCrise/(Crise-Cbak)	***2.04E-01***	***1.02E-01***	***5.10E-02***	***2.78E-01***	***1.11E-01***	***5.56E-02***	***5.00E-01***	*3.00E-01*	*1.00E-01*
wCbak ug/m3	10	10	10	10	10	10	10	10	10
wCbak/(Crise-Cbak)	*1.02E-02*	*1.02E-02*	*1.02E-02*	*5.56E-02*	*5.56E-02*	***5.56E-02***	***5.00E-01***	***5.00E-01***	***5.00E-01***
$\Sigma(wX/X)^2$	4.35E-02	1.23E-02	4.45E-03	8.20E-02	1.72E-02	7.91E-03	5.02E-01	3.42E-01	2.62E-01
RMS uncert $[\Sigma(wX/X)^2]^{1/2}$	**2.09E-01**	**1.11E-01**	**6.67E-02**	**2.86E-01**	**1.31E-01**	**8.90E-02**	**7.08E-01**	**5.85E-01**	**5.12E-01**
RMS uncertainty %	**21%**	**11%**	**7%**	**29%**	**13%**	**9%**	**71%**	**58%**	**51%**
flux ton/acre/hr	1.63E-02	1.63E-02	1.63E-02	2.99E-03	2.99E-03	2.99E-03	3.32E-04	3.32E-04	3.32E-04
RMS uncer ton/acre/hr	.34E-02	.18E-02	.11E-02	.86E-03	.39E-03	.27E-03	2.35E-04	1.94E-04	1.7E-04

Table 1G - Flux calculation - uncertainty analysis scenarios high riser flow uncertainty and several riser concentrations

Scenario	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
riser concentration	high	high	high	medium	medium	medium	low	low	low
riser concentr uncert	high	medium	low	high	medium	low	high	med	low
Typical site	unstable lands	unstable lands		stable lands	stable lands		stabilized lands	stabilized lands	stabilized lands
Surface condition							torn up		not torn up
Riser flow uncertainty	high	high	high	high	high	high	high	high	high
Data									
Area ft^2	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
wArea ft^2	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
wArea/Area	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03
Qavg cfm	438	438	438	438	438	438	438	438	438
Qcyc cfm	40	40	40	40	40	40	40	40	40
Qavg+Qcyc cfm	478	478	478	478	478	478	478	478	478
wQavg cfm	43	43	43	43	43	43	43	43	43
wQavg/(Qavg+Qcyc)	9.00E-02	9.00E-02	9.00E-02	9.00E-02	9.00E-02	9.00E-02	9.00E-02	9.00E-02	9.00E-02
wQcyc cfm	1	1	1	1	1	1	1	1	1
wQcyc/(Qavg+Qcyc)	2.09E-03	2.09E-03	2.09E-03	2.09E-03	2.09E-03	2.09E-03	2.09E-03	2.09E-03	2.09E-03
Crise ug/m3	*1000*	*1000*	*1000*	*200*	*200*	*200*	*40*	*40*	*40*
Cbak ug/m3	20	20	20	20	20	20	20	20	20
Crise - Cbak ug/m3	980	980	980	180	180	180	20	20	20
wCrise ug/m3	*200*	*100*	*50*	*50*	*20*	*10*	*10*	*6*	*2*
wCrise/(Crise-Cbak)	***2.04E-01***	***1.02E-01***	***5.10E-02***	***2.78E-01***	***1.11E-01***	***5.56E-02***	***5.00E-01***	*3.00E-01*	*1.00E-01*
wCbak ug/m3	10	10	10	10	10	10	10	10	10
wCbak/(Crise-Cbak)	*1.02E-02*	*1.02E-02*	*1.02E-02*	*5.56E-02*	*5.56E-02*	***5.56E-02***	***5.00E-01***	***5.00E-01***	***5.00E-01***
$\Sigma(wX/X)^2$	4.99E-02	1.86E-02	1.08E-02	8.84E-02	2.36E-02	1.43E-02	5.08E-01	3.48E-01	2.68E-01
RMS uncert $[\Sigma(wX/X)^2]^{1/2}$	**2.23E-01**	**1.37E-01**	**1.04E-01**	**2.97E-01**	**1.53E-01**	**1.20E-01**	**7.13E-01**	**5.90E-01**	**5.18E-01**
RMS uncertainty %	**22%**	**14%**	**10%**	**30%**	**15%**	**12%**	**71%**	**59%**	**52%**
flux ton/acre/hr	1.53E-02	1.53E-02	1.53E-02	2.81E-03	2.81E-03	2.81E-03	3.12E-04	3.12E-04	3.12E-04
RMS uncer ton/acre/hr	.34E-02	.21E-02	.16E-02	.84E-03	.43E-03	.34E-03	2.23E-04	1.84E-04	1.62E-04

Table 1H - Results of experimental repeatability study

RUN #	Saltation	Cyclone	Filter	TSI PM-10
	mass	mass	mass	mass
	mg	mg	mg	mg
D003	10086.3	124.5	171.9	0.05949
C001	4853.3	141.8	36.0	0.03835
C002	7366.1	353.0	72.0	0.05722
D004	6137.5	167.0	37.0	0.04166
E001	2201.3	198.0	108.4	0.02516
E002	10527.4	644.2	17.3	0.07374
E003 (γ)	11822.9	871.1	123.4	0.06267
E004	594.6	94.4	111.9	0.01115
average	6698.7	324.3	84.7	0.0462
std. dev	4036.3	285.1	53.1	0.0210
coef. var.	60%	88%	63%	45%
average - 1sd, mg	2662.3	39.2	31.6	0.0252
average, mg	6698.7	324.3	84.7	0.0462
average + 1 sd, mg	10735.0	609.3	137.9	0.0672
Flow rate, cfm	440	40	40	
Flow rate, liter/min				1.7
avg concentr mg/m^3	53.77	28.63	7.48	2.72

Figure 1-1 Approximate major cross street locations of 1995 Wind tunnel test sites Clark County, Nevada.

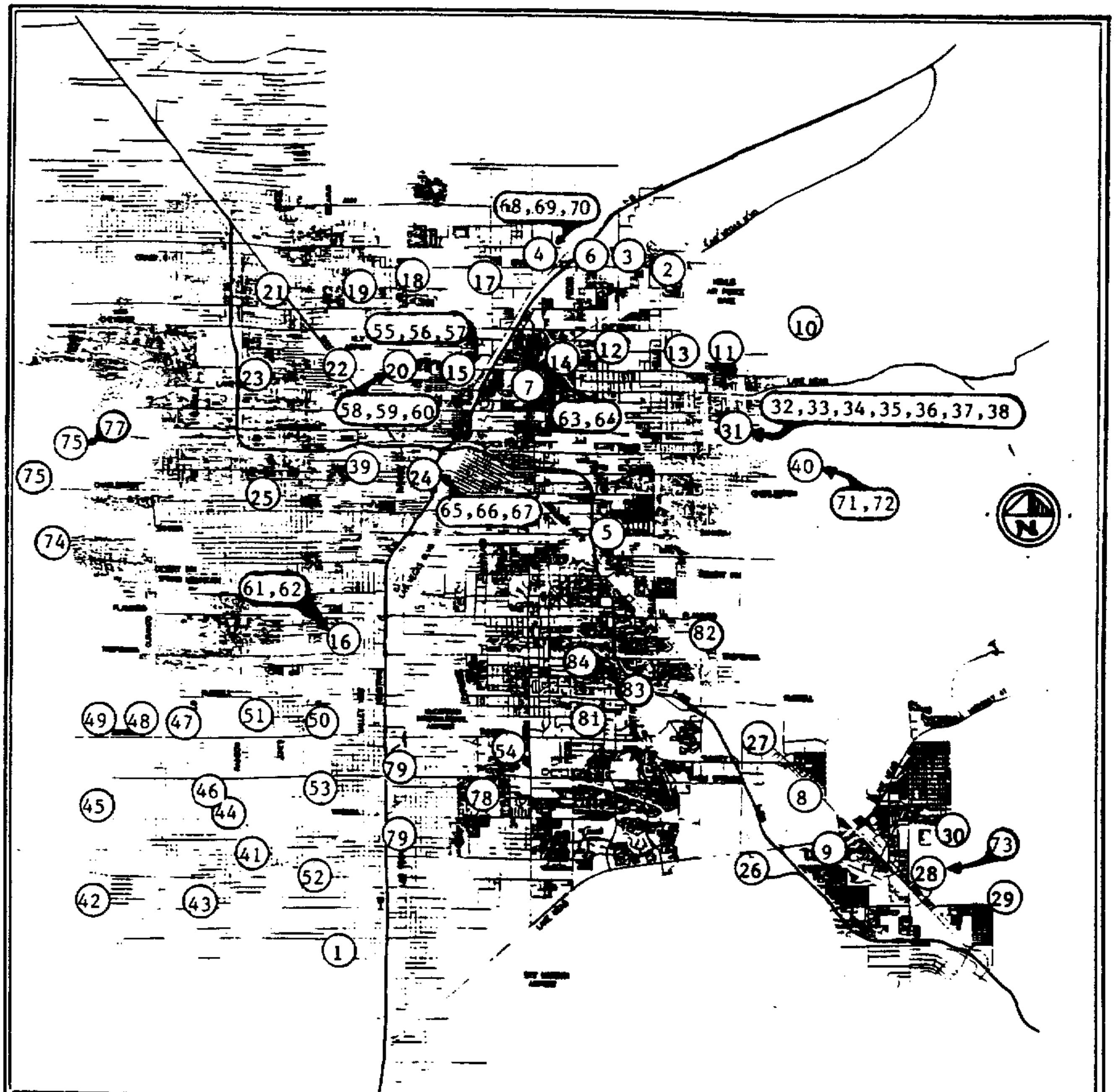


Figure 1-2 – Wind Tunnel Component Diagram

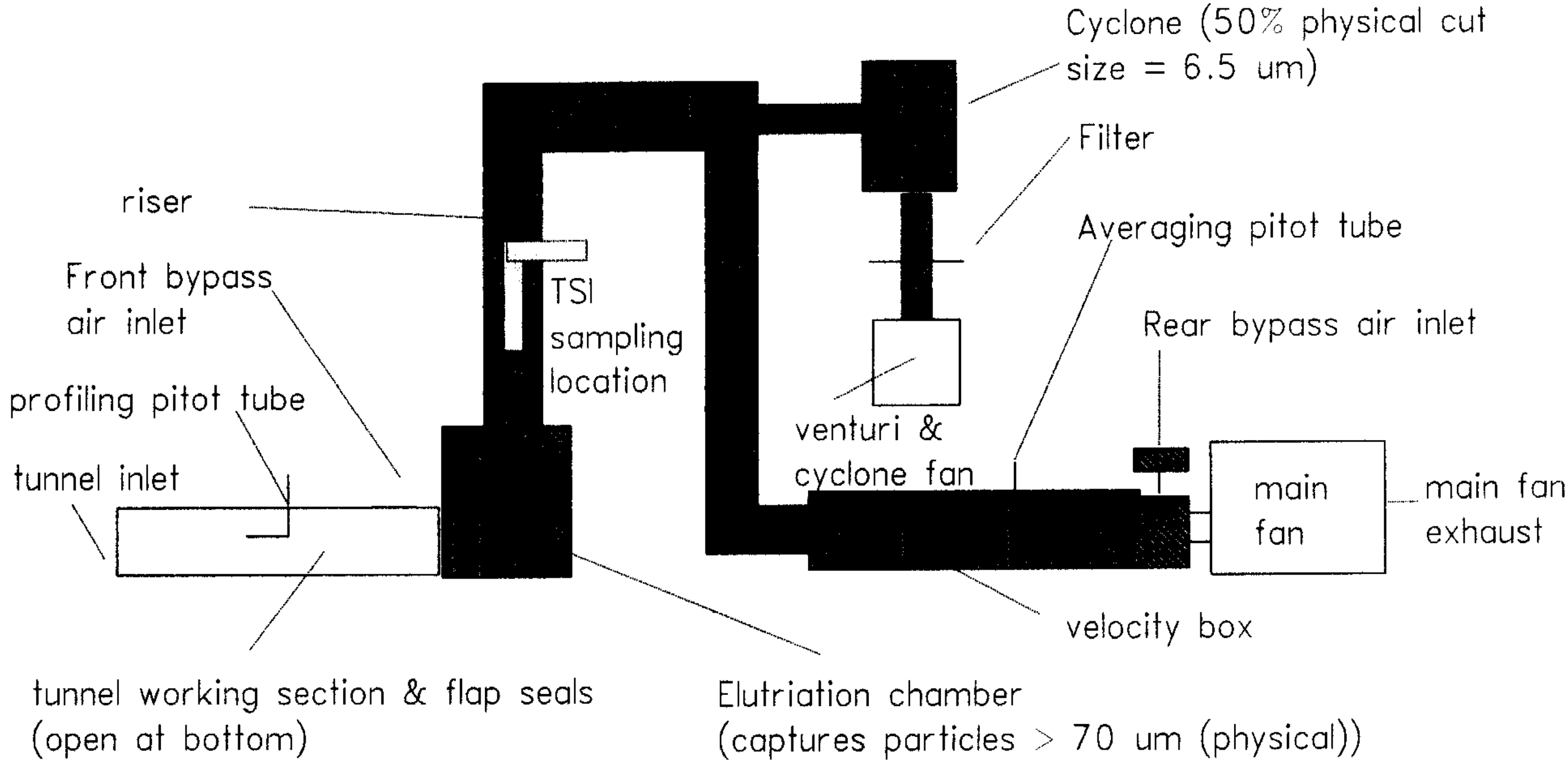


Figure 1-3 Wind Tunnel Processes Diagram
Arrows indicate air flow directions

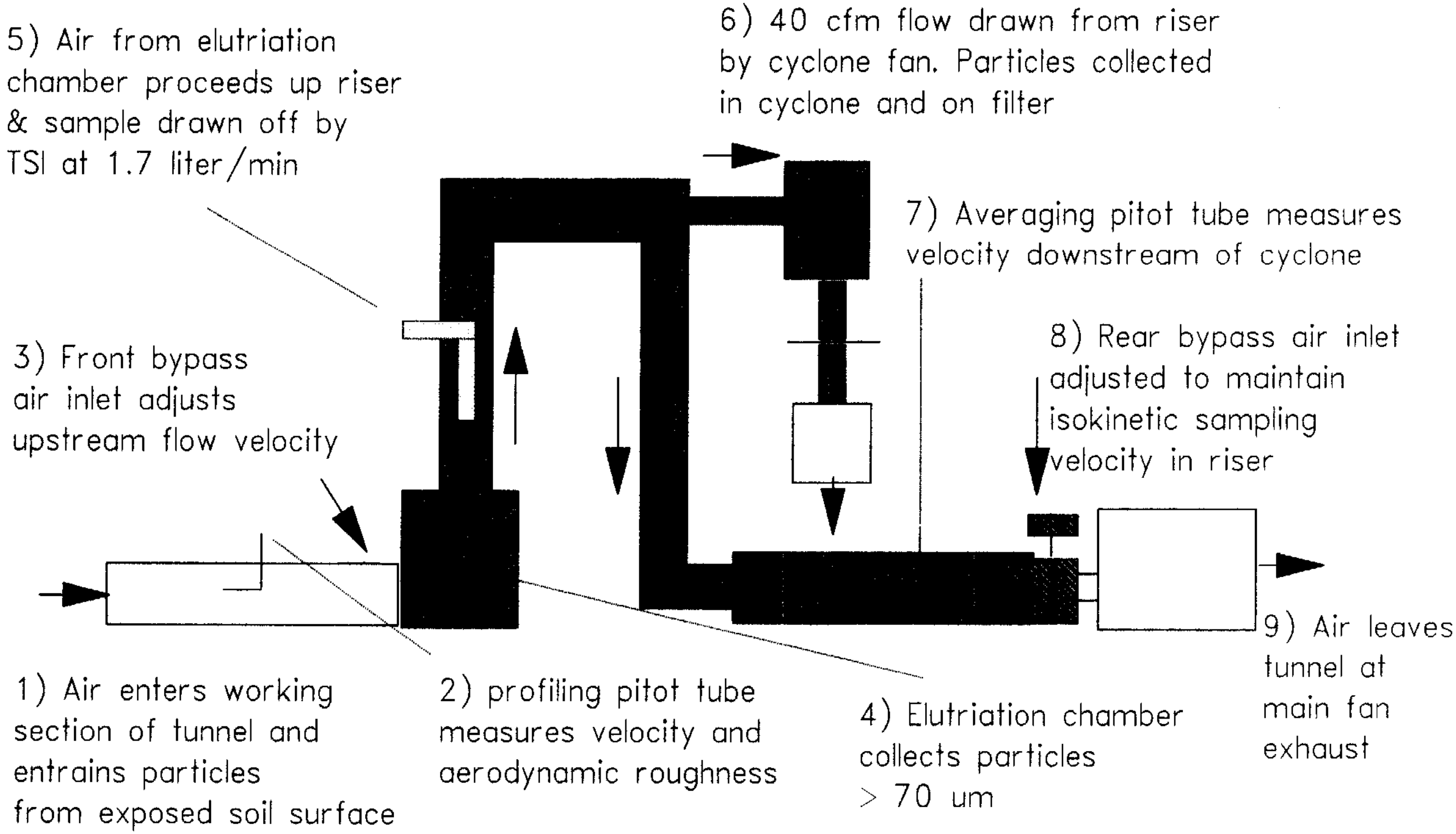


Figure 1-4 – Wind Tunnel Air Flow Balance
Arrows indicate flow directions

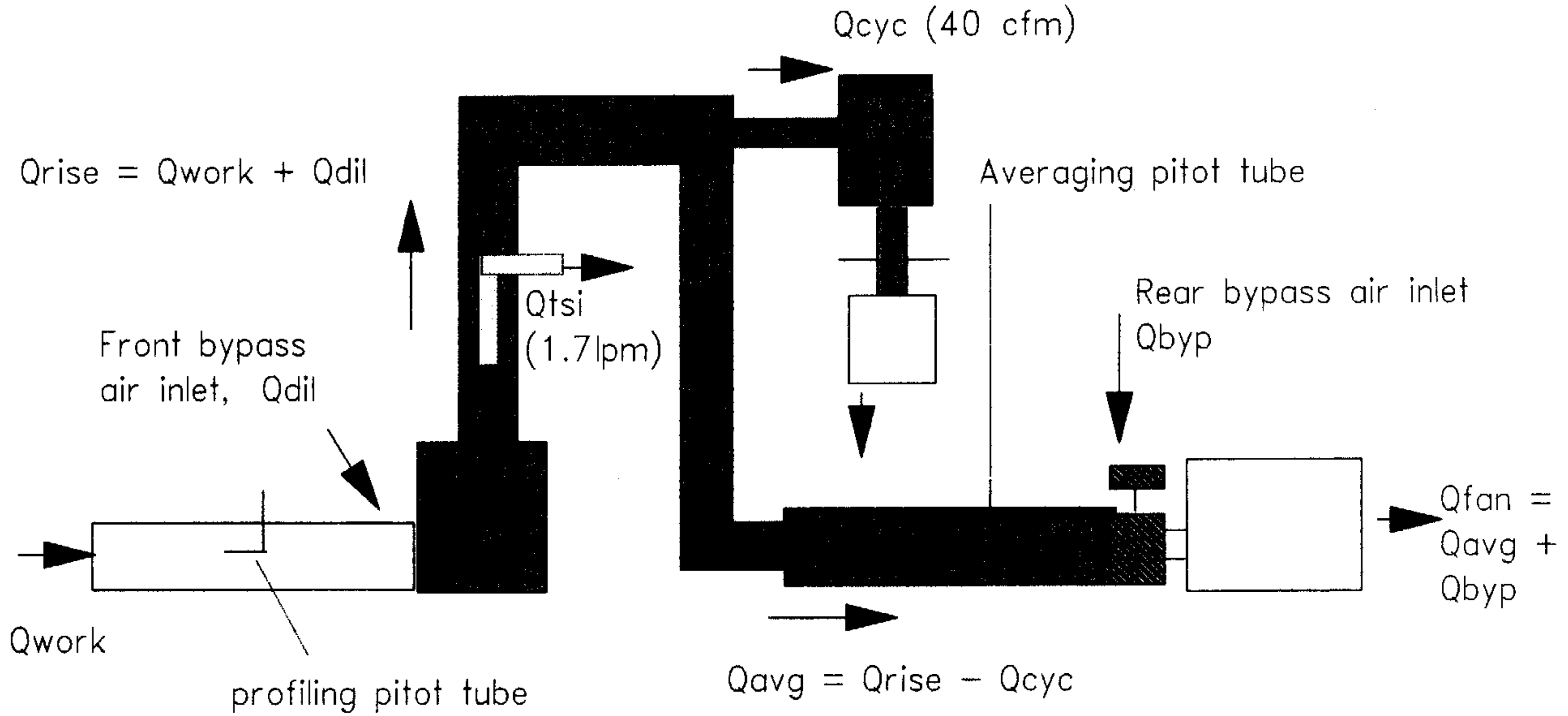


Figure 1-5 - Air flow balance equations

Assuming negligibe air density changes, then mass flow = volumetric flow

Primary equations:

a) Qrise = Qdil + Qwork

b) Qavg = Qrise - Qcyc

c) Qfan = Qavg + Qbyp

Measured or known:

Qavg	measured directly
Qcyc	known, 40 cfm
Qtsi	known, 1.7 liter/min - assumed negligible in gas flow balance

Derived equations:

d) From b, Qrise = Qavg + Qcyc

e) From a, Qdil = Qrise - Qwork

f) Substitute d into e, obtain Qdil = Qavg + Qcyc - Qwork

g) Rearrange f to obtain, Qdil + Qwork = Qavg + Qcyc

With Qavg measured & Qcyc known, then Qdil + Qwork can be computed

Figure 1-6 - Wind Tunnel PM-10 Mass Balance
Arrows indicate PM-10 mass fluxes

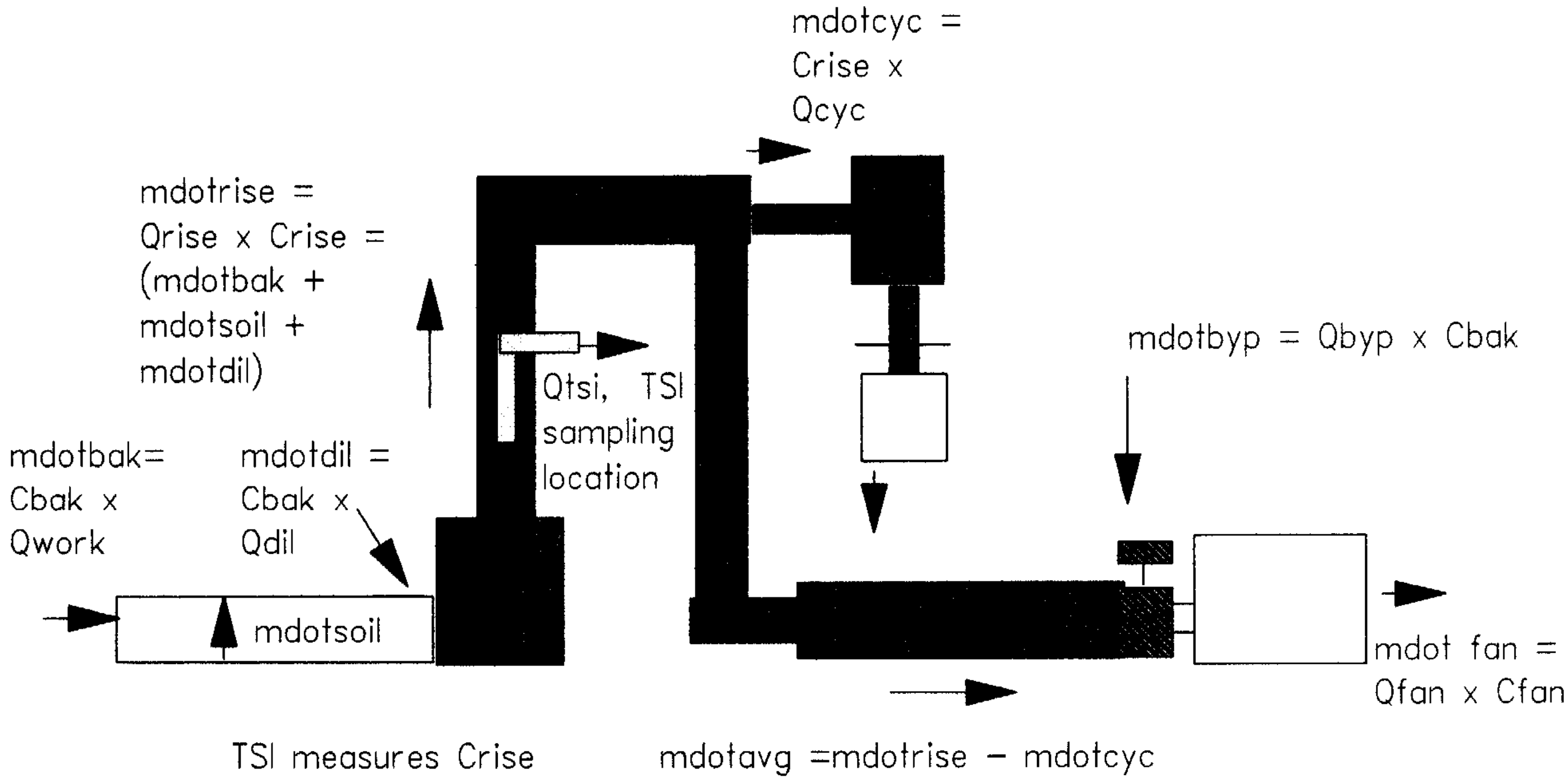


Figure 1-7 - Mass balance equations for PM10 (mdot = mass flow rate)

Primary equations:
a) mdotfan = mdotbyp + mdotavg

b) mdot avg = mdotrise - mdotcyc

c) mdotrise = mdotdil + mdotsoil + mdotbak

d) mdotbak = Qwork x Cbak

e) mdotdil = Qdil x Cbak

f) mdotrise = Qrise x Crise

Measured, assumed or known:

Crise	Measured with TSI Dust Trak(r)				
Cbak	Assumed 20 or 30 ug/m3, or measured with TSI Dust Trak(r)				
Tunnel floor area		0.5 ft wide x	5 ft long	=	2.5 ft^2

Derived equations:
g) from c, mdotsoil = mdotrise - (mdotdil + mdotbak)

h) from d&e, mdotdil + mdotbak = (Qdil+Qwork) x Cbak

i) from Figure 1-5, equation g, Qdil+Qwork = Qavg + Qcyc

j) substitute i into h and h into g

to obtain mdotsoil = mdotrise - (Qavg+Qcyc) x Cbak

k) by c, mdotrise = Qrise x Crise

l) by Figure 1-5, equation d, Qrise = Qavg + Qcyc

m) therefore, mdotrise = (Qavg + Qcyc) x Crise

n) therefore, mdotsoil = (Qavg+Qcyc) x [Crise - Cbak]

o) fluxsoil = mdotsoil / Tunnel floor area

p) therefore, fluxsoil = [(Qavg+Qcyc)x(Crise-Cbak)] / [Tunnel floor area]

Figure 1-8 - Example calculations

A. Raw Data

Qavg	440	cfm
Qcyc	40	cfm
Cbak	20	ug/m3
Crise	432	ug/m3 (average value over 10 min sampling period)
Tunnel floor	2.5	ft2

B. Conversion factors

0.305	m/ft
0.001	mg/ug
2.21E-06	lb/mg
0.0005	ton/lb
4047	m2/acre
60	min/hr

C. Flux calculation using Figure 1-7, equation p

fluxsoil = [(440cfm+40cfm)x(432-20ug/m3)]/[2.5ft2] ug-ft/m3/min = 7.91E+04 ug-ft/m3/min

fluxsoil = 7.91E+04 ug-ft/m3/min x 0.305 m/ft = 2.41E+04 ug/m2/min

fluxsoil = 2.41E+04 ug/m2/min x 0.001 mg/ug = 2.41E+01 mg/m2/min

D. Conversion to ton/acre/hr

fluxsoil =	2.41E+01 mg/m2/min x	2E-06 lb/mg =	5.32E-05	lb/m2/min
fluxsoil =	5.32E-05 lb/m2/min x	0.0005 ton/lb =	2.66E-08	ton/m2/min
fluxsoil =	2.66E-08 ton/m2/min x	4047 m2/acr =	1.08E-04	ton/acre/min
fluxsoil =	1.08E-04 ton/acre/min x	60 min/hr =	6.46E-03	ton/acre/hour
fluxsoil =	6.46E-03 ton/acre/hour			

Figure 1-9 Example velocity profile plot

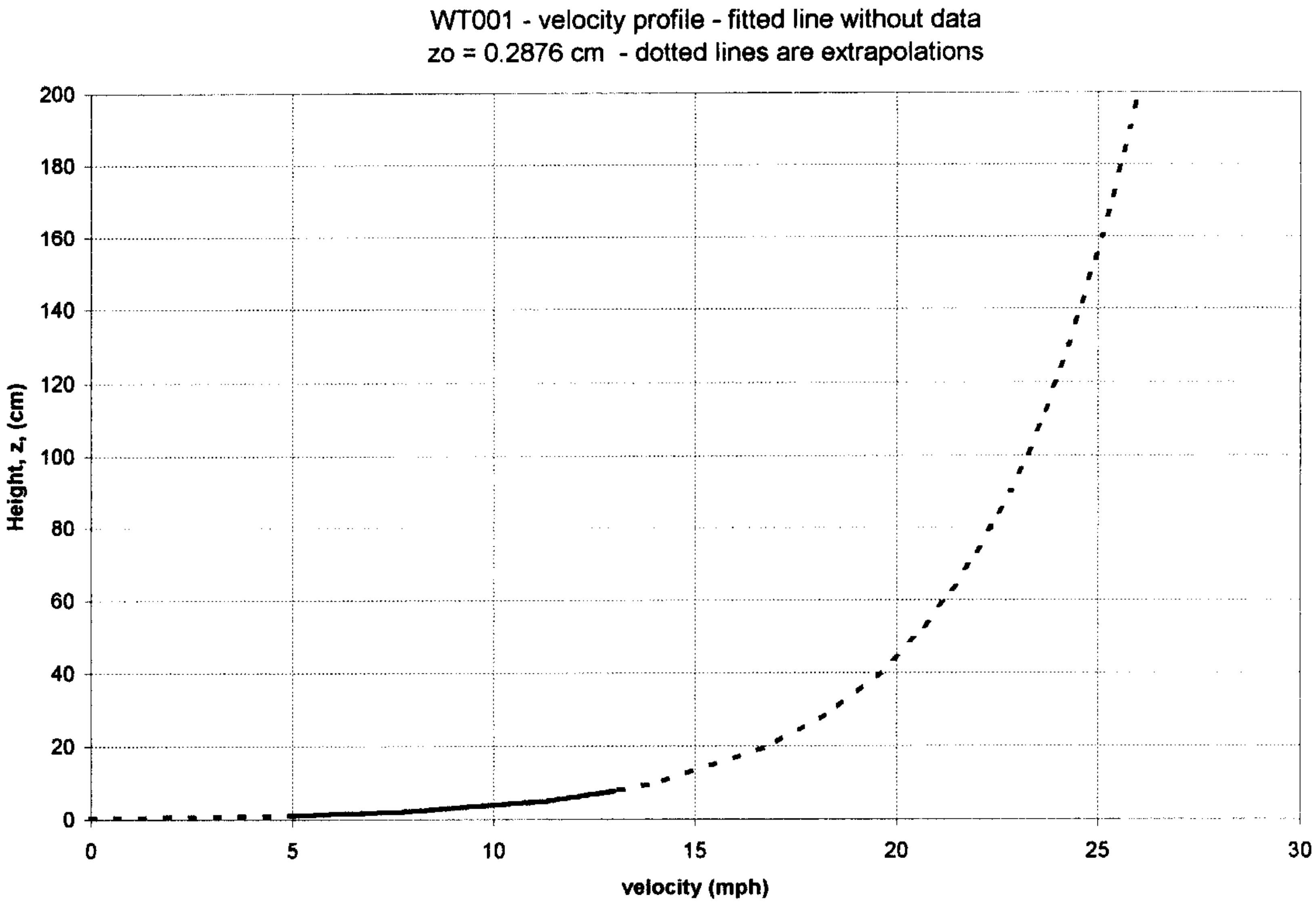
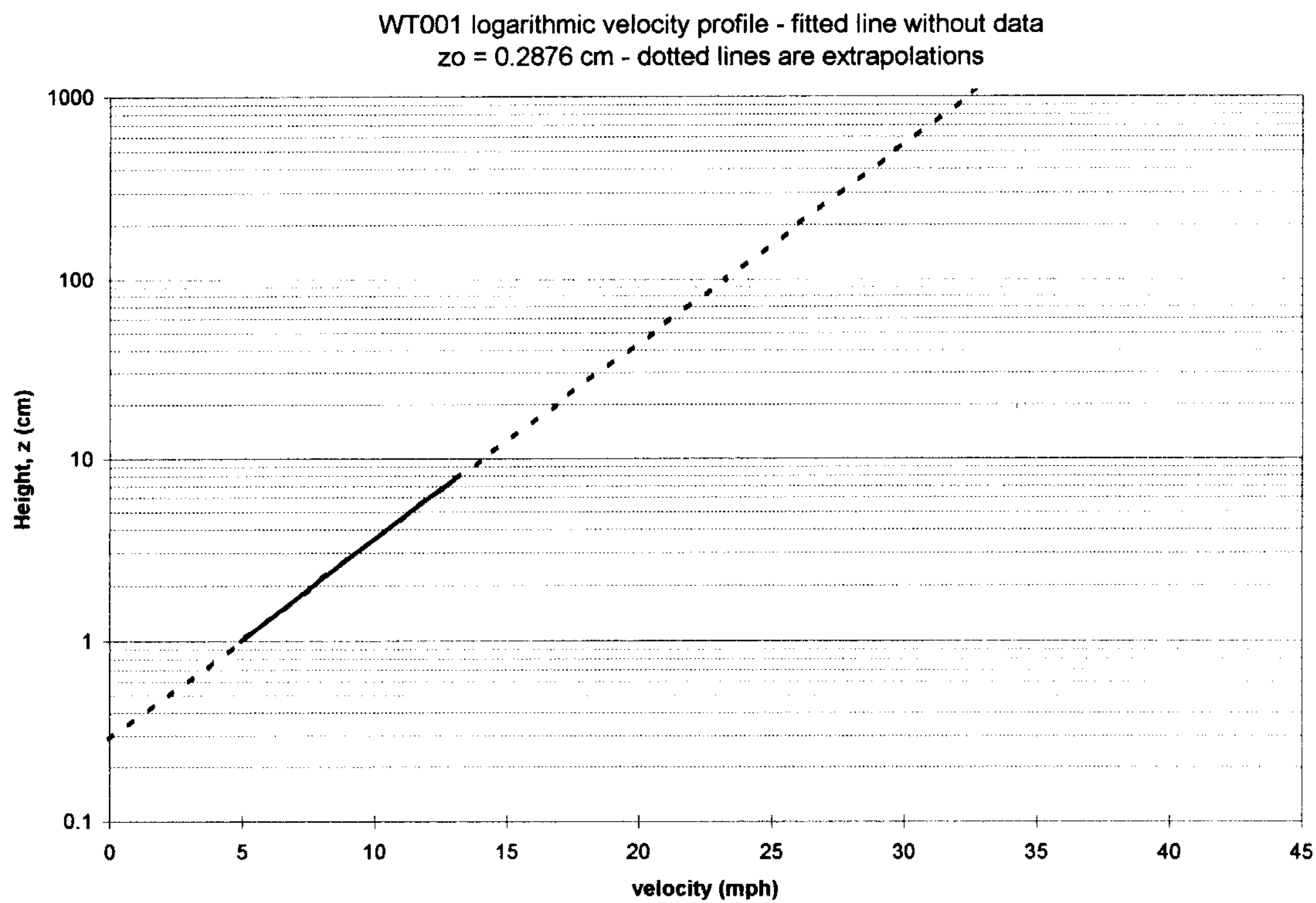


Figure 1-10 - Example velocity profile plot - log-transformed



Section 2 - 1995 wind tunnel field data and uncorrected flux calculations.

Table 2 contains the following data, sorted by Wind tunnel site designation:

1) Date at which each site was sampled.

2) Wind tunnel site designation, listed as WT0xx, where xx is a two-digit site number.

3) Major soil group.

4) Wind tunnel run number at each site.

5) Duration of PM-10 logging event, in minutes. Each event was 600 seconds (10 minutes) long. Logging frequency and run duration were programmed into the Dust-Trak(r). The Dust-Trak(r) measured and recorded PM-10 concentrations every second. The TSI shut-off automatically after 600 seconds of monitoring.

6) Erosion velocity extrapolated to z = 10 meters above the surface (shown as U10).

7) Wind tunnel site stability classification, with 0 = Stable, and 1 = Unstable.

8) Average PM-10 concentration measured by the TSI Dust-Trak(r) during the 10 minute sampling run.

9) Average volumetric flow rate measured through the averaging section of the tunnel (Qactual), measured with a Dwyer averaging pitot tube.

10) Individual, non spike-corrected flux in milligrams per square meter per minute (mg)/(m^2-min). This uncorrected flux is computed using the following equation:

PM-10 flux = [(average measured PM-10 concentration) - (assumed background PM-10 concentration)] x [(average flow rate) + (cyclone flow rate) / (tunnel floor area)

A PM-10 background concentration of 0.030 mg/m^3 (30 μg/m^3)was assumed for all runs.

For example, using data from WT002, run 1, with an average PM-10 concentration of 0.157 mg/m^3, and a flow rate of 431.1 ft^3/min, the calculated result is:

PM-10 flux = [(0.157 mg/m^3) - (0.030 mg/m^3)] x [(431.1 ft^3/min) + (40 ft^3/min)] / (2.500 ft^2) = 23.93 (mg-ft)/ (m^3-min) x (0.305 meter/foot) = <u>7.30 mg / (m^2-min)</u>.

11) Individual non spike-corrected flux, converted to ton/acre/hour. The conversion factor from mg/m^2/min to ton/acre/hour is 2.206 x 10^{-6} lb/mg x 0.0005 ton/lb x 4047 m^2/acre x 60 min/hour = 2.68 x 10^{-4} (ton/acre/hr) / (mg/m^2/min). For WT002, run 1, this results in: 7.30 (mg /m^2/min) x 2.68x10^{-4} (ton/acre/hr)/(mg/m^2/min) = <u>1.95 x 10^{-3} ton/acre/hour</u>.

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) indiv nonspike corr	Flux (ton/acre*hr) indiv nonspike corr
5/31/95	WT001	3	1	10	29.0	0	0.063	439.0	1.93E+00	5.16E-04
5/31/95	WT001	3	2	10	45.8	0	0.971	439.0	5.50E+01	1.47E-02
5/31/95	WT001	3	3	10	52.9	0	0.668	439.0	3.73E+01	9.98E-03
6/01/95	WT002	6	1	10	22.3	0	0.157	431.1	7.30E+00	1.95E-03
6/01/95	WT002	6	2	10	27.7	0	0.499	431.1	2.70E+01	7.22E-03
6/01/95	WT002	6	3	10	28.9	0	0.215	431.1	1.06E+01	2.85E-03
6/01/95	WT003	6	1	10	43.3	0	0.187	439.0	9.17E+00	2.46E-03
6/01/95	WT003	6	2	10	50.0	0	0.772	439.0	4.34E+01	1.16E-02
6/01/95	WT003	6	3	10	51.3	0	0.641	439.0	3.57E+01	9.56E-03
6/07/95	WT004	8	1	10	37.5	0	0.139	416.8	6.07E+00	1.63E-03
6/07/95	WT004	8	2	10	44.7	0	0.058	416.8	1.56E+00	4.18E-04
6/07/95	WT004	8	3	10	46.6	0	0.076	416.8	2.56E+00	6.86E-04
6/08/95	WT005	8	1	10	22.9	1	0.182	408.9	8.32E+00	2.23E-03
6/08/95	WT005	8	2	10	28.1	1	0.131	408.9	5.53E+00	1.48E-03
6/08/95	WT006	8	1	10	31.8	0	1.777	418.4	9.77E+01	2.62E-02
6/08/95	WT006	8	2	10	37.6	0	2.058	418.4	1.13E+02	3.04E-02
6/08/95	WT006	8	3	10	38.9	0	1.662	418.4	9.13E+01	2.44E-02
6/09/95	WT007	5	1	10	34.5	0	0.071	416.8	2.29E+00	6.12E-04
6/09/95	WT007	5	2	10	46.9	0	0.637	416.8	3.38E+01	9.06E-03
6/09/95	WT007	5	3	10	49.9	0	0.292	416.8	1.46E+01	3.91E-03
6/09/95	WT008	8	1	10	29.7	0	0.018	427.9	0.00E+00	0.00E+00
6/09/95	WT008	8	2	10	35.0	0	0.055	427.9	1.43E+00	3.82E-04
6/09/95	WT008	8	3	10	39.6	0	0.163	427.9	7.59E+00	2.03E-03
6/09/95	WT009	8	1	10	38.0	0	0.183	433.4	8.84E+00	2.37E-03
6/09/95	WT009	8	2	10	42.3	0	0.470	433.4	2.54E+01	6.80E-03
6/09/95	WT009	8	3	10	47.8	0	0.213	433.4	1.06E+01	2.83E-03
6/19/95	WT010	8	1	10	18.4	0	0.314	426.3	1.62E+01	4.33E-03
6/19/95	WT010	8	2	10	24.5	0	1.544	426.3	8.61E+01	2.31E-02
6/19/95	WT010	8	3	10	35.7	0	0.585	426.3	3.16E+01	8.45E-03
6/19/95	WT011	6	1	10	25.9	0	2.868	435.0	1.64E+02	4.40E-02
6/19/95	WT011	6	2	10	33.6	0	12.617	435.0	7.29E+02	1.95E-01
6/20/95	WT012	2	1	10	35.4	0	0.512	427.1	2.75E+01	7.35E-03
6/20/95	WT012	2	2	10	41.5	0	0.883	427.1	4.86E+01	1.30E-02
6/20/95	WT012	2	3	10	49.0	0	0.809	427.1	4.44E+01	1.19E-02
6/20/95	WT013	8	1	10	38.7	1	2.269	435.0	1.30E+02	3.47E-02
6/20/95	WT013	8	2	10	48.7	1	4.189	435.0	2.41E+02	6.45E-02
6/20/95	WT013	8	3	10	54.8	1	3.788	435.0	2.18E+02	5.83E-02
6/21/95	WT014	8	1	10	37.4	0	0.907	423.2	4.96E+01	1.33E-02
6/21/95	WT014	8	2	10	40.6	0	0.672	423.2	3.63E+01	9.71E-03
6/21/95	WT014	8	3	10	45.8	0	1.338	423.2	7.39E+01	1.98E-02
6/21/95	WT015	2	1	10	37.9	0	0.362	429.5	1.90E+01	5.09E-03

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) indiv nonspike corr	Flux (ton/acre*hr) indiv nonspike corr
6/21/95	WT015	2	2	10	45.5	0	0.339	429.5	1.77E+01	4.74E-03
6/21/95	WT015	2	3	10	53.1	0	0.435	429.5	2.32E+01	6.21E-03
6/21/95	WT016	2	1	10	35.3	1	1.093	435.8	6.17E+01	1.65E-02
6/21/95	WT016	2	2	10	39.8	1	0.334	435.8	1.76E+01	4.72E-03
6/21/95	WT016	2	3	10	44.2	1	1.489	435.8	8.47E+01	2.27E-02
6/22/95	WT017	2	1	10	37.3	0	1.330	431.1	7.47E+01	2.00E-02
6/22/95	WT017	2	2	10	43.8	0	0.377	431.1	1.99E+01	5.34E-03
6/22/95	WT017	2	3	10	50.5	0	0.724	431.1	3.99E+01	1.07E-02
6/22/95	WT018	2	1	10	34.9	1	1.343	435.0	7.61E+01	2.04E-02
6/22/95	WT018	2	2	10	44.9	1	1.055	435.0	5.94E+01	1.59E-02
6/22/95	WT018	2	3	10	51.2	1	1.500	435.0	8.52E+01	2.28E-02
6/26/95	WT019	2	1	10	38.2	1	0.513	441.4	2.84E+01	7.59E-03
6/26/95	WT019	2	2	10	41.7	1	0.717	441.4	4.03E+01	1.08E-02
6/26/95	WT019	2	3	10	46.3	1	0.645	441.4	3.61E+01	9.67E-03
6/26/95	WT020	8	1	10	44.7	1	0.234	448.5	1.22E+01	3.25E-03
6/26/95	WT020	8	2	10	45.1	1	0.267	448.5	1.41E+01	3.78E-03
6/26/95	WT020	8	3	10	55.7	1	0.294	448.5	1.57E+01	4.21E-03
6/27/95	WT021	2	1	10	38.6	1	0.282	436.6	1.47E+01	3.92E-03
6/27/95	WT021	2	2	10	41.7	1	0.374	436.6	2.00E+01	5.35E-03
6/27/95	WT021	2	3	10	47.9	1	0.353	436.6	1.88E+01	5.03E-03
6/27/95	WT022	2	1	10	41.2	1	0.100	439.8	4.10E+00	1.10E-03
6/27/95	WT022	2	2	10	45.3	1	0.205	439.8	1.02E+01	2.74E-03
6/27/95	WT022	2	3	10	53.5	1	0.141	439.8	6.50E+00	1.74E-03
6/27/95	WT023	5	1	10	41.3	0	1.555	447.7	9.07E+01	2.43E-02
6/27/95	WT023	5	2	10	48.6	0	1.938	447.7	1.14E+02	3.04E-02
6/27/95	WT023	5	3	10	57.2	0	2.518	447.7	1.48E+02	3.96E-02
6/28/95	WT024	9	1	10	34.2	1	1.573	444.5	9.12E+01	2.44E-02
6/28/95	WT024	9	2	10	42.5	1	2.652	444.5	1.55E+02	4.15E-02
6/28/95	WT024	9	3	10	47.5	1	1.613	444.5	9.36E+01	2.50E-02
6/28/95	WT025	2	1	10	48.0	0	1.628	446.9	9.49E+01	2.54E-02
6/28/95	WT025	2	2	10	53.2	0	1.866	446.9	1.09E+02	2.92E-02
6/28/95	WT025	2	3	10	61.7	0	1.382	446.9	8.03E+01	2.15E-02
6/29/95	WT026	6	1	10	33.5	0	0.332	431.9	1.74E+01	4.65E-03
6/29/95	WT026	6	2	10	38.4	0	0.650	431.9	3.57E+01	9.55E-03
6/29/95	WT026	6	3	10	44.2	0	0.798	431.9	4.42E+01	1.18E-02
6/29/95	WT027	6	1	10	38.2	0	0.590	440.6	3.28E+01	8.79E-03
6/29/95	WT027	6	2	10	43.0	0	0.485	440.6	2.67E+01	7.14E-03
6/29/95	WT027	6	3	10	49.1	0	1.282	440.6	7.34E+01	1.97E-02
6/30/95	WT028	6	1	10	28.3	0	0.942	432.7	5.26E+01	1.41E-02
6/30/95	WT028	6	2	10	31.4	0	1.147	432.7	6.44E+01	1.72E-02
6/30/95	WT028	6	3	10	36.2	0	1.342	432.7	7.57E+01	2.03E-02

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) indiv nonspike corr	Flux (ton/acre*hr) indiv nonspike corr
6/30/95	WT029	3	1	10	30.8	1	0.206	433.4	1.02E+01	2.72E-03
6/30/95	WT029	3	2	10	34.0	1	0.495	433.4	2.69E+01	7.19E-03
6/30/95	WT029	3	3	10	37.0	1	0.315	433.4	1.65E+01	4.41E-03
6/30/95	WT030	6	1	10	42.2	0	0.546	441.4	3.03E+01	8.11E-03
6/30/95	WT030	6	2	10	50.1	0	0.500	441.4	2.76E+01	7.39E-03
6/30/95	WT030	6	3	10	56.9	0	0.585	441.4	3.26E+01	8.73E-03
7/05/95	WT031-A	8	1	10	38.8	1	1.431	430.3	8.04E+01	2.15E-02
7/05/95	WT031-A	8	2	10	44.7	1	2.674	430.3	1.52E+02	4.06E-02
7/05/95	WT031-A	8	3	10	47.2	1	4.172	430.3	2.38E+02	6.36E-02
7/05/95	WT031-B	8	1	10	39.0	1	1.392	438.2	7.95E+01	2.13E-02
7/05/95	WT031-B	8	2	10	44.9	1	2.665	438.2	1.54E+02	4.12E-02
7/05/95	WT031-B	8	3	10	47.9	1	5.691	438.2	3.30E+02	8.84E-02
7/05/95	WT031-C	8	1	10	41.5	1	3.599	443.7	2.11E+02	5.64E-02
7/05/95	WT031-C	8	2	10	47.7	1	3.940	443.7	2.31E+02	6.18E-02
7/05/95	WT031-C	8	3	10	50.4	1	5.689	443.7	3.34E+02	8.94E-02
7/06/95	WT031-D	8	1	10	47.1	1	3.230	449.3	1.91E+02	5.11E-02
7/06/95	WT031-D	8	2	10	54.2	1	1.538	449.3	9.00E+01	2.41E-02
7/06/95	WT031-D	8	3	10	59.6	1	9.109	449.3	5.42E+02	1.45E-01
7/07/95	WT031-E	8	1	10	42.9	1	1.656	429.5	9.31E+01	2.49E-02
7/07/95	WT031-E	8	2	10	49.5	1	1.973	429.5	1.11E+02	2.98E-02
7/07/95	WT031-E	8	3	10	52.7	1	2.748	429.5	1.56E+02	4.17E-02
7/10/95	WT031-F	8	1	10	38.1	1	1.885	432.7	1.07E+02	2.86E-02
7/10/95	WT031-F	8	2	10	43.8	1	1.598	432.7	9.04E+01	2.42E-02
7/10/95	WT031-F	8	3	10	48.2	1	2.280	432.7	1.30E+02	3.47E-02
7/10/95	WT031-G	8	1	10	33.6	1	1.032	438.2	5.85E+01	1.56E-02
7/10/95	WT031-G	8	2	10	38.6	1	1.601	438.2	9.16E+01	2.45E-02
7/10/95	WT031-G	8	3	10	42.5	1	1.672	438.2	9.58E+01	2.56E-02
7/10/95	WT031-H	8	1	10	36.2	1	22.840	439.0	1.33E+03	3.57E-01
7/10/95	WT031-H	8	2	10	41.6	1	19.953	439.0	1.16E+03	3.12E-01
7/10/95	WT031-H	8	3	10	44.9	1	48.987	439.0	2.86E+03	7.66E-01
7/06/95	WT032	2	1	10	32.5	1	0.156	436.6	7.33E+00	1.96E-03
7/06/95	WT032	2	2	10	36.4	1	0.115	436.6	4.94E+00	1.32E-03
7/06/95	WT032	2	3	10	39.3	1	0.125	436.6	5.52E+00	1.48E-03
7/07/95	WT033	5	1	10	42.1	0	0.653	439.8	3.65E+01	9.76E-03
7/07/95	WT033	5	2	10	47.4	0	0.631	439.8	3.52E+01	9.42E-03
7/07/95	WT033	5	3	10	52.6	0	0.597	439.8	3.32E+01	8.88E-03
7/12/95	WT034	2	1	10	41.6	0	1.245	432.7	7.01E+01	1.88E-02
7/12/95	WT034	2	2	10	46.7	0	2.073	432.7	1.18E+02	3.15E-02
7/12/95	WT034	2	3	10	52.4	0	4.244	432.7	2.43E+02	6.51E-02
7/12/95	WT035	2	1	10	25.7	0	0.930	438.2	5.25E+01	1.41E-02
7/12/95	WT035	2	2	10	29.6	0	1.832	438.2	1.05E+02	2.81E-02

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) indiv nonspike corr	Flux (ton/acre*hr) indiv nonspike corr
7/12/95	WT035	2	3	10	34.3	0	5.148	438.2	2.99E+02	7.99E-02
7/13/95	WT036	2	1	10	42.7	0	0.946	430.3	5.26E+01	1.41E-02
7/13/95	WT036	2	2	10	49.8	0	0.978	430.3	5.44E+01	1.46E-02
7/13/95	WT036	2	3	10	56.1	0	4.645	430.3	2.65E+02	7.09E-02
7/13/95	WT037	2	1	10	45.0	0	0.878	438.2	4.95E+01	1.32E-02
7/13/95	WT037	2	2	10	50.9	0	0.894	438.2	5.04E+01	1.35E-02
7/13/95	WT037	2	3	10	55.8	0	2.571	438.2	1.48E+02	3.97E-02
7/14/95	WT038	2	1	10	33.2	0	0.171	429.5	8.08E+00	2.16E-03
7/14/95	WT038	2	2	10	37.7	0	0.184	429.5	8.82E+00	2.36E-03
7/14/95	WT038	2	3	10	41.5	0	0.248	429.5	1.25E+01	3.34E-03
7/14/95	WT039	2	1	10	43.8	0	0.508	435.0	2.77E+01	7.42E-03
7/14/95	WT039	2	2	10	49.6	0	0.442	435.0	2.39E+01	6.39E-03
7/14/95	WT039	2	3	10	56.2	0	0.744	435.0	4.14E+01	1.11E-02
7/14/95	WT040	2	1	10	37.1	0	0.908	439.8	5.14E+01	1.38E-02
7/14/95	WT040	2	2	10	40.6	0	3.172	439.8	1.84E+02	4.92E-02
7/14/95	WT040	2	3	10	44.8	0	1.336	439.8	7.64E+01	2.05E-02
7/18/95	WT041	2	1	10	42.2	0	0.872	430.3	4.83E+01	1.29E-02
7/18/95	WT041	2	2	10	48.6	0	0.770	430.3	4.25E+01	1.14E-02
7/18/95	WT041	2	3	10	53.6	0	0.849	430.3	4.70E+01	1.26E-02
7/18/95	WT042	2	1	10	39.3	0	0.285	438.2	1.49E+01	3.98E-03
7/18/95	WT042	2	2	10	54.7	0	0.610	438.2	3.38E+01	9.06E-03
7/18/95	WT042	2	3	10	60.7	0	0.460	438.2	2.51E+01	6.72E-03
7/18/95	WT043	2	1	10	34.2	1	2.353	443.7	1.37E+02	3.67E-02
7/18/95	WT043	2	2	10	39.5	1	3.251	443.7	1.90E+02	5.09E-02
7/18/95	WT043	2	3	10	45.9	1	6.955	443.7	4.09E+02	1.09E-01
7/19/95	WT044	2	1	10	30.3	0	0.339	429.5	1.77E+01	4.74E-03
7/19/95	WT044	2	2	10	33.4	0	0.523	429.5	2.82E+01	7.56E-03
7/19/95	WT044	2	3	10	36.9	0	0.853	429.5	4.71E+01	1.26E-02
7/19/95	WT045	2	1	10	44.0	0	1.535	439.8	8.81E+01	2.36E-02
7/19/95	WT045	2	2	10	50.5	0	0.933	439.8	5.29E+01	1.41E-02
7/19/95	WT045	2	3	10	56.8	0	1.664	439.8	9.56E+01	2.56E-02
7/20/95	WT046	3	1	10	41.7	0	0.353	432.7	1.86E+01	4.99E-03
7/20/95	WT046	3	2	10	48.1	0	0.633	432.7	3.48E+01	9.31E-03
7/20/95	WT046	3	3	10	52.4	0	1.395	432.7	7.87E+01	2.11E-02
7/20/95	WT047	7	1	10	40.3	0	0.808	438.2	4.54E+01	1.22E-02
7/20/95	WT047	7	2	10	44.1	0	1.009	438.2	5.71E+01	1.53E-02
7/20/95	WT047	7	3	10	48.9	0	1.155	438.2	6.56E+01	1.76E-02
7/24/95	WT048	2	1	10	21.9	0	0.063	427.0	1.88E+00	5.03E-04
7/24/95	WT048	2	2	10	25.3	0	0.107	427.0	4.39E+00	1.17E-03
7/24/95	WT048	2	3	10	30.2	0	0.129	427.0	5.64E+00	1.51E-03
7/24/95	WT048	2	4	10		0				

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) indiv nonspike corr	Flux (ton/acre*hr) indiv nonspike corr
7/24/95	WT049	2	1	10	21.1	0	0.071	436.7	2.38E+00	6.38E-04
7/24/95	WT049	2	2	10	28.5	0	0.243	436.7	1.24E+01	3.32E-03
7/24/95	WT049	2	3	10	34.2	0	0.712	436.7	3.97E+01	1.06E-02
7/26/95	WT050	2	1	10	34.8	1	0.681	418.4	3.64E+01	9.75E-03
7/26/95	WT050	2	2	10	38.8	1	0.770	418.4	4.14E+01	1.11E-02
7/26/95	WT050	2	3	10	45.3	1	5.853	418.4	3.26E+02	8.72E-02
7/26/95	WT050	2	4	10	44.8	1	1.847	421.7	1.02E+02	2.74E-02
7/25/95	WT051	8	1	10	27.2	0	0.123	447.7	5.53E+00	1.48E-03
7/25/95	WT051	8	2	10	33.5	0	0.368	447.7	2.01E+01	5.38E-03
7/25/95	WT051	8	3	10	40.3	0	0.593	447.7	3.35E+01	8.97E-03
7/25/95	WT051	8	4	10	41.5	0	0.403	447.7	2.22E+01	5.94E-03
7/25/95	WT052	8	1	10	30.9	0	0.071	445.5	2.43E+00	6.50E-04
7/25/95	WT052	8	2	10	37.0	0	0.141	445.5	6.58E+00	1.76E-03
7/25/95	WT052	8	3	10	44.4	0	0.244	443.8	1.26E+01	3.38E-03
7/25/95	WT052	8	4	10	46.1	0	0.218	442.1	1.11E+01	2.96E-03
7/26/95	WT053	8	1	10	28.4	1	1.035	466.6	6.21E+01	1.66E-02
7/26/95	WT053	8	2	10	33.7	1	0.966	460.4	5.71E+01	1.53E-02
7/26/95	WT053	8	3	10	43.2	1	2.573	457.9	1.54E+02	4.14E-02
7/26/95	WT053	8	4	10	44.2	1	0.652	457.9	3.78E+01	1.01E-02
7/27/95	WT054	2	1	10	35.1	1	0.154	438.2	7.23E+00	1.94E-03
7/27/95	WT054	2	2	10	42.4	1	0.237	438.2	1.21E+01	3.23E-03
7/27/95	WT054	2	3	10	52.7	1	0.598	438.2	3.31E+01	8.87E-03
7/27/95	WT054	2	4	10	53.9	1	0.532	438.2	2.93E+01	7.84E-03
7/27/95	WT055	2	1	10	30.7	1	0.350	447.7	1.90E+01	5.10E-03
7/27/95	WT055	2	2	10	35.2	1	1.076	447.7	6.22E+01	1.67E-02
7/27/95	WT055	2	3	10	43.6	1	1.360	447.7	7.91E+01	2.12E-02
7/27/95	WT055	2	4	10	44.7	1	0.542	447.7	3.05E+01	8.16E-03
7/28/95	WT056	8	1	10	27.9	1	0.153	439.0	7.19E+00	1.92E-03
7/28/95	WT056	8	2	10	33.9	1	0.305	439.0	1.61E+01	4.30E-03
7/28/95	WT056	8	3	10	41.1	1	0.283	439.0	1.48E+01	3.96E-03
7/28/95	WT056	8	4	10	43.1	1	0.348	439.0	1.86E+01	4.97E-03
7/28/95	WT057	8	1	10	30.2	1	0.063	443.7	1.95E+00	5.21E-04
7/28/95	WT057	8	2	10	33.5	1	0.163	443.7	7.85E+00	2.10E-03
7/28/95	WT057	8	3	10	36.9	1	0.107	443.7	4.54E+00	1.22E-03
7/28/95	WT057	8	4	10	43.1	1	0.244	443.7	1.26E+01	3.38E-03
7/31/95	WT058	9	1	10	32.8	0	0.713	439.0	3.99E+01	1.07E-02
7/31/95	WT058	9	2	10	41.3	0	0.866	439.0	4.89E+01	1.31E-02
7/31/95	WT058	9	3	10	50.4	0	1.472	439.0	8.43E+01	2.26E-02
7/31/95	WT058	9	4	10	51.6	0	0.825	439.0	4.65E+01	1.24E-02
8/01/95	WT059	9	1	10	34.7	0	0.150	435.8	6.97E+00	1.86E-03
8/01/95	WT059	9	2	10	40.8	0	0.210	435.8	1.04E+01	2.80E-03

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) indiv nonspike corr	Flux (ton/acre*hr) indiv nonspike corr
8/01/95	WT059	9	3	10	52.4	0	0.212	435.8	1.06E+01	2.83E-03
8/01/95	WT059	9	4	10	52.6	0	0.192	435.8	9.40E+00	2.52E-03
8/01/95	WT060	9	1	10	25.4	0	0.318	441.4	1.69E+01	4.53E-03
8/01/95	WT060	9	2	10	30.4	0	0.253	441.4	1.31E+01	3.51E-03
8/01/95	WT060	9	3	10	37.9	0	0.519	441.4	2.87E+01	7.69E-03
8/01/95	WT060	9	4	10	41.3	0	0.238	441.4	1.22E+01	3.27E-03
8/02/95	WT061	5	1	10	37.8	1	0.736	437.4	4.11E+01	1.10E-02
8/02/95	WT061	5	2	10	43.6	1	1.212	437.4	6.88E+01	1.84E-02
8/02/95	WT061	5	3	10	53.4	1	2.012	437.4	1.15E+02	3.09E-02
8/02/95	WT061	5	4	10	54.5	1	1.055	437.4	5.97E+01	1.60E-02
8/02/95	WT062	5	1	10	39.9	0	0.438	446.9	2.42E+01	6.49E-03
8/02/95	WT062	5	2	10	46.4	0	1.155	446.9	6.68E+01	1.79E-02
8/02/95	WT062	5	3	10	59.2	0	2.788	446.9	1.64E+02	4.39E-02
8/02/95	WT062	5	4	10	60.1	0	1.310	446.9	7.60E+01	2.04E-02
8/02/95	WT063	5	1	10	37.8	0	0.246	449.3	1.29E+01	3.45E-03
8/02/95	WT063	5	2	10	46.8	0	0.950	449.3	5.49E+01	1.47E-02
8/02/95	WT063	5	3	10	57.6	0	0.424	449.3	2.35E+01	6.30E-03
8/02/95	WT063	5	4	10	58.8	0	1.111	449.3	6.45E+01	1.73E-02
8/04/95	WT064	5	1	10	35.1	0	0.327	436.6	1.73E+01	4.62E-03
8/04/95	WT064	5	2	10	43.9	0	0.415	436.6	2.24E+01	5.99E-03
8/04/95	WT064	5	3	10	54.5	0	1.838	436.6	1.05E+02	2.81E-02
8/04/95	WT064	5	4	10	54.8	0	0.654	436.6	3.63E+01	9.71E-03
8/03/95	WT065	5	1	10	30.9	0	0.884	441.5	5.02E+01	1.34E-02
8/03/95	WT065	5	2	10	36.8	0	0.819	441.5	4.64E+01	1.24E-02
8/03/95	WT065	5	3	10	45.5	0	0.790	441.5	4.46E+01	1.20E-02
8/03/95	WT065	5	4	10	47.6	0	1.445	441.5	8.31E+01	2.23E-02
8/03/95	WT066	6	1	10	34.9	0	0.301	435.3	1.57E+01	4.21E-03
8/03/95	WT066	6	2	10	39.7	0	0.393	435.3	2.10E+01	5.63E-03
8/03/95	WT066	6	3	10	46.9	0	0.628	435.3	3.47E+01	9.28E-03
8/03/95	WT066	6	4	10	50.5	0	0.406	435.3	2.18E+01	5.84E-03
8/03/95	WT067	6	1	10	37.7	0	0.316	449.5	1.71E+01	4.57E-03
8/03/95	WT067	6	2	10	46.9	0	0.177	449.5	8.78E+00	2.35E-03
8/03/95	WT067	6	3	10	55.8	0	0.355	449.5	1.94E+01	5.20E-03
8/03/95	WT067	6	4	10		0				
8/08/95	WT068	2	1	10	29.5	0	0.134	439.0	6.08E+00	1.63E-03
8/08/95	WT068	2	2	10	33.1	0	0.394	439.0	2.13E+01	5.69E-03
8/08/95	WT068	2	3	10	41.4	0	0.453	439.0	2.47E+01	6.62E-03
8/08/95	WT068	2	4	10	44.8	0	0.361	439.0	1.93E+01	5.18E-03
8/08/95	WT069	5	1	10	28.7	0	0.435	442.1	2.38E+01	6.38E-03
8/08/95	WT069	5	2	10	32.5	0	2.259	442.1	1.31E+02	3.51E-02
8/08/95	WT069	5	3	10	41.9	0	7.572	442.1	4.44E+02	1.19E-01

Table 2 - 1995 Wind tunnel field data and calculated raw (not spike-corrected, not cumulative) fluxes

Date	Site	Major soil group	Run	Duration (min)	U10 (mph)	Unstable (y=1, n=0)	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2-min) Indiv nonspike corr	Flux (ton/acre*hr) Indiv nonspike corr
8/08/95	WT069	5	4	10	44.4	0	2.345	442.1	1.36E+02	3.65E-02
8/09/95	WT070	5	1	10	34.3	0	0.180	435.8	8.71E+00	2.33E-03
8/09/95	WT070	5	2	10	41.2	0	0.459	435.8	2.49E+01	6.67E-03
8/09/95	WT070	5	3	10	50.1	0	1.413	435.8	8.03E+01	2.15E-02
8/09/95	WT070	5	4	10	51.4	0	0.603	435.8	3.33E+01	8.90E-03
8/14/95	WT071	5	1	10	25.0	1	1.416	432.7	7.99E+01	2.14E-02
8/14/95	WT071	5	2	10	29.6	1	5.440	432.7	3.12E+02	8.35E-02
8/14/95	WT071	5	3	10	34.6	1	9.205	432.7	5.29E+02	1.42E-01
8/14/95	WT071	5	4	10	37.0	1	3.670	432.7	2.10E+02	5.62E-02
8/14/95	WT072	7	1	10	32.1	0	0.481	443.7	2.66E+01	7.13E-03
8/14/95	WT072	7	2	10	37.9	0	0.760	443.7	4.31E+01	1.15E-02
8/14/95	WT072	7	3	10	45.2	0	2.451	443.7	1.43E+02	3.82E-02
8/14/95	WT072	7	4	10	48.3	0	1.860	443.7	1.08E+02	2.89E-02
8/15/95	WT073	7	1	10	39.0	0	0.171	431.1	8.10E+00	2.17E-03
8/15/95	WT073	7	2	10	44.4	0	0.472	431.1	2.54E+01	6.80E-03
8/15/95	WT073	7	3	10	53.0	0	0.980	431.1	5.46E+01	1.46E-02
8/15/95	WT073	7	4	10	56.0	0	0.802	431.1	4.44E+01	1.19E-02
8/18/95	WT074	7	1	10	31.9	0	0.084	425.5	3.07E+00	8.21E-04
8/18/95	WT074	7	2	10	37.3	0	0.123	425.5	5.28E+00	1.41E-03
8/18/95	WT074	7	3	10	45.9	0	0.197	425.5	9.48E+00	2.54E-03
8/18/95	WT074	7	4	10	49.1	0	0.247	425.5	1.23E+01	3.30E-03
8/18/95	WT075	9	1	10	38.4	0	0.193	437.4	9.49E+00	2.54E-03
8/18/95	WT075	9	2	10	47.3	0	0.242	437.4	1.23E+01	3.31E-03
8/18/95	WT075	9	3	10	57.7	0	0.740	437.4	4.14E+01	1.11E-02
8/18/95	WT075	9	4	10	60.7	0	0.513	437.4	2.81E+01	7.53E-03
8/30/95	WT076	9	1	10	28.8	0	0.252	431.1	1.28E+01	3.42E-03
8/30/95	WT076	9	2	10	33.7	0	0.454	431.1	2.44E+01	6.52E-03
8/30/95	WT076	9	3	10	41.0	0	0.599	431.1	3.27E+01	8.75E-03
8/30/95	WT076	9	4	10	45.1	0	0.433	431.1	2.32E+01	6.20E-03
8/30/95	WT077	9	1	10	32.5	0	0.447	443.7	2.46E+01	6.59E-03
8/30/95	WT077	9	2	10	38.6	0	0.452	443.7	2.49E+01	6.67E-03
8/30/95	WT077	9	3	10	44.7	0	3.148	443.7	1.84E+02	4.93E-02
8/30/95	WT077	9	4	10	47.9	0	1.950	443.7	1.13E+02	3.03E-02
9/01/95	WT078	9	1	10	24.9	1	2.453	431.9	1.39E+02	3.73E-02
9/01/95	WT078	9	2	10	33.2	1	43.902	431.9	2.53E+03	6.76E-01
9/01/95	WT078	9	3	10	40.8	1	68.618	431.9	3.95E+03	1.06E+00
9/01/95	WT078	9	4	10	44.1	1	5.040	431.9	2.88E+02	7.72E-02

Section 3 - 1995 wind tunnel spike-corrected individual and cumulative fluxes

Table 3 contains the following data:

1) Fractional spike area, computed as the proportion of the area under the curve that can be attributed to the initial "spike" of loose PM-10. This proportion of area is graphically displayed as the dark portion of the line on the left side of the plot in Figure 3-1. It was computed using a Turbo-Pascal(r) program that processed the data files, computing the area under the spike portion of the curve, the total area under the curve, and then calculated the ratio of the spike area to the total area.

2) Individual, not spike-corrected flux, from Table 2.

3) Fractional area, not spike, computed as (1 - fractional spike area)

4) Individual spike-corrected flux, computed as (fractional area, not spike) x (Individual, not spike corrected flux)

5) Cumulative flux, spike-corrected = running sum of spike-corrected fluxes over the several runs at each wind tunnel test site.

6) For Example, using data from WT002, runs 1 and 2

Run 1 Fractional area, not spike = 1 - 0.178 = 0.822.
Individual flux, spike-corrected = 0.822 x 1.95×10^{-3} = 1.61×10^{-3} ton/acre/hour

Run 2 Fractional area, not spike = 1 - 0.602 = 0.398.
Individual flux, spike-corrected = 0.398 x 7.22×10^{-3} = 2.87×10^{-3} ton/acre/hour

Cumulative spike-corrected flux, run 2 =
individual flux, run 1 + individual flux, run 2 =
1.61×10^{-3} ton/acre/hour + 2.87×10^{-3} ton/acre/hour = 4.48×10^{-3} ton/acre/hour

Cumulative spike-corrected flux, run 3 =
individual flux, run 3 + cumulative flux, run2 =
1.50×10^{-3} ton/acre/hour + 4.48×10^{-3} ton/acre/hour = 5.98×10^{-3} ton/acre/hour

7) Blanks in Table 3 indicate runs for which 600 data point TSI files, needed for computation of spike area, were not available. Some files were corrupted or lost after download from the TSI Dust-Trak(r). Spike corrected individual and cumulative fluxes are presented in Table 3 for all wind tunnel runs for which TSI data files are available.

Figure 3-1 - Example of Spike removal for WT-056 - Run #1

Dark Line - Spike portion of trace - removed and computed separately

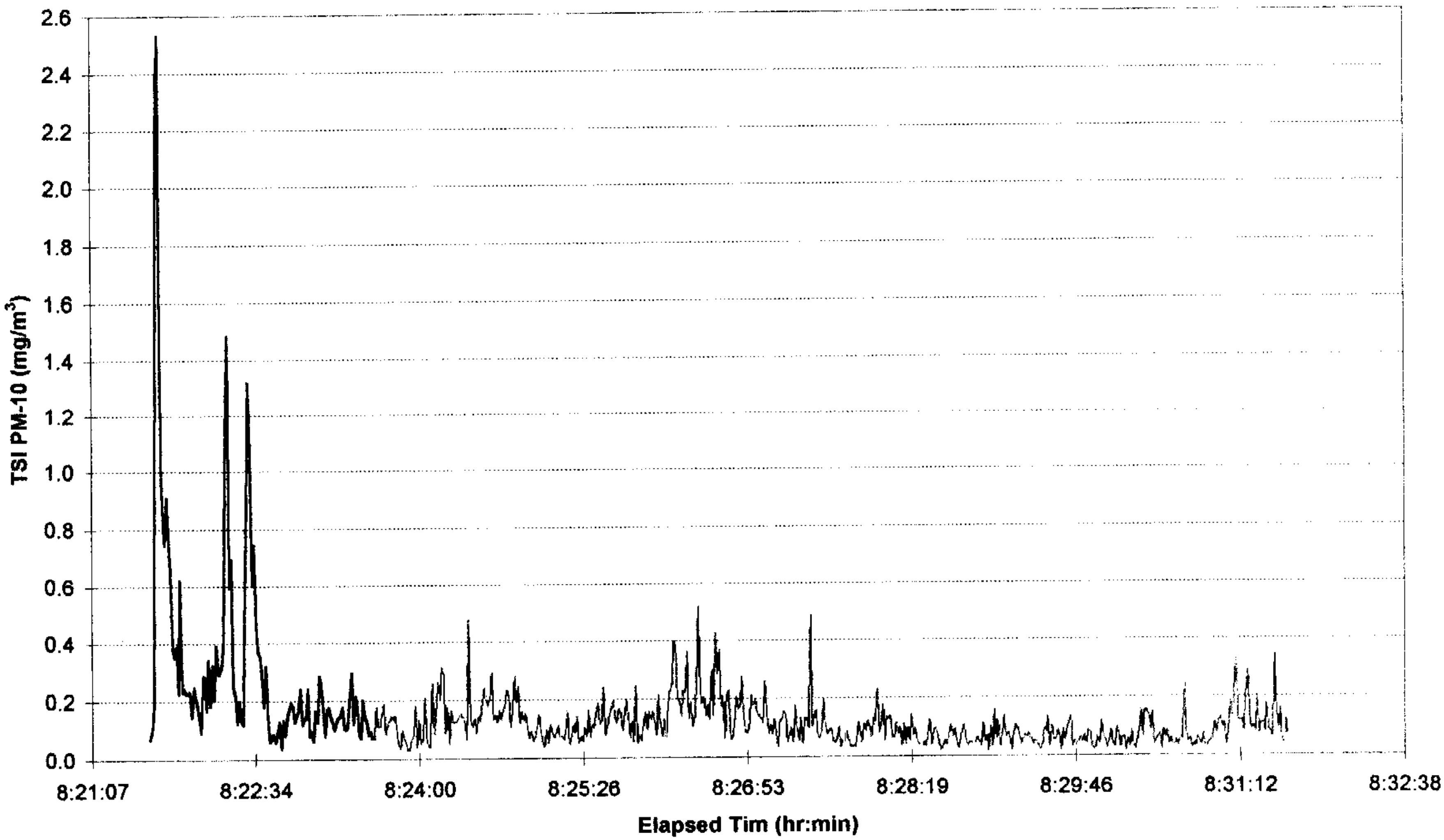


Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
1	WT001	1	0.000	5.16E-04	1.000	5.16E-04	5.16E-04
2	WT001	2	0.648	1.47E-02	0.352	5.17E-03	5.69E-03
3	WT001	3	0.829	9.98E-03	0.171	1.70E-03	7.39E-03
4	WT002	1	0.178	1.95E-03	0.822	1.61E-03	1.61E-03
5	WT002	2	0.602	7.22E-03	0.398	2.87E-03	4.48E-03
6	WT002	3	0.474	2.85E-03	0.526	1.50E-03	5.98E-03
7	WT003	1	0.501	2.46E-03	0.499	1.22E-03	1.22E-03
8	WT003	2	0.600	1.16E-02	0.400	4.64E-03	5.87E-03
9	WT003	3	0.699	9.56E-03	0.301	2.88E-03	8.74E-03
10	WT004	1		1.63E-03			
11	WT004	2		4.18E-04			
12	WT004	3		6.86E-04			
13	WT005	1	0.273	2.23E-03	0.727	1.62E-03	1.62E-03
14	WT005	2	0.792	1.48E-03	0.208	3.09E-04	1.93E-03
15	WT006	1	0.656	2.62E-02	0.344	8.99E-03	8.99E-03
16	WT006	2	0.708	3.04E-02	0.292	8.85E-03	1.78E-02
17	WT006	3	0.434	2.44E-02	0.566	1.38E-02	3.17E-02
18	WT007	1	0.426	6.12E-04	0.574	3.51E-04	3.51E-04
19	WT007	2	0.692	9.06E-03	0.308	2.79E-03	3.14E-03
20	WT007	3	0.563	3.91E-03	0.437	1.71E-03	4.85E-03
21	WT008	1	0.306	0.00E+00	0.694	0.00E+00	0.00E+00
22	WT008	2	0.441	3.82E-04	0.559	2.14E-04	2.14E-04
23	WT008	3	0.533	2.03E-03	0.467	9.50E-04	1.16E-03
24	WT009	1		2.37E-03			
25	WT009	2		6.80E-03			
26	WT009	3		2.83E-03			
27	WT010	1	0.550	4.33E-03	0.450	1.95E-03	1.95E-03
28	WT010	2	0.625	2.31E-02	0.375	8.64E-03	1.06E-02
29	WT010	3	0.483	8.45E-03	0.517	4.37E-03	1.50E-02
30	WT011	1	0.568	4.40E-02	0.432	1.90E-02	1.90E-02
31	WT011	2	0.114	1.95E-01	0.886	1.73E-01	1.92E-01
32	WT012	1	0.775	7.35E-03	0.225	1.66E-03	1.66E-03
33	WT012	2	0.766	1.30E-02	0.234	3.04E-03	4.70E-03
34	WT012	3	0.480	1.19E-02	0.520	6.18E-03	1.09E-02
35	WT013	1	0.536	3.47E-02	0.464	1.61E-02	1.61E-02
36	WT013	2	0.674	6.45E-02	0.326	2.10E-02	3.72E-02
37	WT013	3	0.221	5.83E-02	0.779	4.54E-02	8.26E-02
38	WT014	1	0.687	1.33E-02	0.313	4.16E-03	4.16E-03
39	WT014	2	0.659	9.71E-03	0.341	3.31E-03	7.47E-03
40	WT014	3	0.554	1.98E-02	0.446	8.83E-03	1.63E-02
41	WT015	1	0.696	5.09E-03	0.304	1.55E-03	1.55E-03

Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
42	WT015	2	0.594	4.74E-03	0.406	1.92E-03	3.47E-03
43	WT015	3	0.743	6.21E-03	0.257	1.60E-03	5.07E-03
44	WT016	1	0.809	1.65E-02	0.191	3.16E-03	3.16E-03
45	WT016	2	0.618	4.72E-03	0.382	1.81E-03	4.97E-03
46	WT016	3	0.882	2.27E-02	0.118	2.67E-03	7.64E-03
47	WT017	1	0.869	2.00E-02	0.131	2.62E-03	2.62E-03
48	WT017	2		5.34E-03			
49	WT017	3		1.07E-02			
50	WT018	1	0.622	2.04E-02	0.378	7.70E-03	7.70E-03
51	WT018	2	0.777	1.59E-02	0.223	3.55E-03	1.13E-02
52	WT018	3	0.419	2.28E-02	0.581	1.32E-02	2.45E-02
53	WT019	1	0.715	7.59E-03	0.285	2.17E-03	2.17E-03
54	WT019	2	0.715	1.08E-02	0.285	3.08E-03	5.25E-03
55	WT019	3	0.631	9.67E-03	0.369	3.57E-03	8.82E-03
56	WT020	1	0.600	3.25E-03	0.400	1.30E-03	1.30E-03
57	WT020	2	0.734	3.78E-03	0.266	1.01E-03	2.31E-03
58	WT020	3	0.673	4.21E-03	0.327	1.38E-03	3.69E-03
59	WT021	1	0.825	3.92E-03	0.175	6.87E-04	6.87E-04
60	WT021	2	0.504	5.35E-03	0.496	2.66E-03	3.34E-03
61	WT021	3	0.819	5.03E-03	0.181	9.12E-04	4.26E-03
62	WT022	1	0.437	1.10E-03	0.563	6.18E-04	6.18E-04
63	WT022	2	0.694	2.74E-03	0.306	8.38E-04	1.46E-03
64	WT022	3	0.510	1.74E-03	0.490	8.52E-04	2.31E-03
65	WT023	1	0.909	2.43E-02	0.091	2.20E-03	2.20E-03
66	WT023	2	0.426	3.04E-02	0.574	1.74E-02	1.96E-02
67	WT023	3	0.262	3.96E-02	0.738	2.93E-02	4.89E-02
68	WT024	1	0.570	2.44E-02	0.430	1.05E-02	1.05E-02
69	WT024	2	0.170	4.15E-02	0.830	3.44E-02	4.49E-02
70	WT024	3	0.767	2.50E-02	0.233	5.83E-03	5.07E-02
71	WT025	1	0.802	2.54E-02	0.198	5.03E-03	5.03E-03
72	WT025	2	0.563	2.92E-02	0.437	1.27E-02	1.78E-02
73	WT025	3	0.619	2.15E-02	0.381	8.20E-03	2.60E-02
74	WT026	1	0.614	4.65E-03	0.386	1.80E-03	1.80E-03
75	WT026	2	0.746	9.55E-03	0.254	2.43E-03	4.23E-03
76	WT026	3	0.587	1.18E-02	0.413	4.89E-03	9.12E-03
77	WT027	1	0.843	8.79E-03	0.157	1.38E-03	1.38E-03
78	WT027	2	0.687	7.14E-03	0.313	2.24E-03	3.62E-03
79	WT027	3	0.722	1.97E-02	0.278	5.46E-03	9.08E-03
80	WT028	1	0.616	1.41E-02	0.384	5.41E-03	5.41E-03
81	WT028	2	0.503	1.72E-02	0.497	8.58E-03	1.40E-02
82	WT028	3	0.768	2.03E-02	0.232	4.69E-03	1.87E-02

Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
83	WT029	1	0.765	2.72E-03	0.235	6.39E-04	6.39E-04
84	WT029	2	0.685	7.19E-03	0.315	2.26E-03	2.90E-03
85	WT029	3	0.429	4.41E-03	0.571	2.52E-03	5.42E-03
86	WT030	1	0.469	8.11E-03	0.531	4.31E-03	4.31E-03
87	WT030	2	0.342	7.39E-03	0.658	4.87E-03	9.17E-03
88	WT030	3	0.685	8.73E-03	0.315	2.75E-03	1.19E-02
89	WT031-A	1	0.581	2.15E-02	0.419	9.02E-03	9.02E-03
90	WT031-A	2	0.851	4.06E-02	0.149	6.05E-03	1.51E-02
91	WT031-A	3	0.696	6.36E-02	0.304	1.94E-02	3.44E-02
92	WT031-B	1		2.13E-02			
93	WT031-B	2		4.12E-02			
94	WT031-B	3		8.84E-02			
95	WT031-C	1		5.64E-02			
96	WT031-C	2		6.18E-02			
97	WT031-C	3		8.94E-02			
98	WT031-D	1		5.11E-02			
99	WT031-D	2		2.41E-02			
100	WT031-D	3		1.45E-01			
101	WT031-E	1		1.96E-03			
102	WT031-E	2		1.32E-03			
103	WT031-E	3		1.48E-03			
104	WT031-F	1		2.49E-02			
105	WT031-F	2		2.98E-02			
106	WT031-F	3		4.17E-02			
107	WT031-G	1		9.76E-03			
108	WT031-G	2		9.42E-03			
109	WT031-G	3		8.88E-03			
110	WT031-H	1		2.86E-02			
111	WT031-H	2		2.42E-02			
112	WT031-H	3		3.47E-02			
113	WT032	1	0.349	1.96E-03	0.651	1.28E-03	1.28E-03
114	WT032	2	0.260	1.32E-03	0.740	9.79E-04	2.26E-03
115	WT032	3	0.369	1.48E-03	0.631	9.34E-04	3.19E-03
116	WT033	1	0.767	9.76E-03	0.233	2.27E-03	2.27E-03
117	WT033	2	0.582	9.42E-03	0.418	3.94E-03	6.21E-03
118	WT033	3	0.516	8.88E-03	0.484	4.30E-03	1.05E-02
119	WT034	1	0.656	1.88E-02	0.344	6.46E-03	6.46E-03
120	WT034	2	0.374	3.15E-02	0.626	1.97E-02	2.62E-02
121	WT034	3	0.518	6.51E-02	0.482	3.13E-02	5.75E-02
122	WT035	1		1.41E-02			
123	WT035	2		2.81E-02			

Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
124	WT035	3		7.99E-02			
125	WT036	1	0.784	1.41E-02	0.216	3.04E-03	3.04E-03
126	WT036	2	0.627	1.46E-02	0.373	5.43E-03	8.47E-03
127	WT036	3	0.587	7.09E-02	0.413	2.93E-02	3.78E-02
128	WT037	1	0.780	1.32E-02	0.220	2.92E-03	2.92E-03
129	WT037	2	0.351	1.35E-02	0.649	8.76E-03	1.17E-02
130	WT037	3	0.571	3.97E-02	0.429	1.70E-02	2.87E-02
131	WT038	1	0.834	2.16E-03	0.166	3.59E-04	3.59E-04
132	WT038	2	0.497	2.36E-03	0.503	1.19E-03	1.55E-03
133	WT038	3	0.699	3.34E-03	0.301	1.01E-03	2.55E-03
134	WT039	1	0.709	7.42E-03	0.291	2.16E-03	2.16E-03
135	WT039	2	0.397	6.39E-03	0.603	3.86E-03	6.01E-03
136	WT039	3	0.303	1.11E-02	0.697	7.72E-03	1.37E-02
137	WT040	1	0.575	1.38E-02	0.425	5.85E-03	5.85E-03
138	WT040	2	0.278	4.92E-02	0.722	3.56E-02	4.14E-02
139	WT040	3	0.681	2.05E-02	0.319	6.52E-03	4.79E-02
140	WT041	1	0.761	1.29E-02	0.239	3.09E-03	3.09E-03
141	WT041	2	0.437	1.14E-02	0.563	6.40E-03	9.49E-03
142	WT041	3	0.717	1.26E-02	0.283	3.56E-03	1.31E-02
143	WT042	1	0.717	3.98E-03	0.283	1.13E-03	1.13E-03
144	WT042	2	0.246	9.06E-03	0.754	6.83E-03	7.95E-03
145	WT042	3	0.753	6.72E-03	0.247	1.66E-03	9.61E-03
146	WT043	1	0.577	3.67E-02	0.423	1.55E-02	1.55E-02
147	WT043	2	0.542	5.09E-02	0.458	2.33E-02	3.88E-02
148	WT043	3	0.310	1.09E-01	0.690	7.55E-02	1.14E-01
149	WT044	1	0.535	4.74E-03	0.465	2.20E-03	2.20E-03
150	WT044	2	0.572	7.56E-03	0.428	3.24E-03	5.44E-03
151	WT044	3	0.814	1.26E-02	0.186	2.34E-03	7.78E-03
152	WT045	1	0.848	2.36E-02	0.152	3.58E-03	3.58E-03
153	WT045	2	0.747	1.41E-02	0.253	3.58E-03	7.16E-03
154	WT045	3	0.675	2.56E-02	0.325	8.32E-03	1.55E-02
155	WT046	1	0.618	4.99E-03	0.382	1.91E-03	1.91E-03
156	WT046	2	0.595	9.31E-03	0.405	3.77E-03	5.67E-03
157	WT046	3	0.912	2.11E-02	0.088	1.85E-03	7.53E-03
158	WT047	1	0.769	1.22E-02	0.231	2.81E-03	2.81E-03
159	WT047	2	0.324	1.53E-02	0.676	1.03E-02	1.32E-02
160	WT047	3	0.000	1.76E-02	1.000	1.76E-02	3.07E-02
161	WT048	1	0.000	5.03E-04	1.000	5.03E-04	5.03E-04
162	WT048	2	0.333	1.17E-03	0.667	7.83E-04	1.29E-03
163	WT048	3	0.467	1.51E-03	0.533	8.05E-04	2.09E-03
164	WT048	4	0.345		0.655		

Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
165	WT049	1	0.328	6.38E-04	0.672	4.29E-04	4.29E-04
166	WT049	2	0.339	3.32E-03	0.661	2.19E-03	2.62E-03
167	WT049	3	0.626	1.06E-02	0.374	3.97E-03	6.59E-03
168	WT050	1	0.666	1.48E-03	0.334	4.95E-04	4.95E-04
169	WT050	2		5.38E-03			
170	WT050	3		8.97E-03			
171	WT050	4		5.94E-03			
172	WT051	1	0.000	6.50E-04	1.000	6.50E-04	6.50E-04
173	WT051	2	0.173	1.76E-03	0.827	1.46E-03	2.11E-03
174	WT051	3	0.520	3.38E-03	0.480	1.62E-03	3.73E-03
175	WT051	4	0.360	2.96E-03	0.640	1.89E-03	5.62E-03
176	WT052	1	0.000	9.75E-03	1.000	9.75E-03	9.75E-03
177	WT052	2		1.11E-02			
178	WT052	3		8.72E-02			
179	WT052	4		2.74E-02			
180	WT053	1	0.341	1.66E-02	0.659	1.10E-02	1.10E-02
181	WT053	2		1.53E-02			
182	WT053	3		4.14E-02			
183	WT053	4		1.01E-02			
184	WT054	1	0.687	1.94E-03	0.313	6.05E-04	6.05E-04
185	WT054	2		3.23E-03			
186	WT054	3		8.87E-03			
187	WT054	4		7.84E-03			
188	WT055	1	0.528	5.10E-03	0.472	2.40E-03	2.40E-03
189	WT055	2		1.67E-02			
190	WT055	3		2.12E-02			
191	WT055	4		8.16E-03			
192	WT056	1	0.334	1.92E-03	0.666	1.28E-03	1.28E-03
193	WT056	2		4.30E-03			
194	WT056	3		3.96E-03			
195	WT056	4		4.97E-03			
196	WT057	1		5.21E-04			
197	WT057	2		2.10E-03			
198	WT057	3		1.22E-03			
199	WT057	4		3.38E-03			
200	WT058	1	0.559	1.07E-02	0.441	4.71E-03	4.71E-03
201	WT058	2	0.610	1.31E-02	0.390	5.11E-03	9.82E-03
202	WT058	3	0.670	2.26E-02	0.330	7.43E-03	1.73E-02
203	WT058	4	0.251	1.24E-02	0.749	9.32E-03	2.66E-02
204	WT059	1	0.200	1.86E-03	0.800	1.49E-03	1.49E-03
205	WT059	2	0.435	2.80E-03	0.565	1.58E-03	3.07E-03

Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
206	WT059	3	0.585	2.83E-03	0.415	1.17E-03	4.25E-03
207	WT059	4	0.395	2.52E-03	0.605	1.52E-03	5.77E-03
208	WT060	1	0.721	4.53E-03	0.279	1.26E-03	1.26E-03
209	WT060	2	0.395	3.51E-03	0.605	2.12E-03	3.38E-03
210	WT060	3	0.463	7.69E-03	0.537	4.13E-03	7.51E-03
211	WT060	4	0.538	3.27E-03	0.462	1.51E-03	9.03E-03
212	WT061	1	0.619	1.10E-02	0.381	4.19E-03	4.19E-03
213	WT061	2	0.794	1.84E-02	0.206	3.79E-03	7.99E-03
214	WT061	3	0.620	3.09E-02	0.380	1.17E-02	1.97E-02
215	WT061	4	0.515	1.60E-02	0.485	7.75E-03	2.75E-02
216	WT062	1	0.673	6.49E-03	0.327	2.12E-03	2.12E-03
217	WT062	2	0.889	1.79E-02	0.111	1.98E-03	4.10E-03
218	WT062	3	0.723	4.39E-02	0.277	1.21E-02	1.62E-02
219	WT062	4	0.562	2.04E-02	0.438	8.91E-03	2.52E-02
220	WT063	1	0.576	3.45E-03	0.424	1.46E-03	1.46E-03
221	WT063	2	0.229	1.47E-02	0.771	1.13E-02	1.28E-02
222	WT063	3	0.655	6.30E-03	0.345	2.17E-03	1.50E-02
223	WT063	4	0.821	1.73E-02	0.179	3.08E-03	1.81E-02
224	WT064	1	0.645	1.34E-02	0.355	4.76E-03	4.76E-03
225	WT064	2	0.605	1.24E-02	0.395	4.91E-03	9.67E-03
226	WT064	3	0.840	1.20E-02	0.160	1.92E-03	1.16E-02
227	WT064	4	0.335	2.23E-02	0.665	1.48E-02	2.64E-02
228	WT065	1	0.706	4.21E-03	0.294	1.24E-03	1.24E-03
229	WT065	2	0.523	5.63E-03	0.477	2.69E-03	3.93E-03
230	WT065	3	0.559	9.28E-03	0.441	4.09E-03	8.02E-03
231	WT065	4	0.694	5.84E-03	0.306	1.79E-03	9.81E-03
232	WT066	1		4.57E-03			
233	WT066	2	1.000	2.35E-03	0.000	2.35E-03	2.35E-03
234	WT066	3	1.000	5.20E-03	0.000	5.20E-03	7.55E-03
235	WT066	4					
236	WT067	1	0.401	4.62E-03	0.599	2.77E-03	2.77E-03
237	WT067	2	0.293	5.99E-03	0.707	4.24E-03	7.01E-03
238	WT067	3	0.625	2.81E-02	0.375	1.05E-02	1.76E-02
239	WT067	4		9.71E-03			
240	WT068	1	0.360	1.63E-03	0.640	1.04E-03	1.04E-03
241	WT068	2	0.487	5.69E-03	0.513	2.92E-03	3.96E-03
242	WT068	3	0.451	6.62E-03	0.549	3.63E-03	7.59E-03
243	WT068	4	0.556	5.18E-03	0.444	2.30E-03	9.89E-03
244	WT069	1	0.605	6.38E-03	0.395	2.52E-03	2.52E-03
245	WT069	2	0.604	3.51E-02	0.396	1.39E-02	1.64E-02
246	WT069	3	0.792	1.19E-01	0.208	2.47E-02	4.11E-02

Table 3 - Spike correction and cumulative flux calculations, all in ton/acre/hour

ID	Site	Run	fractional spike area	individual flux not spike-corrected	fractional area not spike	individual flux spike-corrected	cumulative flux spike-corrected
247	WT069	4	0.641	3.65E-02	0.359	1.31E-02	5.42E-02
248	WT070	1	0.601	2.33E-03	0.399	9.29E-04	9.29E-04
249	WT070	2	0.682	6.67E-03	0.318	2.12E-03	3.05E-03
250	WT070	3	0.468	2.15E-02	0.532	1.14E-02	1.45E-02
251	WT070	4	0.302	8.90E-03	0.698	6.22E-03	2.07E-02
252	WT071	1	0.801	2.14E-02	0.199	4.26E-03	4.26E-03
253	WT071	2	0.725	8.35E-02	0.275	2.30E-02	2.72E-02
254	WT071	3	0.682	1.42E-01	0.318	4.50E-02	7.22E-02
255	WT071	4	0.668	5.62E-02	0.332	1.87E-02	9.09E-02
256	WT072	1	0.491	7.13E-03	0.509	3.63E-03	3.63E-03
257	WT072	2	0.552	1.15E-02	0.448	5.16E-03	8.79E-03
258	WT072	3	0.741	3.82E-02	0.259	9.89E-03	1.87E-02
259	WT072	4	0.829	2.89E-02	0.171	4.93E-03	2.36E-02
260	WT073	1	0.421	2.17E-03	0.579	1.26E-03	1.26E-03
261	WT073	2	0.371	6.80E-03	0.629	4.28E-03	5.53E-03
262	WT073	3	0.403	1.46E-02	0.597	8.73E-03	1.43E-02
263	WT073	4	0.305	1.19E-02	0.695	8.26E-03	2.25E-02
264	WT074	1	0.318	8.21E-04	0.682	5.60E-04	5.60E-04
265	WT074	2	0.502	1.41E-03	0.498	7.04E-04	1.26E-03
266	WT074	3	0.576	2.54E-03	0.424	1.08E-03	2.34E-03
267	WT074	4	0.623	3.30E-03	0.377	1.25E-03	3.59E-03
268	WT075	1	0.713	2.54E-03	0.287	7.30E-04	7.30E-04
269	WT075	2	0.562	3.31E-03	0.438	1.45E-03	2.18E-03
270	WT075	3	0.635	1.11E-02	0.365	4.05E-03	6.22E-03
271	WT075	4	0.223	7.53E-03	0.777	5.85E-03	1.21E-02
272	WT076	1	0.401	3.42E-03	0.599	2.05E-03	2.05E-03
273	WT076	2	0.257	6.52E-03	0.743	4.84E-03	6.89E-03
274	WT076	3	0.781	8.75E-03	0.219	1.91E-03	8.81E-03
275	WT076	4	0.900	6.20E-03	0.100	6.21E-04	9.43E-03
276	WT077	1	0.770	6.59E-03	0.230	1.52E-03	1.52E-03
277	WT077	2	0.352	6.67E-03	0.648	4.32E-03	5.83E-03
278	WT077	3	0.749	4.93E-02	0.251	1.24E-02	1.82E-02
279	WT077	4	0.515	3.03E-02	0.485	1.47E-02	3.29E-02
280	WT078	1	0.532	3.73E-02	0.468	1.75E-02	1.75E-02
281	WT078	2	0.732	6.76E-01	0.268	1.81E-01	1.98E-01
282	WT078	3	0.320	1.06E+00	0.680	7.19E-01	9.18E-01
283	WT078	4	0.588	7.72E-02	0.412	3.18E-02	9.49E-01

Section 4 - 1995 Wind tunnel individual and cumulative spike masses

Spike masses were computed by the following procedure:

1) The TSI Dust -Trak(r) logging software computes an average PM-10 concentration sampled during each 600 second run.

2) The average flow rate in the riser section of the tunnel was computed as (flow from averaging pitot tube data, cfm) - (cyclone flow, cfm). The cyclone flow, choked through a venturi, was 40 cfm for all runs.

3) The total PM-10 mass passing through the riser during the sampling period is

PM-10 mass = (average riser flow rate) x (PM-10 riser concentration) x (run duration)

4) For each 600 second run, the proportion of the total signal area that corresponded to the initial "spike" of loose PM-10 was computed using a Turbo-Pascal(r) computer program. Figure 3-1 depicts this spike area as the dark line on the left side of the plot. This proportion of spike area is presented in Table 4 in the column labeled as Aspike/Atotal.

5) The PM-10 spike mass per unit area for each run was computed as

PM-10 spike mass = (PM-10 mass) x (Aspike/Atotal) / (tunnel floor area)

and converted from mg/ft^2 to ton/acre using 4.797×10^{-5} (ton/acre) / (mg/ft^2)

6) The cumulative spike masses were computed by summing spike masses from preceding runs at each site.

For example, using data from WT002, runs 1 and 2

Run 1 PM-10 spike mass = ($0.157\ mg/m^3 \times 12.21\ m^3/min \times 10\ min$) x (0.178) / 2.5 ft^2 = 1.37 mg/ft^2 x (4.797×10^{-5} [ton/acre]/[mg/ft^2]) = 6.56×10^{-5} ton/acre

Run 2 PM-10 spike mass = ($0.499\ mg/m^3 \times 12.21\ m^3/min \times 10\ min$) x (0.602) / 2.5 ft^2 = 14.66 mg/ft^2 x (4.797×10^{-5} [ton/acre] / [mg/ft^2]) = 7.03×10^{-4} ton/acre

The cumulative spike mass, the amount of loose PM-10 assumed to come off if the first wind tunnel run had started at the higher wind speed of Run 2, is the sum of the two spike masses for Runs 1 and 2.

Cumulative spike mass = $0.656 \times 10^{-4} + 7.03 \times 10^{-4} = 7.69 \times 10^{-4}$ ton/acre

7) Blanks in Table 4 indicate runs for which 600 data point TSI data files were not available. Some files were corrupted or lost after download from the TSI Dust-Trak(r). Spike mass data are presented in Table 4 for all runs for which TSI data files are available.

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/ft^2	Spike mass ton/acre	Cumulative mass ton/acre
WT001	1	0.000	0.063	439.0	12.43	10	0.00	0.00E+00	0.00E+00
WT001	2	0.648	0.971	439.0	12.43	10	31.31	1.50E-03	1.50E-03
WT001	3	0.829	0.668	439.0	12.43	10	27.54	1.32E-03	2.82E-03
WT002	1	0.178	0.157	431.1	12.21	10	1.37	6.56E-05	6.56E-05
WT002	2	0.602	0.499	431.1	12.21	10	14.66	7.03E-04	7.69E-04
WT002	3	0.474	0.215	431.1	12.21	10	4.97	2.39E-04	1.01E-03
WT003	1	0.501	0.187	439.0	12.43	10	4.66	2.24E-04	2.24E-04
WT003	2	0.600	0.772	439.0	12.43	10	23.04	1.11E-03	1.33E-03
WT003	3	0.699	0.641	439.0	12.43	10	22.28	1.07E-03	2.40E-03
WT004	1		0.139	416.8	11.80	10			
WT004	2		0.058	416.8	11.80	10			
WT004	3		0.076	416.8	11.80	10			
WT005	1	0.273	0.182	408.9	11.58	10	2.30	1.10E-04	1.10E-04
WT005	2	0.792	0.131	408.9	11.58	10	4.80	2.30E-04	3.41E-04
WT006	1	0.656	1.777	418.4	11.85	10	55.27	2.65E-03	2.65E-03
WT006	2	0.708	2.058	418.4	11.85	10	69.09	3.31E-03	5.97E-03
WT006	3	0.434	1.662	418.4	11.85	10	34.16	1.64E-03	7.60E-03
WT007	1	0.426	0.071	416.8	11.80	10	1.43	6.85E-05	6.85E-05
WT007	2	0.692	0.637	416.8	11.80	10	20.80	9.98E-04	1.07E-03
WT007	3	0.563	0.292	416.8	11.80	10	7.77	3.73E-04	1.44E-03
WT008	1	0.306	0.018	427.9	12.12	10	0.27	1.28E-05	1.28E-05
WT008	2	0.441	0.055	427.9	12.12	10	1.18	5.64E-05	6.92E-05
WT008	3	0.533	0.163	427.9	12.12	10	4.21	2.02E-04	2.71E-04
WT009	1		0.183	433.4	12.27	10			
WT009	2		0.470	433.4	12.27	10			
WT009	3		0.213	433.4	12.27	10			
WT010	1	0.550	0.314	426.3	12.07	10	8.33	4.00E-04	4.00E-04
WT010	2	0.625	1.544	426.3	12.07	10	46.63	2.24E-03	2.64E-03
WT010	3	0.483	0.585	426.3	12.07	10	13.64	6.54E-04	3.29E-03
WT011	1	0.568	2.868	435.0	12.32	10	80.24	3.85E-03	3.85E-03
WT011	2	0.114	12.617	435.0	12.32	10	70.82	3.40E-03	7.25E-03
WT012	1	0.775	0.512	427.1	12.09	10	19.19	9.21E-04	9.21E-04
WT012	2	0.766	0.883	427.1	12.09	10	32.74	1.57E-03	2.49E-03
WT012	3	0.480	0.809	427.1	12.09	10	18.78	9.01E-04	3.39E-03
WT013	1	0.536	2.269	435.0	12.32	10	59.88	2.87E-03	2.87E-03
WT013	2	0.674	4.189	435.0	12.32	10	139.10	6.67E-03	9.55E-03
WT013	3	0.221	3.788	435.0	12.32	10	41.26	1.98E-03	1.15E-02
WT014	1	0.687	0.907	423.2	11.98	10	29.85	1.43E-03	1.43E-03
WT014	2	0.659	0.672	423.2	11.98	10	21.23	1.02E-03	2.45E-03
WT014	3	0.554	1.338	423.2	11.98	10	35.51	1.70E-03	4.15E-03
WT015	1	0.696	0.362	429.5	12.16	10	12.25	5.88E-04	5.88E-04

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/ft^2	Spike mass ton/acre	Cumulative mass ton/acre
WT015	2	0.594	0.339	429.5	12.16	10	9.80	4.70E-04	1.06E-03
WT015	3	0.743	0.435	429.5	12.16	10	15.72	7.54E-04	1.81E-03
WT016	1	0.809	1.093	435.8	12.34	10	43.63	2.09E-03	2.09E-03
WT016	2	0.618	0.334	435.8	12.34	10	10.19	4.89E-04	2.58E-03
WT016	3	0.882	1.489	435.8	12.34	10	64.84	3.11E-03	5.69E-03
WT017	1	0.869	1.330	431.1	12.21	10	56.43	2.71E-03	2.71E-03
WT017	2		0.377	431.1	12.21	10			
WT017	3		0.724	431.1	12.21	10			
WT018	1	0.622	1.343	435.0	12.32	10	41.17	1.97E-03	1.97E-03
WT018	2	0.777	1.055	435.0	12.32	10	40.37	1.94E-03	3.91E-03
WT018	3	0.419	1.500	435.0	12.32	10	31.00	1.49E-03	5.40E-03
WT019	1	0.715	0.513	441.4	12.50	10	18.33	8.79E-04	8.79E-04
WT019	2	0.715	0.717	441.4	12.50	10	25.61	1.23E-03	2.11E-03
WT019	3	0.631	0.645	441.4	12.50	10	20.35	9.76E-04	3.08E-03
WT020	1	0.600	0.234	448.5	12.70	10	7.13	3.42E-04	3.42E-04
WT020	2	0.734	0.267	448.5	12.70	10	9.96	4.78E-04	8.20E-04
WT020	3	0.673	0.294	448.5	12.70	10	10.05	4.82E-04	1.30E-03
WT021	1	0.825	0.282	436.6	12.36	10	11.50	5.52E-04	5.52E-04
WT021	2	0.504	0.374	436.6	12.36	10	9.32	4.47E-04	9.99E-04
WT021	3	0.819	0.353	436.6	12.36	10	14.29	6.86E-04	1.68E-03
WT022	1	0.437	0.100	439.8	12.45	10	2.18	1.04E-04	1.04E-04
WT022	2	0.694	0.205	439.8	12.45	10	7.09	3.40E-04	4.44E-04
WT022	3	0.510	0.141	439.8	12.45	10	3.58	1.72E-04	6.16E-04
WT023	1	0.909	1.555	447.7	12.68	10	71.70	3.44E-03	3.44E-03
WT023	2	0.426	1.938	447.7	12.68	10	41.90	2.01E-03	5.45E-03
WT023	3	0.262	2.518	447.7	12.68	10	33.43	1.60E-03	7.05E-03
WT024	1	0.570	1.573	444.5	12.59	10	45.16	2.17E-03	2.17E-03
WT024	2	0.170	2.652	444.5	12.59	10	22.75	1.09E-03	3.26E-03
WT024	3	0.767	1.613	444.5	12.59	10	62.33	2.99E-03	6.25E-03
WT025	1	0.802	1.628	446.9	12.65	10	66.08	3.17E-03	3.17E-03
WT025	2	0.563	1.866	446.9	12.65	10	53.22	2.55E-03	5.72E-03
WT025	3	0.619	1.382	446.9	12.65	10	43.28	2.08E-03	7.80E-03
WT026	1	0.614	0.332	431.9	12.23	10	9.96	4.78E-04	4.78E-04
WT026	2	0.746	0.650	431.9	12.23	10	23.71	1.14E-03	1.62E-03
WT026	3	0.587	0.798	431.9	12.23	10	22.90	1.10E-03	2.71E-03
WT027	1	0.843	0.590	440.6	12.48	10	24.83	1.19E-03	1.19E-03
WT027	2	0.687	0.485	440.6	12.48	10	16.61	7.97E-04	1.99E-03
WT027	3	0.722	1.282	440.6	12.48	10	46.19	2.22E-03	4.20E-03
WT028	1	0.616	0.942	432.7	12.25	10	28.43	1.36E-03	1.36E-03
WT028	2	0.503	1.147	432.7	12.25	10	28.25	1.36E-03	2.72E-03
WT028	3	0.768	1.342	432.7	12.25	10	50.53	2.42E-03	5.14E-03

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/ft^2	Spike mass ton/acre	Cumulative mass ton/acre
WT029	1	0.765	0.206	433.4	12.27	10	7.74	3.71E-04	3.71E-04
WT029	2	0.685	0.495	433.4	12.27	10	16.65	7.99E-04	1.17E-03
WT029	3	0.429	0.315	433.4	12.27	10	6.64	3.18E-04	1.49E-03
WT030	1	0.469	0.546	441.4	12.50	10	12.80	6.14E-04	6.14E-04
WT030	2	0.342	0.500	441.4	12.50	10	8.54	4.10E-04	1.02E-03
WT030	3	0.685	0.585	441.4	12.50	10	20.04	9.61E-04	1.98E-03
WT031-A	1	0.581	1.431	430.3	12.18	10	40.50	1.94E-03	1.94E-03
WT031-A	2	0.851	2.674	430.3	12.18	10	110.92	5.32E-03	7.26E-03
WT031-A	3	0.696	4.172	430.3	12.18	10	141.43	6.78E-03	1.40E-02
WT031-B	1		1.392	438.2	12.41	10			
WT031-B	2		2.665	438.2	12.41	10			
WT031-B	3		5.691	438.2	12.41	10			
WT031-C	1		3.599	443.7	12.56	10			
WT031-C	2		3.940	443.7	12.56	10			
WT031-C	3		5.689	443.7	12.56	10			
WT031-D	1		3.230	449.3	12.72	10			
WT031-D	2		1.538	449.3	12.72	10			
WT031-D	3		9.109	449.3	12.72	10			
WT031-E	1		1.656	429.5	12.16	10			
WT031-E	2		1.973	429.5	12.16	10			
WT031-E	3		2.748	429.5	12.16	10			
WT031-F	1		1.885	432.7	12.25	10			
WT031-F	2		1.598	432.7	12.25	10			
WT031-F	3		2.280	432.7	12.25	10			
WT031-G	1		1.032	438.2	12.41	10			
WT031-G	2		1.601	438.2	12.41	10			
WT031-G	3		1.672	438.2	12.41	10			
WT031-H	1		22.840	439.0	12.43	10			
WT031-H	2		19.953	439.0	12.43	10			
WT031-H	3		48.987	439.0	12.43	10			
WT032	1	0.349	0.156	436.6	12.36	10	2.69	1.29E-04	1.29E-04
WT032	2	0.260	0.115	436.6	12.36	10	1.48	7.10E-05	2.00E-04
WT032	3	0.369	0.125	436.6	12.36	10	2.28	1.09E-04	3.10E-04
WT033	1	0.767	0.653	439.8	12.45	10	24.95	1.20E-03	1.20E-03
WT033	2	0.582	0.631	439.8	12.45	10	18.28	8.77E-04	2.07E-03
WT033	3	0.516	0.597	439.8	12.45	10	15.34	7.36E-04	2.81E-03
WT034	1	0.656	1.245	432.7	12.25	10	39.99	1.92E-03	1.92E-03
WT034	2	0.374	2.073	432.7	12.25	10	37.97	1.82E-03	3.74E-03
WT034	3	0.518	4.244	432.7	12.25	10	107.83	5.17E-03	8.91E-03
WT035	1		0.930	438.2	12.41	10			
WT035	2		1.832	438.2	12.41	10			

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/m^2	Spike mass ton/acre	Cumulative mass ton/acre
WT035	3		5.148	438.2	12.41	10			
WT036	1	0.784	0.946	430.3	12.18	10	36.16	1.73E-03	1.73E-03
WT036	2	0.627	0.978	430.3	12.18	10	29.87	1.43E-03	3.17E-03
WT036	3	0.587	4.645	430.3	12.18	10	132.84	6.37E-03	9.54E-03
WT037	1	0.780	0.878	438.2	12.41	10	33.98	1.63E-03	1.63E-03
WT037	2	0.351	0.894	438.2	12.41	10	15.56	7.46E-04	2.38E-03
WT037	3	0.571	2.571	438.2	12.41	10	72.84	3.49E-03	5.87E-03
WT038	1	0.834	0.171	429.5	12.16	10	6.94	3.33E-04	3.33E-04
WT038	2	0.497	0.184	429.5	12.16	10	4.45	2.13E-04	5.46E-04
WT038	3	0.699	0.248	429.5	12.16	10	8.43	4.05E-04	9.51E-04
WT039	1	0.709	0.508	435.0	12.32	10	17.75	8.52E-04	8.52E-04
WT039	2	0.397	0.442	435.0	12.32	10	8.64	4.15E-04	1.27E-03
WT039	3	0.303	0.744	435.0	12.32	10	11.11	5.33E-04	1.80E-03
WT040	1	0.575	0.908	439.8	12.45	10	26.00	1.25E-03	1.25E-03
WT040	2	0.278	3.172	439.8	12.45	10	43.85	2.10E-03	3.35E-03
WT040	3	0.681	1.336	439.8	12.45	10	45.34	2.18E-03	5.53E-03
WT041	1	0.761	0.872	430.3	12.18	10	32.34	1.55E-03	1.55E-03
WT041	2	0.437	0.770	430.3	12.18	10	16.41	7.87E-04	2.34E-03
WT041	3	0.717	0.849	430.3	12.18	10	29.66	1.42E-03	3.76E-03
WT042	1	0.717	0.285	438.2	12.41	10	10.14	4.87E-04	4.87E-04
WT042	2	0.246	0.610	438.2	12.41	10	7.46	3.58E-04	8.44E-04
WT042	3	0.753	0.460	438.2	12.41	10	17.19	8.25E-04	1.67E-03
WT043	1	0.577	2.353	443.7	12.56	10	68.29	3.28E-03	3.28E-03
WT043	2	0.542	3.251	443.7	12.56	10	88.56	4.25E-03	7.52E-03
WT043	3	0.310	6.955	443.7	12.56	10	108.25	5.19E-03	1.27E-02
WT044	1	0.535	0.339	429.5	12.16	10	8.83	4.23E-04	4.23E-04
WT044	2	0.572	0.523	429.5	12.16	10	14.54	6.98E-04	1.12E-03
WT044	3	0.814	0.853	429.5	12.16	10	33.79	1.62E-03	2.74E-03
WT045	1	0.848	1.535	439.8	12.45	10	64.87	3.11E-03	3.11E-03
WT045	2	0.747	0.933	439.8	12.45	10	34.70	1.66E-03	4.78E-03
WT045	3	0.675	1.664	439.8	12.45	10	55.97	2.68E-03	7.46E-03
WT046	1	0.618	0.353	432.7	12.25	10	10.68	5.13E-04	5.13E-04
WT046	2	0.595	0.633	432.7	12.25	10	18.47	8.86E-04	1.40E-03
WT046	3	0.912	1.395	432.7	12.25	10	62.35	2.99E-03	4.39E-03
WT047	1	0.769	0.808	438.2	12.41	10	30.82	1.48E-03	1.48E-03
WT047	2	0.324	1.009	438.2	12.41	10	16.22	7.78E-04	2.26E-03
WT047	3	0.000	1.155	438.2	12.41	10	0.00	0.00E+00	2.26E-03
WT048	1	0.000	0.063	427.0	12.09	10	0.00	0.00E+00	0.00E+00
WT048	2	0.333	0.107	427.0	12.09	10	1.73	8.28E-05	8.28E-05
WT048	3	0.467	0.129	427.0	12.09	10	2.91	1.40E-04	2.23E-04
WT048	4	0.345			0.00	10			

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/ft^2	Spike mass ton/acre	Cumulative mass ton/acre
WT049	1	0.328	0.071	436.7	12.37	10	1.15	5.53E-05	5.53E-05
WT049	2	0.339	0.243	436.7	12.37	10	4.07	1.95E-04	2.51E-04
WT049	3	0.626	0.712	436.7	12.37	10	22.04	1.06E-03	1.31E-03
WT050	1	0.666	0.681	418.4	11.85	10	21.50	1.03E-03	1.03E-03
WT050	2		0.770	418.4	11.85	10			
WT050	3		5.853	418.4	11.85	10			
WT050	4		1.847	421.7	11.94	10			
WT051	1	0.000	0.123	447.7	12.68	10	0.00	0.00E+00	0.00E+00
WT051	2	0.173	0.368	447.7	12.68	10	3.22	1.55E-04	1.55E-04
WT051	3	0.520	0.593	447.7	12.68	10	15.64	7.50E-04	9.05E-04
WT051	4	0.360	0.403	447.7	12.68	10	7.36	3.53E-04	1.26E-03
WT052	1	0.000	0.071	445.5	12.62	10	0.00	0.00E+00	0.00E+00
WT052	2		0.141	445.5	12.62	10			
WT052	3		0.244	443.8	12.57	10			
WT052	4		0.218	442.1	12.52	10			
WT053	1	0.341	1.035	466.6	13.21	10	18.64	8.94E-04	8.94E-04
WT053	2		0.966	460.4	13.04	10			
WT053	3		2.573	457.9	12.97	10			
WT053	4		0.652	457.9	12.97	10			
WT054	1	0.687	0.154	438.2	12.41	10	5.25	2.52E-04	2.52E-04
WT054	2		0.237	438.2	12.41	10			
WT054	3		0.598	438.2	12.41	10			
WT054	4		0.532	438.2	12.41	10			
WT055	1	0.528	0.350	447.7	12.68	10	9.38	4.50E-04	4.50E-04
WT055	2		1.076	447.7	12.68	10			
WT055	3		1.360	447.7	12.68	10			
WT055	4		0.542	447.7	12.68	10			
WT056	1	0.334	0.153	439.0	12.43	10	2.54	1.22E-04	1.22E-04
WT056	2		0.305	439.0	12.43	10			
WT056	3		0.283	439.0	12.43	10			
WT056	4		0.348	439.0	12.43	10			
WT057	1		0.063	443.7	12.56	10			
WT057	2		0.163	443.7	12.56	10			
WT057	3		0.107	443.7	12.56	10			
WT057	4		0.244	443.7	12.56	10			
WT058	1	0.559	0.713	439.0	12.43	10	19.82	9.51E-04	9.51E-04
WT058	2	0.610	0.866	439.0	12.43	10	26.25	1.26E-03	2.21E-03
WT058	3	0.670	1.472	439.0	12.43	10	49.07	2.35E-03	4.56E-03
WT058	4	0.251	0.825	439.0	12.43	10	10.29	4.94E-04	5.06E-03
WT059	1	0.200	0.150	435.8	12.34	10	1.48	7.09E-05	7.09E-05
WT059	2	0.435	0.210	435.8	12.34	10	4.51	2.16E-04	2.87E-04

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/ft^2	Spike mass ton/acre	Cumulative mass ton/acre
WT059	3	0.585	0.212	435.8	12.34	10	6.12	2.94E-04	5.81E-04
WT059	4	0.395	0.192	435.8	12.34	10	3.74	1.80E-04	7.60E-04
WT060	1	0.721	0.318	441.4	12.50	10	11.46	5.50E-04	5.50E-04
WT060	2	0.395	0.253	441.4	12.50	10	5.00	2.40E-04	7.90E-04
WT060	3	0.463	0.519	441.4	12.50	10	12.01	5.76E-04	1.37E-03
WT060	4	0.538	0.238	441.4	12.50	10	6.40	3.07E-04	1.67E-03
WT061	1	0.619	0.736	437.4	12.39	10	22.57	1.08E-03	1.08E-03
WT061	2	0.794	1.212	437.4	12.39	10	47.69	2.29E-03	3.37E-03
WT061	3	0.620	2.012	437.4	12.39	10	61.82	2.97E-03	6.34E-03
WT061	4	0.515	1.055	437.4	12.39	10	26.93	1.29E-03	7.63E-03
WT062	1	0.673	0.438	446.9	12.65	10	14.93	7.16E-04	7.16E-04
WT062	2	0.889	1.155	446.9	12.65	10	51.98	2.49E-03	3.21E-03
WT062	3	0.723	2.788	446.9	12.65	10	102.07	4.90E-03	8.11E-03
WT062	4	0.562	1.310	446.9	12.65	10	37.28	1.79E-03	9.89E-03
WT063	1	0.576	0.246	449.3	12.72	10	7.21	3.46E-04	3.46E-04
WT063	2	0.229	0.950	449.3	12.72	10	11.05	5.30E-04	8.76E-04
WT063	3	0.655	0.424	449.3	12.72	10	14.14	6.78E-04	1.55E-03
WT063	4	0.821	1.111	449.3	12.72	10	46.44	2.23E-03	3.78E-03
WT064	1	0.645	0.327	436.6	12.36	10	10.44	5.01E-04	5.01E-04
WT064	2	0.605	0.415	436.6	12.36	10	12.41	5.95E-04	1.10E-03
WT064	3	0.840	1.838	436.6	12.36	10	76.33	3.66E-03	4.76E-03
WT064	4	0.335	0.654	436.6	12.36	10	10.84	5.20E-04	5.28E-03
WT065	1	0.706	0.884	441.5	12.50	10	31.20	1.50E-03	1.50E-03
WT065	2	0.523	0.819	441.5	12.50	10	21.41	1.03E-03	2.52E-03
WT065	3	0.559	0.790	441.5	12.50	10	22.09	1.06E-03	3.58E-03
WT065	4	0.694	1.445	441.5	12.50	10	50.15	2.41E-03	5.99E-03
WT066	1		0.301	435.3	12.33	10			
WT066	2	1.000	0.393	435.3	12.33	10	19.38	9.30E-04	9.30E-04
WT066	3	1.000	0.628	435.3	12.33	10	30.96	1.49E-03	2.41E-03
WT066	4	1.000	0.406	435.3	12.33	10	20.02	9.60E-04	3.38E-03
WT067	1	0.401	0.316	449.5	12.73	10	6.44	3.09E-04	3.09E-04
WT067	2	0.293	0.177	449.5	12.73	10	2.64	1.27E-04	4.36E-04
WT067	3	0.625	0.355	449.5	12.73	10	11.30	5.42E-04	9.78E-04
WT067	4					10			
WT068	1	0.360	0.134	439.0	12.43	10	2.40	1.15E-04	1.15E-04
WT068	2	0.487	0.394	439.0	12.43	10	9.55	4.58E-04	5.73E-04
WT068	3	0.451	0.453	439.0	12.43	10	10.16	4.87E-04	1.06E-03
WT068	4	0.556	0.361	439.0	12.43	10	9.98	4.79E-04	1.54E-03
WT069	1	0.605	0.435	442.1	12.52	10	13.18	6.32E-04	6.32E-04
WT069	2	0.604	2.259	442.1	12.52	10	68.28	3.28E-03	3.91E-03
WT069	3	0.792	7.572	442.1	12.52	10	300.49	1.44E-02	1.83E-02

Table 4 - Computation of individual and cumulative spike masses from TSI concentration and tunnel flow rate

Site	Run	Aspike/Atotal	Avg TSI conc (mg/m^3)	Qactual (ft^3/min)	Qactual m^3/min	Duration min	Spike mass mg/ft^2	Spike mass ton/acre	Cumulative mass ton/acre
WT069	4	0.641	2.345	442.1	12.52	10	75.27	3.61E-03	2.19E-02
WT070	1	0.601	0.180	435.8	12.34	10	5.34	2.56E-04	2.56E-04
WT070	2	0.682	0.459	435.8	12.34	10	15.46	7.42E-04	9.98E-04
WT070	3	0.468	1.413	435.8	12.34	10	32.67	1.57E-03	2.57E-03
WT070	4	0.302	0.603	435.8	12.34	10	8.98	4.31E-04	3.00E-03
WT071	1	0.801	1.416	432.7	12.25	10	55.57	2.67E-03	2.67E-03
WT071	2	0.725	5.440	432.7	12.25	10	193.29	9.27E-03	1.19E-02
WT071	3	0.682	9.205	432.7	12.25	10	307.76	1.48E-02	2.67E-02
WT071	4	0.668	3.670	432.7	12.25	10	120.10	5.76E-03	3.25E-02
WT072	1	0.491	0.481	443.7	12.56	10	11.87	5.69E-04	5.69E-04
WT072	2	0.552	0.760	443.7	12.56	10	21.10	1.01E-03	1.58E-03
WT072	3	0.741	2.451	443.7	12.56	10	91.34	4.38E-03	5.96E-03
WT072	4	0.829	1.860	443.7	12.56	10	77.53	3.72E-03	9.68E-03
WT073	1	0.421	0.171	431.1	12.21	10	3.52	1.69E-04	1.69E-04
WT073	2	0.371	0.472	431.1	12.21	10	8.54	4.10E-04	5.79E-04
WT073	3	0.403	0.980	431.1	12.21	10	19.27	9.24E-04	1.50E-03
WT073	4	0.305	0.802	431.1	12.21	10	11.93	5.72E-04	2.08E-03
WT074	1	0.318	0.084	425.5	12.05	10	1.29	6.18E-05	6.18E-05
WT074	2	0.502	0.123	425.5	12.05	10	2.98	1.43E-04	2.05E-04
WT074	3	0.576	0.197	425.5	12.05	10	5.47	2.63E-04	4.67E-04
WT074	4	0.623	0.247	425.5	12.05	10	7.41	3.56E-04	8.23E-04
WT075	1	0.713	0.193	437.4	12.39	10	6.82	3.27E-04	3.27E-04
WT075	2	0.562	0.242	437.4	12.39	10	6.74	3.23E-04	6.50E-04
WT075	3	0.635	0.740	437.4	12.39	10	23.26	1.12E-03	1.77E-03
WT075	4	0.223	0.513	437.4	12.39	10	5.67	2.72E-04	2.04E-03
WT076	1	0.401	0.252	431.1	12.21	10	4.93	2.37E-04	2.37E-04
WT076	2	0.257	0.454	431.1	12.21	10	5.71	2.74E-04	5.10E-04
WT076	3	0.781	0.599	431.1	12.21	10	22.85	1.10E-03	1.61E-03
WT076	4	0.900	0.433	431.1	12.21	10	19.02	9.13E-04	2.52E-03
WT077	1	0.770	0.447	443.7	12.56	10	17.30	8.30E-04	8.30E-04
WT077	2	0.352	0.452	443.7	12.56	10	8.01	3.84E-04	1.21E-03
WT077	3	0.749	3.148	443.7	12.56	10	118.51	5.69E-03	6.90E-03
WT077	4	0.515	1.950	443.7	12.56	10	50.43	2.42E-03	9.32E-03
WT078	1	0.532	2.453	431.9	12.23	10	63.82	3.06E-03	3.06E-03
WT078	2	0.732	43.902	431.9	12.23	10	1572.55	7.54E-02	7.85E-02
WT078	3	0.320	68.618	431.9	12.23	10	1073.33	5.15E-02	1.30E-01
WT078	4	0.588	5.040	431.9	12.23	10	145.03	6.96E-03	1.37E-01

Section 5 - 1995 Stable and Unstable cumulative fluxes and spike masses

The tables in this section represent a consolidation of the results presented in Sections 3 (fluxes) and 4 (spike masses). The tables present results organized according to the following scheme.

Table #	Major soil group	Stability
no table	1	Stable
no table	1	Unstable
5.2.0	2	Stable
5.2.1	2	Unstable
5.3.0	3	Stable
5.3.1	3	Unstable
no table	4	Stable
no table	4	Unstable
5.5.0	5	Stable
5.5.1	5	Unstable
5.6.0	6	Stable
no table	6	Unstable
5.7.0	7	Stable
no table	7	Unstable
5.8.0	8	Stable
5.8.1	8	Unstable
5.9.0	9	Stable
5.9.1	9	Unstable

If no data were available for a particular soil group, there is no corresponding table in this section.

Each table contains wind tunnel site designation, wind tunnel run number, major soil group designation, 1999 stability classification, average erosive wind speed extrapolated to z = 10 meters (U10), cumulative spike-corrected flux, ton/acre/hour, and cumulative spike mass (ton/acre).

Explanations of missing tables are given below:

Soil group 1	steep slopes, mountain-sides, inaccessible to test equipment
Soil group 4	located mostly outside the Las Vegas Valley
Soil group 6 - unstable	no tested sites corresponded to this classification
Soil group 7 - unstable	no tested sites corresponded to this classification

Table 5.2.0 - Vacant land PM-10 emission factor data. Major soil group 2, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT049	1	2	0	21.1	4.29E-04	5.53E-05
WT048	1	2	0	21.9	5.03E-04	0.00E+00
WT048	2	2	0	25.3	1.29E-03	8.28E-05
WT035	1	2	0	25.7		
WT049	2	2	0	28.5	2.62E-03	2.51E-04
WT068	1	2	0	29.5	1.04E-03	1.15E-04
WT035	2	2	0	29.6		
WT048	3	2	0	30.2	2.09E-03	2.23E-04
WT044	1	2	0	30.3	2.20E-03	4.23E-04
WT068	2	2	0	33.1	3.96E-03	5.73E-04
WT038	1	2	0	33.2	3.59E-04	3.33E-04
WT044	2	2	0	33.4	5.44E-03	1.12E-03
WT049	3	2	0	34.2	6.59E-03	1.31E-03
WT035	3	2	0	34.3		
WT012	1	2	0	35.4	1.66E-03	9.21E-04
WT044	3	2	0	36.9	7.78E-03	2.74E-03
WT040	1	2	0	37.1	5.85E-03	1.25E-03
WT017	1	2	0	37.3	2.62E-03	2.71E-03
WT038	2	2	0	37.7	1.55E-03	5.46E-04
WT015	1	2	0	37.9	1.55E-03	5.88E-04
WT042	1	2	0	39.3	1.13E-03	4.87E-04
WT040	2	2	0	40.6	4.14E-02	3.35E-03
WT068	3	2	0	41.4	7.59E-03	1.06E-03
WT012	2	2	0	41.5	4.70E-03	2.49E-03
WT038	3	2	0	41.5	2.55E-03	9.51E-04
WT034	1	2	0	41.6	6.46E-03	1.92E-03
WT041	1	2	0	42.2	3.09E-03	1.55E-03
WT036	1	2	0	42.7	3.04E-03	1.73E-03
WT017	2	2	0	43.8		
WT039	1	2	0	43.8	2.16E-03	8.52E-04
WT045	1	2	0	44.0	3.58E-03	3.11E-03
WT040	3	2	0	44.8	4.79E-02	5.53E-03
WT068	4	2	0	44.8	9.89E-03	1.54E-03
WT037	1	2	0	45.0	2.92E-03	1.63E-03

Table 5.2.0 - Vacant land PM-10 emission factor data. Major soil group 2, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT015	2	2	0	45.5	3.47E-03	1.06E-03
WT034	2	2	0	46.7	2.62E-02	3.74E-03
WT025	1	2	0	48.0	5.03E-03	3.17E-03
WT041	2	2	0	48.6	9.49E-03	2.34E-03
WT012	3	2	0	49.0	1.09E-02	3.39E-03
WT039	2	2	0	49.6	6.01E-03	1.27E-03
WT036	2	2	0	49.8	8.47E-03	3.17E-03
WT045	2	2	0	50.5	7.16E-03	4.78E-03
WT017	3	2	0	50.5		
WT037	2	2	0	50.9	1.17E-02	2.38E-03
WT034	3	2	0	52.4	5.75E-02	8.91E-03
WT015	3	2	0	53.1	5.07E-03	1.81E-03
WT025	2	2	0	53.2	1.78E-02	5.72E-03
WT041	3	2	0	53.6	1.31E-02	3.76E-03
WT042	2	2	0	54.7	7.95E-03	8.44E-04
WT037	3	2	0	55.8	2.87E-02	5.87E-03
WT036	3	2	0	56.1	3.78E-02	9.54E-03
WT039	3	2	0	56.2	1.37E-02	1.80E-03
WT045	3	2	0	56.8	1.55E-02	7.46E-03
WT042	3	2	0	60.7	9.61E-03	1.67E-03
WT025	3	2	0	61.7	2.60E-02	7.80E-03
WT048	4	2	0			

Table 5.2.1 - Vacant land PM-10 emission factor data. Major soil group 2, Unstable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT055	1	2	1	30.7	2.40E-03	4.50E-04
WT032	1	2	1	32.5	1.28E-03	1.29E-04
WT043	1	2	1	34.2	1.55E-02	3.28E-03
WT050	1	2	1	34.8	4.95E-04	1.03E-03
WT018	1	2	1	34.9	7.70E-03	1.97E-03
WT054	1	2	1	35.1	6.05E-04	2.52E-04
WT055	2	2	1	35.2		
WT016	1	2	1	35.3	3.16E-03	2.09E-03
WT032	2	2	1	36.4	2.26E-03	2.00E-04
WT019	1	2	1	38.2	2.17E-03	8.79E-04
WT021	1	2	1	38.6	6.87E-04	5.52E-04
WT050	2	2	1	38.8		
WT032	3	2	1	39.3	3.19E-03	3.10E-04
WT043	2	2	1	39.5	3.88E-02	7.52E-03
WT016	2	2	1	39.8	4.97E-03	2.58E-03
WT022	1	2	1	41.2	6.18E-04	1.04E-04
WT019	2	2	1	41.7	5.25E-03	2.11E-03
WT021	2	2	1	41.7	3.34E-03	9.99E-04
WT054	2	2	1	42.4		
WT055	3	2	1	43.6		
WT016	3	2	1	44.2	7.64E-03	5.69E-03
WT055	4	2	1	44.7		
WT050	4	2	1	44.8		
WT018	2	2	1	44.9	1.13E-02	3.91E-03
WT022	2	2	1	45.3	1.46E-03	4.44E-04
WT050	3	2	1	45.3		
WT043	3	2	1	45.9	1.14E-01	1.27E-02
WT019	3	2	1	46.3	8.82E-03	3.08E-03
WT021	3	2	1	47.9	4.26E-03	1.68E-03
WT018	3	2	1	51.2	2.45E-02	5.40E-03
WT054	3	2	1	52.7		
WT022	3	2	1	53.5	2.31E-03	6.16E-04
WT054	4	2	1	53.9		

Table 5.3.0 - Vacant land PM-10 emission factor data. Major soil group 3, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT001	1	3	0	29.0	5.16E-04	0.00E+00
WT046	1	3	0	41.7	1.91E-03	5.13E-04
WT001	2	3	0	45.8	5.69E-03	1.50E-03
WT046	2	3	0	48.1	5.67E-03	1.40E-03
WT046	3	3	0	52.4	7.53E-03	4.39E-03
WT001	3	3	0	52.9	7.39E-03	2.82E-03

Table 5.3.1 - Vacant land PM-10 emission factor data. Major soil group 3, Unstable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT029	1	3	1	30.8	6.39E-04	3.71E-04
WT029	2	3	1	34.0	2.90E-03	1.17E-03
WT029	3	3	1	37.0	5.42E-03	1.49E-03

Table 5.5.0 - Vacant land PM-10 emission factor data. Major soil group 5, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT069	1	5	0	28.7	2.52E-03	6.32E-04
WT065	1	5	0	30.9	1.24E-03	1.50E-03
WT069	2	5	0	32.5	1.64E-02	3.91E-03
WT070	1	5	0	34.3	9.29E-04	2.56E-04
WT007	1	5	0	34.5	3.51E-04	6.85E-05
WT064	1	5	0	35.1	4.76E-03	5.01E-04
WT065	2	5	0	36.8	3.93E-03	2.52E-03
WT063	1	5	0	37.8	1.46E-03	3.46E-04
WT062	1	5	0	39.9	2.12E-03	7.16E-04
WT070	2	5	0	41.2	3.05E-03	9.98E-04
WT023	1	5	0	41.3	2.20E-03	3.44E-03
WT069	3	5	0	41.9	4.11E-02	1.83E-02
WT033	1	5	0	42.1	2.27E-03	1.20E-03
WT064	2	5	0	43.9	9.67E-03	1.10E-03
WT069	4	5	0	44.4	5.42E-02	2.19E-02
WT065	3	5	0	45.5	8.02E-03	3.58E-03
WT062	2	5	0	46.4	4.10E-03	3.21E-03
WT063	2	5	0	46.8	1.28E-02	8.76E-04
WT007	2	5	0	46.9	3.14E-03	1.07E-03
WT033	2	5	0	47.4	6.21E-03	2.07E-03
WT065	4	5	0	47.6	9.81E-03	5.99E-03
WT023	2	5	0	48.6	1.96E-02	5.45E-03
WT007	3	5	0	49.9	4.85E-03	1.44E-03
WT070	3	5	0	50.1	1.45E-02	2.57E-03
WT070	4	5	0	51.4	2.07E-02	3.00E-03
WT033	3	5	0	52.6	1.05E-02	2.81E-03
WT064	3	5	0	54.5	1.16E-02	4.76E-03
WT064	4	5	0	54.8	2.64E-02	5.28E-03
WT023	3	5	0	57.2	4.89E-02	7.05E-03
WT063	3	5	0	57.6	1.50E-02	1.55E-03
WT063	4	5	0	58.8	1.81E-02	3.78E-03
WT062	3	5	0	59.2	1.62E-02	8.11E-03
WT062	4	5	0	60.1	2.52E-02	9.89E-03

Table 5.5.1 - Vacant land PM-10 emission factor data. Major soil group 5, Unstable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT071	2	5	1	29.6	2.72E-02	1.19E-02
WT071	3	5	1	34.6	7.22E-02	2.67E-02
WT071	4	5	1	37.0	9.09E-02	3.25E-02
WT061	1	5	1	37.8	4.19E-03	1.08E-03
WT061	2	5	1	43.6	7.99E-03	3.37E-03
WT061	3	5	1	53.4	1.97E-02	6.34E-03
WT061	4	5	1	54.5	2.75E-02	7.63E-03

Table 5.6.0 - Vacant land PM-10 emission factor data. Major soil group 6, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT002	1	6	0	22.3	1.61E-03	6.56E-05
WT011	1	6	0	25.9	1.90E-02	3.85E-03
WT002	2	6	0	27.7	4.48E-03	7.69E-04
WT028	1	6	0	28.3	5.41E-03	1.36E-03
WT002	3	6	0	28.9	5.98E-03	1.01E-03
WT028	2	6	0	31.4	1.40E-02	2.72E-03
WT026	1	6	0	33.5	1.80E-03	4.78E-04
WT011	2	6	0	33.6	1.92E-01	7.25E-03
WT066	1	6	0	34.9		
WT028	3	6	0	36.2	1.87E-02	5.14E-03
WT067	1	6	0	37.7	2.77E-03	3.09E-04
WT027	1	6	0	38.2	1.38E-03	1.19E-03
WT026	2	6	0	38.4	4.23E-03	1.62E-03
WT066	2	6	0	39.7	2.35E-03	9.30E-04
WT030	1	6	0	42.2	4.31E-03	6.14E-04
WT027	2	6	0	43.0	3.62E-03	1.99E-03
WT003	1	6	0	43.3	1.22E-03	2.24E-04
WT026	3	6	0	44.2	9.12E-03	2.71E-03
WT066	3	6	0	46.9	7.55E-03	2.41E-03
WT067	2	6	0	46.9	7.01E-03	4.36E-04
WT027	3	6	0	49.1	9.08E-03	4.20E-03
WT003	2	6	0	50.0	5.87E-03	1.33E-03
WT030	2	6	0	50.1	9.17E-03	1.02E-03
WT066	4	6	0	50.5		3.38E-03
WT003	3	6	0	51.3	8.74E-03	2.40E-03
WT067	3	6	0	55.8	1.76E-02	9.78E-04
WT030	3	6	0	56.9	1.19E-02	1.98E-03
WT067	4	6	0			

Table 5.7.0 - Vacant land PM-10 emission factor data. Major soil group 7, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT074	1	7	0	31.9	5.60E-04	6.18E-05
WT072	1	7	0	32.1	3.63E-03	5.69E-04
WT074	2	7	0	37.3	1.26E-03	2.05E-04
WT072	2	7	0	37.9	8.79E-03	1.58E-03
WT073	1	7	0	39.0	1.26E-03	1.69E-04
WT047	1	7	0	40.3	2.81E-03	1.48E-03
WT047	2	7	0	44.1	1.32E-02	2.26E-03
WT073	2	7	0	44.4	5.53E-03	5.79E-04
WT072	3	7	0	45.2	1.87E-02	5.96E-03
WT074	3	7	0	45.9	2.34E-03	4.67E-04
WT072	4	7	0	48.3	2.36E-02	9.68E-03
WT047	3	7	0	48.9	3.07E-02	2.26E-03
WT074	4	7	0	49.1	3.59E-03	8.23E-04
WT073	3	7	0	53.0	1.43E-02	1.50E-03
WT073	4	7	0	56.0	2.25E-02	2.08E-03

Table 5.8.0 - Vacant land PM-10 emission factor data. Major soil group 8, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT010	1	8	0	18.4	1.95E-03	4.00E-04
WT010	2	8	0	24.5	1.06E-02	2.64E-03
WT051	1	8	0	27.2	6.50E-04	0.00E+00
WT008	1	8	0	29.7	0.00E+00	1.28E-05
WT052	1	8	0	30.9	9.75E-03	0.00E+00
WT006	1	8	0	31.8	8.99E-03	2.65E-03
WT051	2	8	0	33.5	2.11E-03	1.55E-04
WT008	2	8	0	35.0	2.14E-04	6.92E-05
WT010	3	8	0	35.7	1.50E-02	3.29E-03
WT052	2	8	0	37.0		
WT014	1	8	0	37.4	4.16E-03	1.43E-03
WT004	1	8	0	37.5		
WT006	2	8	0	37.6	1.78E-02	5.97E-03
WT009	1	8	0	38.0		
WT006	3	8	0	38.9	3.17E-02	7.60E-03
WT008	3	8	0	39.6	1.16E-03	2.71E-04
WT051	3	8	0	40.3	3.73E-03	9.05E-04
WT014	2	8	0	40.6	7.47E-03	2.45E-03
WT051	4	8	0	41.5	5.62E-03	1.26E-03
WT009	2	8	0	42.3		
WT052	3	8	0	44.4		
WT004	2	8	0	44.7		
WT014	3	8	0	45.8	1.63E-02	4.15E-03
WT052	4	8	0	46.1		
WT004	3	8	0	46.6		
WT009	3	8	0	47.8		

Table 5.8.1 - Vacant land PM-10 emission factor data. Major soil group 8, Unstable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT005	1	8	1	22.9	1.62E-03	1.10E-04
WT056	1	8	1	27.9	1.28E-03	1.22E-04
WT005	2	8	1	28.1	1.93E-03	3.41E-04
WT053	1	8	1	28.4	1.10E-02	8.94E-04
WT057	1	8	1	30.2		
WT057	2	8	1	33.5		
WT031-G	1	8	1	33.6		
WT053	2	8	1	33.7		
WT056	2	8	1	33.9		
WT031-H	1	8	1	36.2		
WT057	3	8	1	36.9		
WT031-F	1	8	1	38.1		
WT031-G	2	8	1	38.6		
WT013	1	8	1	38.7	1.61E-02	2.87E-03
WT031-A	1	8	1	38.8	9.02E-03	1.94E-03
WT031-B	1	8	1	39.0		
WT056	3	8	1	41.1		
WT031-C	1	8	1	41.5		
WT031-H	2	8	1	41.6		
WT031-G	3	8	1	42.5		
WT031-E	1	8	1	42.9		
WT056	4	8	1	43.1		
WT057	4	8	1	43.1		
WT053	3	8	1	43.2		
WT031-F	2	8	1	43.8		
WT053	4	8	1	44.2		
WT031-A	2	8	1	44.7	1.51E-02	7.26E-03
WT020	1	8	1	44.7	1.30E-03	3.42E-04
WT031-B	2	8	1	44.9		
WT031-H	3	8	1	44.9		
WT020	2	8	1	45.1	2.31E-03	8.20E-04
WT031-D	1	8	1	47.1		
WT031-A	3	8	1	47.2	3.44E-02	1.40E-02
WT031-C	2	8	1	47.7		

Table 5.8.1 - Vacant land PM-10 emission factor data. Major soil group 8, Unstable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT031-B	3	8	1	47.9		
WT031-F	3	8	1	48.2		
WT013	2	8	1	48.7	3.72E-02	9.55E-03
WT031-E	2	8	1	49.5		
WT031-C	3	8	1	50.4		
WT031-E	3	8	1	52.7		
WT031-D	2	8	1	54.2		
WT013	3	8	1	54.8	8.26E-02	1.15E-02
WT020	3	8	1	55.7	3.69E-03	1.30E-03
WT031-D	3	8	1	59.6		

Table 5.9.0 - Vacant land PM-10 emission factor data. Major soil group 9, Stable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT060	1	9	0	25.4	1.26E-03	5.50E-04
WT076	1	9	0	28.8	2.05E-03	2.37E-04
WT060	2	9	0	30.4	3.38E-03	7.90E-04
WT077	1	9	0	32.5	1.52E-03	8.30E-04
WT058	1	9	0	32.8	4.71E-03	9.51E-04
WT076	2	9	0	33.7	6.89E-03	5.10E-04
WT059	1	9	0	34.7	1.49E-03	7.09E-05
WT060	3	9	0	37.9	7.51E-03	1.37E-03
WT075	1	9	0	38.4	7.30E-04	3.27E-04
WT077	2	9	0	38.6	5.83E-03	1.21E-03
WT059	2	9	0	40.8	3.07E-03	2.87E-04
WT076	3	9	0	41.0	8.81E-03	1.61E-03
WT058	2	9	0	41.3	9.82E-03	2.21E-03
WT060	4	9	0	41.3	9.03E-03	1.67E-03
WT077	3	9	0	44.7	1.82E-02	6.90E-03
WT076	4	9	0	45.1	9.43E-03	2.52E-03
WT075	2	9	0	47.3	2.18E-03	6.50E-04
WT077	4	9	0	47.9	3.29E-02	9.32E-03
WT058	3	9	0	50.4	1.73E-02	4.56E-03
WT058	4	9	0	51.6	2.66E-02	5.06E-03
WT059	3	9	0	52.4	4.25E-03	5.81E-04
WT059	4	9	0	52.6	5.77E-03	7.60E-04
WT075	3	9	0	57.7	6.22E-03	1.77E-03
WT075	4	9	0	60.7	1.21E-02	2.04E-03

Table 5.9.1 - Vacant land PM-10 emission factor data. Major soil group 9, Unstable

Site	Run	Major soil group	Unstable (y=1, n=0)	U10 (mph)	cumulative flux spike-corrected (ton/acre/hour)	Cumulative spike mass (ton/acre)
WT078	1	9	1	24.9	1.75E-02	3.06E-03
WT078	2	9	1	33.2	1.98E-01	7.85E-02
WT024	1	9	1	34.2	1.05E-02	2.17E-03
WT078	3	9	1	40.8	9.18E-01	1.30E-01
WT024	2	9	1	42.5	4.49E-02	3.26E-03
WT078	4	9	1	44.1	9.49E-01	1.37E-01
WT024	3	9	1	47.5	5.07E-02	6.25E-03

Sections A and B - 1995 Unstable and Stable cumulative fluxes and spikes - sorted by wind speed category

Data in the tables in Section A and B are organized as follows:

Wind speed category (extrapolated to z=10 m)	Unstable all soil group Table #	Stable all soil groups Table #
15-19.9 mph		B.0
20-24.9 mph	A.1	B.1
25-29.9 mph	A.2	B.2
30-34.9 mph	A.3	B.3
35-39.9 mph	A.4	B.4
40-44.9 mph	A.5	B.5
45-49.9 mph	A.6	B.6
50-54.9 mph	A.7	B.7
55-59.9 mph	A.8	B.8
60-64.9 mph		B.9

These tables contain the data and computations of the geometric mean spike-corrected cumulative fluxes (ton/acre/hour) and cumulative spike masses (ton/acre), for all soil groups in each wind-speed range.

To generate these tables, data from the Section 5 Tables was combined, and sorted by wind speed range and surface stability category, and exported to Tables A.1-A.8 and B.0 through B.9. The flux and spike mass data were then log10 transformed, and computations of mean and standard deviation were run on the log10-transformed data. The log10means and standard deviations were then back-transformed to generate the geometric mean data. The following formula were used for the back-transformations:

geometric mean - 1 standard deviation	$10^{(\text{mean of logs} - \text{standard deviation of logs})}$
geometric mean	$10^{(\text{mean of logs})}$
geometric mean + 1 standard deviation	$10^{(\text{mean of logs} + \text{standard deviation of logs})}$

The transformations were performed because most of the data sets exhibited a strong amount of right-skew (right-skew =a condition where the data set contains a few high values far from the mean, but no low values equally distant from the mean)

Results from the tables in Sections A and B were combined into the summary tables presented in Section C

Table A.1 - Individual data points - Unstable - 20-25 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT005	1	8	1	22.9	1.62E-03	-2.790	1.10E-04	-3.958
WT071	1	5	1	25.0	4.26E-03	-2.370	2.67E-03	-2.574
WT078	1	9	1	24.9	1.75E-02	-1.757	3.06E-03	-2.514
average of logs						-2.306		-3.015
std.dev of logs						0.519		0.817
sample size						3		3
geom mean - 1 std.dev					1.50E-03		1.47E-04	
geom mean					4.95E-03		9.65E-04	
geom mean + 1 std dev					1.63E-02		6.33E-03	

Table A.2 - Individual data points - Unstable - 25-30 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT005	2	8	1	28.1	1.93E-03	-2.714	3.41E-04	-3.468
WT053	1	8	1	28.4	1.10E-02	-1.960	8.94E-04	-3.048
WT056	1	8	1	27.9	1.28E-03	-2.892	1.22E-04	-3.914
WT071	2	5	1	29.6	2.72E-02	-1.565	1.19E-02	-1.923
average of logs						-2.283		-3.088
std.dev of logs						0.626		0.853
sample size						4		4
geom mean - 1 std.dev					1.23E-03		1.14E-04	
geom mean					5.21E-03		8.16E-04	
geom mean + 1 std dev					2.21E-02		5.82E-03	

Table A.3 - Individual data points - Unstable - 30-35 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT018	1	2	1	34.9	7.70E-03	-2.113	1.97E-03	-2.704
WT024	1	9	1	34.2	1.05E-02	-1.979	2.17E-03	-2.664
WT029	1	3	1	30.8	6.39E-04	-3.195	3.71E-04	-3.430
WT029	2	3	1	34.0	2.90E-03	-2.537	1.17E-03	-2.932
WT031-G	1	8	1	33.6				
WT032	1	2	1	32.5	1.28E-03	-2.894	1.29E-04	-3.889
WT043	1	2	1	34.2	1.55E-02	-1.809	3.28E-03	-2.485
WT050	1	2	1	34.8	3.26E-03	-2.487	1.03E-03	-2.987
WT053	2	8	1	33.7	1.10E-02	-1.960		
WT055	1	2	1	30.7	2.40E-03	-2.619	4.50E-04	-3.347
WT056	2	8	1	33.9	1.28E-03	-2.892		
WT057	1	8	1	30.2				
WT057	2	8	1	33.5				
WT071	3	5	1	34.6	7.23E-02	-1.141	2.67E-02	-1.573
WT078	2	9	1	33.2	1.99E-01	-0.702	7.85E-02	-1.105
average of logs						-2.194		-2.712
std.dev of logs						0.736		0.841
sample size						12		10
geom mean - 1 std.dev					1.18E-03		2.80E-04	
geom mean					6.40E-03		1.94E-03	
geom mean + 1 std dev					3.48E-02		1.35E-02	

Table A.4 - Individual data points - Unstable - 35-40 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT013	1	8	1	38.7	1.61E-02	-1.792	2.87E-03	-2.542
WT016	1	2	1	35.3	3.16E-03	-2.500	2.09E-03	-2.679
WT016	2	2	1	39.8	4.97E-03	-2.304	2.58E-03	-2.588
WT019	1	2	1	38.2	2.17E-03	-2.664	8.79E-04	-3.056
WT021	1	2	1	38.6	6.87E-04	-3.163	5.52E-04	-3.258
WT029	3	3	1	37.0	5.42E-03	-2.266	1.49E-03	-2.827
WT031-A	1	8	1	38.8	9.03E-03	-2.045	1.94E-03	-2.712
WT031-B	1	8	1	39.0				
WT031-F	1	8	1	38.1				
WT031-G	2	8	1	38.6				
WT031-H	1	8	1	36.2				
WT032	2	2	1	36.4	2.26E-03	-2.647	2.00E-04	-3.698
WT032	3	2	1	39.3	3.19E-03	-2.496	3.10E-04	-3.509
WT043	2	2	1	39.5	3.88E-02	-1.411	7.52E-03	-2.124
WT050	2	2	1	38.8	3.26E-03	-2.487		
WT054	1	2	1	35.1	6.06E-04	-3.218	2.52E-04	-3.599
WT055	2	2	1	35.2	2.40E-03	-2.619		
WT057	3	8	1	36.9				
WT061	1	5	1	37.8	4.20E-03	-2.377	1.08E-03	-2.965
WT071	4	5	1	37.0	9.09E-02	-1.041	3.25E-02	-1.489
average of logs						-2.335		-2.850
std.dev of logs						0.582		0.614
sample size						15		13
geom mean - 1 std.dev					1.21E-03		3.43E-04	
geom mean					4.62E-03		1.41E-03	
geom mean + 1 std dev					1.76E-02		5.82E-03	

Table A.5 - Individual data points - Unstable - 40-45 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT016	3	2	1	44.2	7.64E-03	-2.117	5.69E-03	-2.245
WT018	2	2	1	44.9	1.13E-02	-1.949	3.91E-03	-2.408
WT019	2	2	1	41.7	5.25E-03	-2.280	2.11E-03	-2.676
WT020	1	8	1	44.7	1.30E-03	-2.885	3.42E-04	-3.466
WT021	2	2	1	41.7	3.34E-03	-2.476	9.99E-04	-3.000
WT022	1	2	1	41.2	6.18E-04	-3.209	1.04E-04	-3.981
WT024	2	9	1	42.5	4.49E-02	-1.347	3.26E-03	-2.487
WT031-A	2	8	1	44.7	1.51E-02	-1.822	7.26E-03	-2.139
WT031-B	2	8	1	44.9				
WT031-C	1	8	1	41.5				
WT031-E	1	8	1	42.9				
WT031-F	2	8	1	43.8				
WT031-G	3	8	1	42.5				
WT031-H	2	8	1	41.6				
WT031-H	3	8	1	44.9				
WT050	4	2	1	44.8	3.26E-03	-2.487		
WT053	3	8	1	43.2	1.10E-02	-1.960		
WT053	4	8	1	44.2	1.10E-02	-1.960		
WT054	2	2	1	42.4	6.06E-04	-3.218		
WT055	3	2	1	43.6	2.40E-03	-2.619		
WT055	4	2	1	44.7	2.40E-03	-2.619		
WT056	3	8	1	41.1	1.28E-03	-2.892		
WT056	4	8	1	43.1	1.28E-03	-2.892		
WT057	4	8	1	43.1				
WT061	2	5	1	43.6	7.99E-03	-2.097	3.37E-03	-2.472
WT078	3	9	1	40.8	9.18E-01	-0.037	1.30E-01	-0.886
WT078	4	9	1	44.1	9.50E-01	-0.022	1.37E-01	-0.863
average of logs						-2.152		-2.420
std.dev of logs						0.896		0.940
sample size						19		11
geom mean - 1 std.dev		8.96E-04					4.37E-04	
geom mean		7.05E-03					3.80E-03	
geom mean + 1 std dev		5.54E-02					3.31E-02	

Table A.6 - Individual data points - Unstable - 45-50 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT013	2	8	1	48.7	3.72E-02	-1.430	9.55E-03	-2.020
WT019	3	2	1	46.3	8.82E-03	-2.055	3.08E-03	-2.511
WT020	2	8	1	45.1	2.31E-03	-2.637	8.20E-04	-3.086
WT021	3	2	1	47.9	4.26E-03	-2.371	1.68E-03	-2.774
WT022	2	2	1	45.3	1.46E-03	-2.837	4.44E-04	-3.352
WT024	3	9	1	47.5	5.08E-02	-1.294	6.25E-03	-2.204
WT031-A	3	8	1	47.2	3.45E-02	-1.463	1.40E-02	-1.852
WT031-B	3	8	1	47.9				
WT031-C	2	8	1	47.7				
WT031-D	1	8	1	47.1				
WT031-E	2	8	1	49.5				
WT031-F	3	8	1	48.2				
WT043	3	2	1	45.9	1.14E-01	-0.942	1.27E-02	-1.896
WT050	3	2	1	45.3	3.26E-03	-2.487		
average of logs						-1.946		-2.462
std.dev of logs						0.679		0.565
sample size						9		8
geom mean - 1 std.dev					2.37E-03		9.40E-04	
geom mean					1.13E-02		3.45E-03	
geom mean + 1 std dev					5.41E-02		1.27E-02	

Table A.7 - Individual data points - Unstable - 50-55 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT013	3	8	1	54.8	8.26E-02	-1.083	1.15E-02	-1.938
WT018	3	2	1	51.2	2.45E-02	-1.611	5.40E-03	-2.268
WT022	3	2	1	53.5	2.31E-03	-2.637	6.16E-04	-3.210
WT031-C	3	8	1	50.4				
WT031-D	2	8	1	54.2				
WT031-E	3	8	1	52.7				
WT054	3	2	1	52.7	6.06E-04	-3.218		
WT054	4	2	1	53.9	6.06E-04	-3.218		
WT061	3	5	1	53.4	1.97E-02	-1.705	6.34E-03	-2.198
WT061	4	5	1	54.5	2.75E-02	-1.561	7.63E-03	-2.118
average of logs						-2.147		-2.346
std.dev of logs						0.865		0.498
sample size						7		5
geom mean - 1 std.dev					9.71E-04		1.43E-03	
geom mean					7.12E-03		4.50E-03	
geom mean + 1 std dev					5.22E-02		1.42E-02	

Table A.8 - Individual data points - Unstable - 55-60 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT020	3	8	1	55.7	3.69E-03	-2.433	1.30E-03	-2.885
WT031-D	3	8	1	59.6				
average of logs						-2.433		-2.885
std.dev of logs						#DIV/0!		#DIV/0!
sample size						1		1
geom mean - 1 std.dev					#DIV/0!		#DIV/0!	
geom mean					3.69E-03		1.30E-03	
geom mean + 1 std dev					#DIV/0!		#DIV/0!	

Table B.0 - Individual data points - Stable - 15-20 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT010	1	8	0	18.4	1.95E-03	-2.710	4.00E-04	-3.398
average of logs						-2.710		-3.398
std.dev of logs						#DIV/0!		#DIV/0!
sample size						1		1
geom mean - 1 std.dev					#DIV/0!		#DIV/0!	
geom mean					1.95E-03		4.00E-04	
geom mean + 1 std dev					#DIV/0!		#DIV/0!	

Table B.1 - Individual data points - Stable - 20-25 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT002	1	6	0	22.3	1.61E-03	-2.794	6.56E-05	-4.183
WT010	2	8	0	24.5	1.06E-02	-1.975	2.64E-03	-2.579
WT048	1	2	0	21.9	5.04E-04	-3.298		
WT049	1	2	0	21.1	4.29E-04	-3.368	5.53E-05	-4.257
average of logs		average				-2.859		-3.673
std.dev of logs		std.dev				0.642		0.948
sample size						4		3
geom mean - 1 std.dev					3.16E-04		2.39E-05	
geom mean					1.38E-03		2.12E-04	
geom mean + 1 std dev					6.07E-03		1.88E-03	

Table B.2 - Individual data points - Stable - 25-30 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT001	1	3	0	29.0	5.16E-04	-3.287		
WT002	2	6	0	27.7	4.48E-03	-2.349	7.69E-04	-3.114
WT002	3	6	0	28.9	5.98E-03	-2.223	1.01E-03	-2.997
WT008	1	8	0	29.7				
WT011	1	6	0	25.9	1.90E-02	-1.720	3.85E-03	-2.415
WT028	1	6	0	28.3	5.41E-03	-2.267	1.36E-03	-2.865
WT035	1	2	0	25.7				
WT035	2	2	0	29.6				
WT048	2	2	0	25.3	1.29E-03	-2.890	8.28E-05	-4.082
WT049	2	2	0	28.5	2.62E-03	-2.581	2.51E-04	-3.601
WT051	1	8	0	27.2				
WT060	1	9	0	25.4	1.27E-03	-2.898	5.50E-04	-3.260
WT068	1	2	0	29.5	1.04E-03	-2.983	1.15E-04	-3.939
WT069	1	5	0	28.7	2.52E-03	-2.598	6.32E-04	-3.199
WT076	1	9	0	28.8	2.05E-03	-2.689	2.37E-04	-3.626
average of logs						-2.590		-3.310
std.dev of logs						0.435		0.508
sample size						11		10
geom mean - 1 std.dev					9.46E-04		1.52E-04	
geom mean					2.57E-03		4.90E-04	
geom mean + 1 std dev					7.00E-03		1.58E-03	

Table B.3 - Individual data points - Stable - 30-35 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT006	1	8	0	31.8	8.99E-03	-2.046	2.65E-03	-2.576
WT007	1	5	0	34.5	3.51E-04	-3.455	6.85E-05	-4.164
WT011	2	6	0	33.6	1.92E-01	-0.716	7.25E-03	-2.140
WT026	1	6	0	33.5	1.80E-03	-2.745	4.78E-04	-3.321
WT028	2	6	0	31.4	1.40E-02	-1.854	2.72E-03	-2.566
WT035	3	2	0	34.3				
WT038	1	2	0	33.2	3.59E-04	-3.445	3.33E-04	-3.478
WT044	1	2	0	30.3	2.20E-03	-2.657	4.23E-04	-3.373
WT044	2	2	0	33.4	5.44E-03	-2.264	1.12E-03	-2.950
WT048	3	2	0	30.2	2.09E-03	-2.679	2.23E-04	-3.653
WT049	3	2	0	34.2	6.60E-03	-2.181	1.31E-03	-2.883
WT051	2	8	0	33.5	4.46E-03	-2.351	1.55E-04	-3.811
WT052	1	8	0	30.9	6.50E-04	-3.187		
WT058	1	9	0	32.8	4.71E-03	-2.327	9.51E-04	-3.022
WT059	1	9	0	34.7	1.49E-03	-2.826	7.09E-05	-4.149
WT060	2	9	0	30.4	3.39E-03	-2.470	7.90E-04	-3.103
WT065	1	5	0	30.9	3.95E-03	-2.403	1.50E-03	-2.825
WT066	1	6	0	34.9				
WT068	2	2	0	33.1	3.96E-03	-2.402	5.73E-04	-3.242
WT069	2	5	0	32.5	1.64E-02	-1.784	3.91E-03	-2.408
WT070	1	5	0	34.3	9.29E-04	-3.032	2.56E-04	-3.591
WT072	1	7	0	32.1	3.63E-03	-2.440	5.69E-04	-3.245
WT074	1	7	0	31.9	5.60E-04	-3.252	6.18E-05	-4.209
WT076	2	9	0	33.7	6.89E-03	-2.162	5.10E-04	-3.292
WT077	1	9	0	32.5	1.52E-03	-2.819	8.30E-04	-3.081
average of logs						-2.500		-3.231
std.dev of logs						0.607		0.560
sample size						23		22
geom mean - 1 std.dev					7.81E-04		1.62E-04	
geom mean					3.16E-03		5.88E-04	
geom mean + 1 std dev					1.28E-02		2.14E-03	

Table B.4 - Individual data points - Stable - 35-40 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT004	1	8	0	37.5				
WT006	2	8	0	37.6	1.78E-02	-1.748	5.97E-03	-2.224
WT006	3	8	0	38.9	3.17E-02	-1.499	7.60E-03	-2.119
WT008	2	8	0	35.0	2.14E-04	-3.670	5.64E-05	-4.249
WT008	3	8	0	39.6	1.16E-03	-2.934	2.58E-04	-3.588
WT009	1	8	0	38.0				
WT010	3	8	0	35.7	1.50E-02	-1.825	3.29E-03	-2.483
WT012	1	2	0	35.4	1.66E-03	-2.781	9.21E-04	-3.036
WT014	1	8	0	37.4	4.16E-03	-2.381	1.43E-03	-2.844
WT015	1	2	0	37.9	1.55E-03	-2.810	5.88E-04	-3.231
WT017	1	2	0	37.3	2.62E-03	-2.581	2.71E-03	-2.567
WT026	2	6	0	38.4	4.23E-03	-2.374	1.62E-03	-2.792
WT027	1	6	0	38.2	1.38E-03	-2.861	1.19E-03	-2.924
WT028	3	6	0	36.2	1.87E-02	-1.729	5.14E-03	-2.289
WT038	2	2	0	37.7	1.55E-03	-2.810	5.46E-04	-3.263
WT040	1	2	0	37.1	5.85E-03	-2.233	1.25E-03	-2.904
WT042	1	2	0	39.3	1.13E-03	-2.948	4.87E-04	-3.313
WT044	3	2	0	36.9	7.79E-03	-2.109	2.74E-03	-2.562
WT052	2	8	0	37.0	6.50E-04	-3.187		
WT060	3	9	0	37.9	7.52E-03	-2.124	1.37E-03	-2.865
WT062	1	5	0	39.9	2.12E-03	-2.674	7.16E-04	-3.145
WT063	1	5	0	37.8	1.46E-03	-2.834	3.46E-04	-3.461
WT064	1	5	0	35.1	1.64E-03	-2.785	5.01E-04	-3.300
WT065	2	5	0	36.8	9.88E-03	-2.005	2.52E-03	-2.598
WT066	2	6	0	39.7				
WT067	1		0	37.7	2.74E-03	-2.562	3.09E-04	-3.510
WT072	2	7	0	37.9	8.79E-03	-2.056	1.58E-03	-2.801
WT073	1	7	0	39.0	1.26E-03	-2.901	1.69E-04	-3.773
WT074	2	7	0	37.3	1.26E-03	-2.898	2.05E-04	-3.689
WT075	1	9	0	38.4	7.30E-04	-3.137	3.27E-04	-3.485
WT077	2	9	0	38.6	5.83E-03	-2.234	1.21E-03	-2.916
average of logs						-2.525		-3.034
std.dev of logs						0.513		0.512
sample size						28		27
geom mean - 1 std.dev					9.17E-04		2.84E-04	
geom mean					2.99E-03		9.24E-04	
geom mean + 1 std dev					9.73E-03		3.01E-03	

Table B.5 - Individual data points - Stable - 40-45 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT003	1	6	0	43.3	1.22E-03	-2.912	2.24E-04	-3.650
WT004	2	8	0	44.7				
WT009	2	8	0	42.3				
WT012	2	2	0	41.5	4.70E-03	-2.328	2.49E-03	-2.604
WT014	2	8	0	40.6	7.47E-03	-2.127	2.45E-03	-2.611
WT017	2	2	0	43.8				
WT023	1	5	0	41.3	2.20E-03	-2.657	3.44E-03	-2.463
WT026	3	6	0	44.2	9.12E-03	-2.040	2.71E-03	-2.566
WT027	2	6	0	43.0	3.62E-03	-2.442	1.99E-03	-2.702
WT030	1	6	0	42.2	4.31E-03	-2.366	6.14E-04	-3.212
WT033	1	5	0	42.1	2.28E-03	-2.643	1.20E-03	-2.922
WT034	1	2	0	41.6	6.46E-03	-2.190	1.92E-03	-2.717
WT036	1	2	0	42.7	3.04E-03	-2.518	1.73E-03	-2.761
WT038	3	2	0	41.5	2.55E-03	-2.593	9.51E-04	-3.022
WT039	1	2	0	43.8	2.16E-03	-2.666	8.52E-04	-3.070
WT040	2	2	0	40.6	4.14E-02	-1.383	3.35E-03	-2.475
WT040	3	2	0	44.8	4.80E-02	-1.319	5.53E-03	-2.258
WT041	1	2	0	42.2	3.09E-03	-2.510	1.55E-03	-2.809
WT045	1	2	0	44.0	3.58E-03	-2.446	3.11E-03	-2.507
WT046	1	3	0	41.7	1.91E-03	-2.720	5.13E-04	-3.290
WT047	1	7	0	40.3	2.81E-03	-2.551	1.48E-03	-2.830
WT047	2	7	0	44.1	1.32E-02	-1.881	2.26E-03	-2.647
WT051	3	8	0	40.3	8.76E-03	-2.058	9.05E-04	-3.043
WT051	4	8	0	41.5	1.26E-02	-1.901	1.26E-03	-2.900
WT052	3	8	0	44.4	6.50E-04	-3.187		
WT058	2	9	0	41.3	9.82E-03	-2.008	2.21E-03	-2.656
WT059	2	9	0	40.8	3.07E-03	-2.512	2.87E-04	-3.542
WT060	4	9	0	41.3	9.03E-03	-2.044	1.67E-03	-2.777
WT064	2	5	0	43.9	4.01E-03	-2.397	1.10E-03	-2.960
WT068	3	2	0	41.4	7.60E-03	-2.119	1.06E-03	-2.975
WT068	4	2	0	44.8	9.90E-03	-2.004	1.54E-03	-2.813
WT069	3	5	0	41.9	4.11E-02	-1.386	1.83E-02	-1.737
WT069	4	5	0	44.4	5.42E-02	-1.266	2.19E-02	-1.659
WT070	2	5	0	41.2	3.05E-03	-2.516	9.98E-04	-3.001
WT073	2	7	0	44.4	5.54E-03	-2.257	5.79E-04	-3.238
WT076	3	9	0	41.0	8.81E-03	-2.055	1.61E-03	-2.794
WT077	3	9	0	44.7	1.82E-02	-1.740	6.90E-03	-2.161
average of logs						-2.228		-2.769
std.dev of logs						0.453		0.425
sample size						34		33
geom mean - 1 std.dev					2.08E-03		6.40E-04	
geom mean					5.92E-03		1.70E-03	
geom mean + 1 std dev					1.68E-02		4.53E-03	

Table B.6 - Individual data points - Stable - 45-50 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT001	2	3	0	45.8	5.69E-03	-2.245	1.50E-03	-2.823
WT004	3	8	0	46.6				
WT007	2	5	0	46.9	3.14E-03	-2.502	1.07E-03	-2.972
WT007	3	5	0	49.9	4.85E-03	-2.314	1.44E-03	-2.842
WT009	3	8	0	47.8				
WT012	3	2	0	49.0	1.09E-02	-1.963	3.39E-03	-2.470
WT014	3	8	0	45.8	1.63E-02	-1.788	4.15E-03	-2.381
WT015	2	2	0	45.5	3.47E-03	-2.459	1.06E-03	-2.976
WT023	2	5	0	48.6	1.96E-02	-1.707	5.45E-03	-2.264
WT025	1	2	0	48.0	5.04E-03	-2.298	3.17E-03	-2.499
WT027	3	6	0	49.1	9.08E-03	-2.042	4.20E-03	-2.376
WT033	2	5	0	47.4	6.22E-03	-2.206	2.07E-03	-2.683
WT034	2	2	0	46.7	2.62E-02	-1.581	3.74E-03	-2.427
WT036	2	2	0	49.8	8.47E-03	-2.072	3.17E-03	-2.499
WT037	1	2	0	45.0	2.92E-03	-2.535	1.63E-03	-2.788
WT039	2	2	0	49.6	6.02E-03	-2.221	1.27E-03	-2.898
WT041	2	2	0	48.6	9.49E-03	-2.023	2.34E-03	-2.631
WT046	2	3	0	48.1	5.68E-03	-2.246	1.40E-03	-2.854
WT047	3	7	0	48.9	3.07E-02	-1.512	2.26E-03	-2.647
WT052	4	8	0	46.1	6.50E-04	-3.187		
WT062	2	5	0	46.4	4.10E-03	-2.387	3.21E-03	-2.494
WT063	2	5	0	46.8	1.28E-02	-1.892	8.76E-04	-3.058
WT065	3	5	0	45.5	1.51E-02	-1.820	3.58E-03	-2.446
WT065	4	5	0	47.6	2.20E-02	-1.658	5.99E-03	-2.223
WT066	3	6	0	46.9				
WT067	2		0	46.9	4.40E-03	-2.356	4.36E-04	-3.361
WT072	3	7	0	45.2	1.87E-02	-1.729	5.96E-03	-2.225
WT072	4	7	0	48.3	2.36E-02	-1.627	9.68E-03	-2.014
WT074	3	7	0	45.9	2.34E-03	-2.631	4.67E-04	-3.331
WT074	4	7	0	49.1	3.59E-03	-2.445	8.23E-04	-3.085
WT075	2	9	0	47.3	2.18E-03	-2.662	6.50E-04	-3.187
WT076	4	9	0	45.1	9.43E-03	-2.025	2.52E-03	-2.599
WT077	4	9	0	47.9	3.29E-02	-1.482	9.32E-03	-2.031
average of logs						-2.121		-2.658
std.dev of logs						0.399		0.361
sample size						30		29
geom mean - 1 std.dev					3.02E-03		9.57E-04	
geom mean					7.58E-03		2.20E-03	
geom mean + 1 std dev					1.90E-02		5.05E-03	

Table B.7 - Individual data points - Stable - 50-55 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT001	3	3	0	52.9	7.40E-03	-2.131	2.82E-03	-2.549
WT003	2	6	0	50.0	5.87E-03	-2.231	1.33E-03	-2.877
WT003	3	6	0	51.3	8.75E-03	-2.058	2.40E-03	-2.620
WT015	3	2	0	53.1	5.07E-03	-2.295	1.81E-03	-2.742
WT017	3	2	0	50.5				
WT025	2	2	0	53.2	1.78E-02	-1.750	5.72E-03	-2.242
WT030	2	6	0	50.1	9.18E-03	-2.037	1.02E-03	-2.990
WT033	3	5	0	52.6	1.05E-02	-1.978	2.81E-03	-2.551
WT034	3	2	0	52.4	5.76E-02	-1.240	8.91E-03	-2.050
WT037	2	2	0	50.9	1.17E-02	-1.932	2.38E-03	-2.624
WT041	3	2	0	53.6	1.31E-02	-1.884	3.76E-03	-2.425
WT042	2	2	0	54.7	7.96E-03	-2.099	8.44E-04	-3.074
WT045	2	2	0	50.5	7.16E-03	-2.145	4.78E-03	-2.321
WT046	3	3	0	52.4	7.53E-03	-2.123	4.39E-03	-2.358
WT058	3	9	0	50.4	1.73E-02	-1.763	4.56E-03	-2.341
WT058	4	9	0	51.6	2.66E-02	-1.575	5.06E-03	-2.296
WT059	3	9	0	52.4	4.25E-03	-2.372	5.81E-04	-3.236
WT059	4	9	0	52.6	5.77E-03	-2.239	7.60E-04	-3.119
WT064	3	5	0	54.5	8.52E-03	-2.069	4.76E-03	-2.323
WT064	4	5	0	54.8	1.50E-02	-1.824	5.28E-03	-2.278
WT066	4	6	0	50.5				
WT070	3	5	0	50.1	1.45E-02	-1.839	2.57E-03	-2.591
WT070	4	5	0	51.4	2.07E-02	-1.684	3.00E-03	-2.523
WT073	3	7	0	53.0	1.43E-02	-1.846	1.50E-03	-2.823
average of logs		average				-1.960		-2.589
std.dev of logs		std.dev				0.266		0.327
sample size						22		22
geom mean - 1 std.dev					5.94E-03		1.21E-03	
geom mean					1.10E-02		2.58E-03	
geom mean + 1 std dev					2.02E-02		5.48E-03	

Table B.8 - Individual data points - Stable - 55-60 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT023	3	5	0	57.2	4.89E-02	-1.311	7.05E-03	-2.152
WT030	3	6	0	56.9	1.19E-02	-1.924	1.98E-03	-2.702
WT036	3	2	0	56.1	3.78E-02	-1.423	9.54E-03	-2.020
WT037	3	2	0	55.8	2.87E-02	-1.542	5.87E-03	-2.231
WT039	3	2	0	56.2	1.37E-02	-1.862	1.80E-03	-2.745
WT045	3	2	0	56.8	1.55E-02	-1.810	7.46E-03	-2.127
WT062	3	5	0	59.2	1.62E-02	-1.789	8.11E-03	-2.091
WT063	3	5	0	57.6	1.50E-02	-1.824	1.55E-03	-2.809
WT063	4	5	0	58.8	1.81E-02	-1.743	3.78E-03	-2.422
WT067	3		0	55.8	6.35E-03	-2.197	9.78E-04	-3.010
WT073	4	7	0	56.0	2.25E-02	-1.647	2.08E-03	-2.683
WT075	3	9	0	57.7	6.22E-03	-2.206	1.77E-03	-2.753
average of logs						-1.773		-2.479
std.dev of logs						0.271		0.342
sample size						12		12
geom mean - 1 std.dev					9.03E-03		1.51E-03	
geom mean					1.69E-02		3.32E-03	
geom mean + 1 std dev					3.15E-02		7.29E-03	

Table B.9 - Individual data points - Stable - 60-65 mph

Site and Statistics	Run	Soil group	Disturbed / Unstable yes = 1, no = 0	Extrapolated 10-meter velocity (mph)	cumulative spike-corrected flux (ton/acre/hr)	log10(flux)	cumulative spike mass (ton/acre) (ton/acre)	log10(spike mass)
WT025	3	2	0	61.7	2.60E-02	-1.585	7.80E-03	-2.108
WT042	3	2	0	60.7	9.62E-03	-2.017	1.67E-03	-2.778
WT062	4	5	0	60.1	2.52E-02	-1.599	9.89E-03	-2.005
WT075	4	9	0	60.7	1.21E-02	-1.918	2.04E-03	-2.691
average of logs						-1.780		-2.395
std.dev of logs						0.220		0.395
sample size						4		4
geom mean - 1 std.dev					9.99E-03		1.62E-03	
geom mean					1.66E-02		4.03E-03	
geom mean + 1 std dev					2.76E-02		1.00E-02	

Section C - Statistical summary tables and figures, 1995 Unstable and Stable PM-10 cumulative fluxes and spikes

Tables C.1 through C.16 contain data on the samples sizes, geometric means and standard deviations for PM-10 emissions as fluxes in ton/acre/hour, and for PM-10 spikes, in ton/acre, from unstable lands and from stable native desert in the 1995 wind tunnel field study.

The geometric means and standard deviations in each wind speed category in Tables C.1-C.16 were extracted from the computational tables in Sections A and B of this report. Sample sizes are shown in the header of each table as n = x, where x is an integer value representing the number of records in the study that correspond to that particular classification.

Tables C.1-C.16 are organized in the following manner:

Soil group	**Unstable**	**Stable**
All soils	C.1	C.2
Group 2	C.3	C.4
Group 3	C.5	C.6
Group 5	C.7	C.8
Group 6	C.9 *	C.10
Group 7	C.11*	C.12
Group 8	C.13	C.14
Group 9	C.15	C.16

An asterisk(*) indicates that the table contains no data (the 1995 wind tunnel field study did not uniformly cover all soil groups and conditions), but the blank tables are included for completeness.

Figure C.1 is a plot of the spike-corrected cumulative flux data in Table C.2 for stable lands, all soils. Cumulative fluxes from stable lands tended to consistently increase with increasing 10-meter wind speed.

Figure C.2 is a plot of the spike-corrected cumulative flux data in Table C.1 for unstable lands, all soils. Cumulative fluxes from unstable lands did not increase uniformly with wind speeds, but tended to oscillate near a mean value of 5.00×10^{-3} ton/acre/hour.

Figure C.3 is a plot of the spike data in Table C.2 for stable lands, all soils. Cumulative stable spikes lands tended to consistently increase with increasing 10-meter wind speed.

Figure C.4 is a plot of the spike data in Table C.1, for unstable lands, all soils. Cumulative spikes from unstable lands tended to be somewhat larger and to increase more erratically with increasing wind speeds than cumulative spikes from stable lands (compare Figure C.4 to Figure C.3).

Table C.1 Geometric mean PM-10 spike-corrected fluxes and spikes

All Soils - Unstable

Unstable (disturbed) sites (new classfication) n = 68								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	1.50E-03	4.95E-03	1.63E-02	1.47E-04	9.65E-04	6.33E-03	3	3
20-24.9	1.23E-03	5.21E-03	2.21E-02	1.14E-04	8.16E-04	5.82E-03	4	4
25-29.9	1.18E-03	6.40E-03	3.48E-02	2.80E-04	1.94E-03	1.35E-02	12	11
30-34.9	1.21E-03	4.62E-03	1.76E-02	3.43E-04	1.41E-03	5.82E-03	13	13
35-39.9	8.96E-04	7.05E-03	5.54E-02	4.37E-04	3.80E-03	3.31E-02	19	11
40-44.9	2.37E-03	1.13E-02	5.41E-02	9.40E-04	3.45E-03	1.27E-02	9	8
45-49.9	9.71E-04	7.12E-03	5.22E-02	1.43E-03	4.50E-03	1.42E-02	7	5
50-54.9	N/A	3.69E-03	N/A	N/A	1.30E-03	N/A	1	1
55-59.9								
60-64.9								
65-69.9								
total runs							68	56

Table C.2 Geometric mean PM-10 spike-corrected fluxes and spikes

All Soils - Stable

Stable (undisturbed) sites (new classification) n = 169								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	1.95E-03	N/A	N/A	4.00E-04	N/A	1	1
20-24.9	3.16E-04	1.38E-03	6.07E-03	2.39E-05	2.12E-04	1.88E-03	4	3
25-29.9	9.46E-04	2.57E-03	7.00E-03	1.52E-04	4.90E-04	1.58E-03	11	10
30-34.9	7.81E-04	3.16E-03	1.28E-02	1.62E-04	5.88E-04	2.14E-03	23	22
35-39.9	9.17E-04	2.99E-03	9.73E-03	2.84E-04	9.24E-04	3.01E-03	28	27
40-44.9	2.08E-03	5.92E-03	1.68E-02	6.40E-04	1.70E-03	4.53E-03	34	33
45-49.9	3.02E-03	7.58E-03	1.90E-02	9.57E-04	2.20E-03	5.05E-03	30	29
50-54.9	5.94E-03	1.10E-02	2.02E-02	1.21E-03	2.58E-03	5.48E-03	22	22
55-59.9	9.03E-03	1.69E-02	3.15E-02	1.51E-03	3.32E-03	7.29E-03	12	12
60-64.9	9.99E-03	1.66E-02	2.76E-02	1.62E-03	4.03E-03	1.00E-02	4	4
65-69.9								
total runs							169	163

Table C.3 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 2 - Unstable

Unstable (disturbed) sites (new classfication) n = 33								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30-34.9	1.54E-03	4.12E-03	1.10E-02	2.31E-04	8.28E-04	2.97E-03	5	5
35-39.9	8.97E-04	2.81E-03	8.82E-03	2.39E-04	8.63E-04	3.12E-03	10	10
40-44.9	1.03E-03	2.80E-03	7.65E-03	2.82E-04	1.37E-03	6.70E-03	9	5
45-49.9	1.37E-03	7.27E-03	3.86E-02	5.79E-04	2.33E-03	9.36E-03	5	4
50-54.9	3.73E-04	2.13E-03	1.22E-02	3.93E-04	1.82E-03	8.46E-03	4	2
55-59.9								
60-64.9								
65-69.9								
total runs							33	26

Table C.4 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 2 - Stable

Stable (undisturbed) sites (new classification) n = 52								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20-24.9	4.15E-04	4.65E-04	5.21E-04	5.53E-05	5.53E-05	5.53E-05	2	1
25-29.9	9.37E-04	1.52E-03	2.47E-03	7.57E-05	1.34E-04	2.36E-04	3	3
30-34.9	8.64E-04	2.48E-03	7.14E-03	2.73E-04	5.46E-04	1.09E-03	6	6
35-39.9	1.17E-03	2.45E-03	5.14E-03	5.01E-04	1.04E-03	2.17E-03	7	7
40-44.9	2.24E-03	6.48E-03	1.88E-02	1.05E-03	1.87E-03	3.33E-03	12	11
45-49.9	3.56E-03	7.18E-03	1.45E-02	1.38E-03	2.25E-03	3.66E-03	8	8
50-54.9	5.60E-03	1.24E-02	2.75E-02	1.44E-03	3.19E-03	7.03E-03	8	8
55-59.9	1.35E-02	2.19E-02	3.56E-02	2.50E-03	5.24E-03	1.10E-02	4	4
60-64.9	7.83E-03	1.58E-02	3.19E-02	1.21E-03	3.61E-03	1.07E-02	2	2
65-69.9								
total runs							52	50

Table C.5 Geometric mean PM-10 spike-corrected fluxes and spikes
Group 3 - Unstable

Unstable (disturbed) sites (new classfication) n = 3								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
30-34.9	4.67E-04	1.36E-03	3.97E-03	2.93E-04	6.59E-04	1.48E-03	2	2
35-39.9	N/A	5.42E-03	N/A	N/A	1.49E-03	N/A	1	1
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							3	3

Table C.6 Geometric mean PM-10 spike-corrected fluxes and spikes
Group 3 - Stable

Stable (undisturbed) sites (new classification) n = 6								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	N/A	5.16E-04	N/A	N/A	N/A	N/A	1	0
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
35-39.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
40-44.9	N/A	1.91E-03	N/A	N/A	5.13E-04	N/A	1	1
45-49.9	5.67E-03	5.68E-03	5.70E-03	1.38E-03	1.45E-03	1.52E-03	2	2
50-54.9	7.37E-03	7.46E-03	7.56E-03	2.58E-03	3.52E-03	4.81E-03	2	2
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							6	5

Table C.7 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 5 - Unstable

Unstable (disturbed) sites (new classfication) n = 8								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	4.26E-03	N/A	N/A	2.67E-03	N/A	1	1
25-29.9	N/A	2.72E-02	N/A	N/A	1.19E-02	N/A	1	1
30-34.9	N/A	7.23E-02	N/A	N/A	2.67E-02	N/A	1	1
35-39.9	2.22E-03	1.95E-02	1.72E-01	5.35E-04	5.93E-03	6.57E-02	2	2
40-44.9	N/A	7.99E-03	N/A	N/A	3.37E-03	N/A	1	1
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
50-54.9	1.84E-02	2.33E-02	2.94E-02	6.10E-03	6.95E-03	7.93E-03	2	2
55-59.9								
60-64.9								
65-69.9								
total runs							8	8

Table C.8 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 5 - Stable

Stable (undisturbed) sites (new classification) n = 33								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	N/A	2.52E-03	N/A	N/A	6.32E-04	N/A	1	1
30-34.9	3.99E-04	2.15E-03	1.15E-02	9.32E-05	5.66E-04	3.44E-03	4	4
35-39.9	1.10E-03	2.66E-03	6.47E-03	3.15E-04	7.48E-04	1.77E-03	4	4
40-44.9	1.64E-03	7.18E-03	3.15E-02	8.38E-04	3.49E-03	1.45E-02	6	6
45-49.9	4.07E-03	8.69E-03	1.86E-02	1.15E-03	2.38E-03	4.94E-03	8	8
50-54.9	9.38E-03	1.32E-02	1.86E-02	2.54E-03	3.52E-03	4.89E-03	5	5
55-59.9	1.24E-02	2.15E-02	3.74E-02	2.02E-03	4.28E-03	9.09E-03	4	4
60-64.9	N/A	2.52E-02	N/A	N/A	9.89E-03	N/A	1	1
65-69.9								
total runs							33	33

Table C.9 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 6 - Unstable

Unstable (disturbed) sites (new classfication) n = 0								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
35-39.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							0	0

Table C.10 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 6 - Stable

Stable (undisturbed) sites (new classification) n = 20								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	1.61E-03	N/A	N/A	6.56E-05	N/A	1	1
25-29.9	3.77E-03	7.25E-03	1.40E-02	7.02E-04	1.42E-03	2.87E-03	4	4
30-34.9	1.63E-03	1.69E-02	1.76E-01	5.33E-04	2.11E-03	8.37E-03	3	3
35-39.9	1.29E-03	4.78E-03	1.77E-02	9.92E-04	2.15E-03	4.65E-03	3	3
40-44.9	1.59E-03	3.63E-03	8.32E-03	2.96E-04	9.28E-04	2.91E-03	4	4
45-49.9	N/A	9.08E-03	N/A	N/A	4.20E-03	N/A	1	1
50-54.9	6.09E-03	7.78E-03	9.94E-03	9.59E-04	1.48E-03	2.29E-03	3	3
55-59.9	N/A	1.19E-02	N/A	N/A	1.98E-03	N/A	1	1
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							20	20

Table C.11 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 7 - Unstable

Unstable (disturbed) sites (new classfication) n = 0								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
35-39.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							0	0

Table C.12 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 7 - Stable

Stable (undisturbed) sites (new classification) n = 15								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
30-34.9	3.80E-04	1.43E-03	5.34E-03	3.90E-05	1.88E-04	9.02E-04	2	2
35-39.9	7.85E-04	2.41E-03	7.39E-03	1.10E-04	3.79E-04	1.31E-03	3	3
40-44.9	2.72E-03	5.90E-03	1.28E-02	6.20E-04	1.25E-03	2.50E-03	3	3
45-49.9	3.16E-03	1.03E-02	3.33E-02	6.08E-04	2.19E-03	7.87E-03	5	5
50-54.9	N/A	1.43E-02	N/A	N/A	1.50E-03	N/A	1	1
55-59.9	N/A	2.25E-02	N/A	N/A	2.08E-03	N/A	1	1
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							15	15

Table C.13 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 8 - Unstable

Unstable (disturbed) sites (new classfication) n = 19								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9	N/A	N/A	N/A	N/A	N/A	N/A		
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A		
20-24.9	N/A	1.62E-03	N/A	N/A	1.10E-04	N/A	1	1
25-29.9	9.61E-04	3.00E-03	9.39E-03	1.23E-04	3.34E-04	9.04E-04	3	3
30-34.9	8.22E-04	3.75E-03	1.71E-02	N/A	N/A	N/A	2	0
35-39.9	8.00E-03	1.21E-02	1.82E-02	1.79E-03	2.36E-03	3.12E-03	2	2
40-44.9	1.15E-03	3.96E-03	1.36E-02	1.82E-04	1.58E-03	1.37E-02	6	2
45-49.9	2.95E-03	1.44E-02	6.99E-02	1.03E-03	4.79E-03	2.24E-02	3	3
50-54.9	N/A	8.26E-02	N/A	N/A	1.15E-02	N/A	1	1
55-59.9	N/A	3.69E-03	N/A	N/A	1.30E-03	N/A	1	1
60-64.9								
65-69.9								
total runs							19	13

Table C.14 Geometric mean PM-10 spike-corrected fluxes and spikes

Group 8 - Stable

Stable (undisturbed) sites (new classification) n = 17								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	1.95E-03	N/A	N/A	4.00E-04	N/A	1	1
20-24.9	N/A	1.06E-02	N/A	N/A	2.64E-03	N/A	1	1
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
30-34.9	3.85E-03	6.33E-03	1.04E-02	8.58E-05	6.40E-04	4.78E-03	2	2
35-39.9	5.18E-04	3.44E-03	2.28E-02	1.74E-04	1.21E-03	8.38E-03	7	6
40-44.9	1.24E-03	4.81E-03	1.86E-02	8.48E-04	1.41E-03	2.34E-03	4	3
45-49.9	3.34E-04	3.26E-03	3.18E-02	N/A	4.15E-03	N/A	2	1
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
60-64.9								
65-69.9								
total runs							17	14

Table C.15 Geometric mean PM-10 spike-corrected fluxes and spikes
Group 9 - Unstable

Unstable (disturbed) sites (new classfication) n = 7								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	1.75E-02	N/A	N/A	3.06E-03	N/A	1	1
25-29.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
30-34.9	5.71E-03	4.57E-02	3.65E-01	1.03E-03	1.30E-02	1.65E-01	2	2
35-39.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
40-44.9	5.89E-02	3.40E-01	1.96E+00	4.54E-03	3.87E-02	3.30E-01	3	3
45-49.9	N/A	5.08E-02	N/A	N/A	6.25E-03	N/A	1	1
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
65-69.9								
total runs							7	7

Table C.16 Geometric mean PM-10 spike-corrected fluxes and spikes
Group 9 - Stable

Stable (undisturbed) sites (new classification) n = 24								
Wind Speed (mph)	Geom mean flux -1 Std. Dev (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev (ton/acre/hr)	Geom mean spike -1 Std. Dev (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev (ton/acre)	Number of flux Runs	Number of spike Runs
10-14.9								
15-19.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
20-24.9	N/A	N/A	N/A	N/A	N/A	N/A	0	0
25-29.9	1.15E-03	1.61E-03	2.26E-03	1.99E-04	3.61E-04	6.54E-04	2	2
30-34.9	1.52E-03	3.01E-03	5.97E-03	1.59E-04	4.68E-04	1.38E-03	5	5
35-39.9	8.83E-04	3.18E-03	1.14E-02	3.69E-04	8.15E-04	1.80E-03	3	3
40-44.9	4.47E-03	8.47E-03	1.61E-02	5.24E-04	1.64E-03	5.11E-03	5	5
45-49.9	2.25E-03	8.78E-03	3.42E-02	6.55E-04	2.48E-03	9.39E-03	3	3
50-54.9	4.30E-03	1.03E-02	2.46E-02	5.67E-04	1.79E-03	5.63E-03	4	4
55-59.9	N/A	6.22E-03	N/A	N/A	1.77E-03	N/A	1	1
60-64.9	N/A	1.21E-02	N/A	N/A	2.04E-03	N/A	1	1
65-69.9								
total runs							24	24

Figure C1 - Stable (undisturbed) flux - spikes removed - all soils

Geometric mean +/- 1 standard deviation

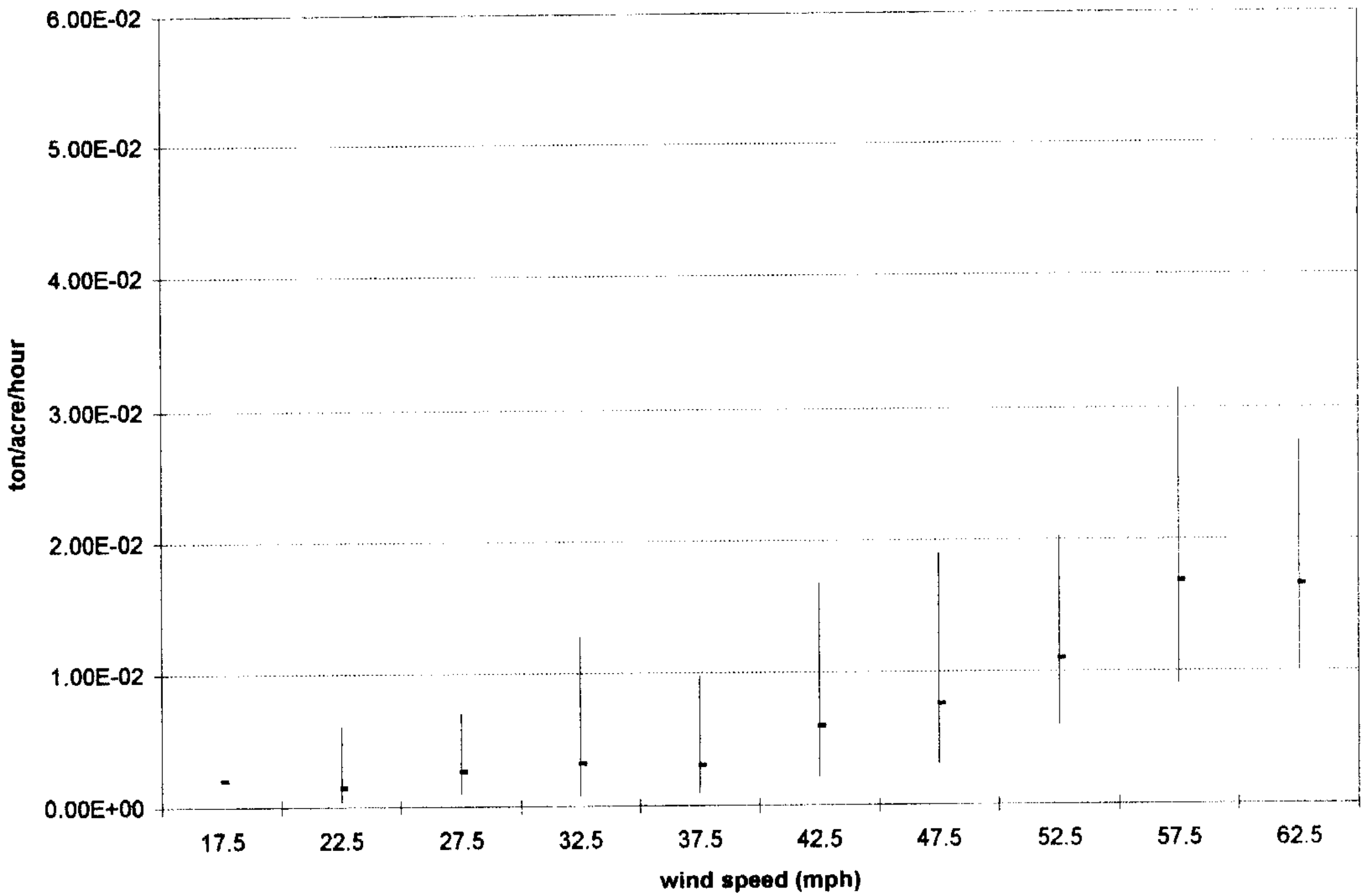


Figure C2 - Unstable (disturbed) flux - spikes removed - all soils

Geometric mean +/- 1 standard deviation

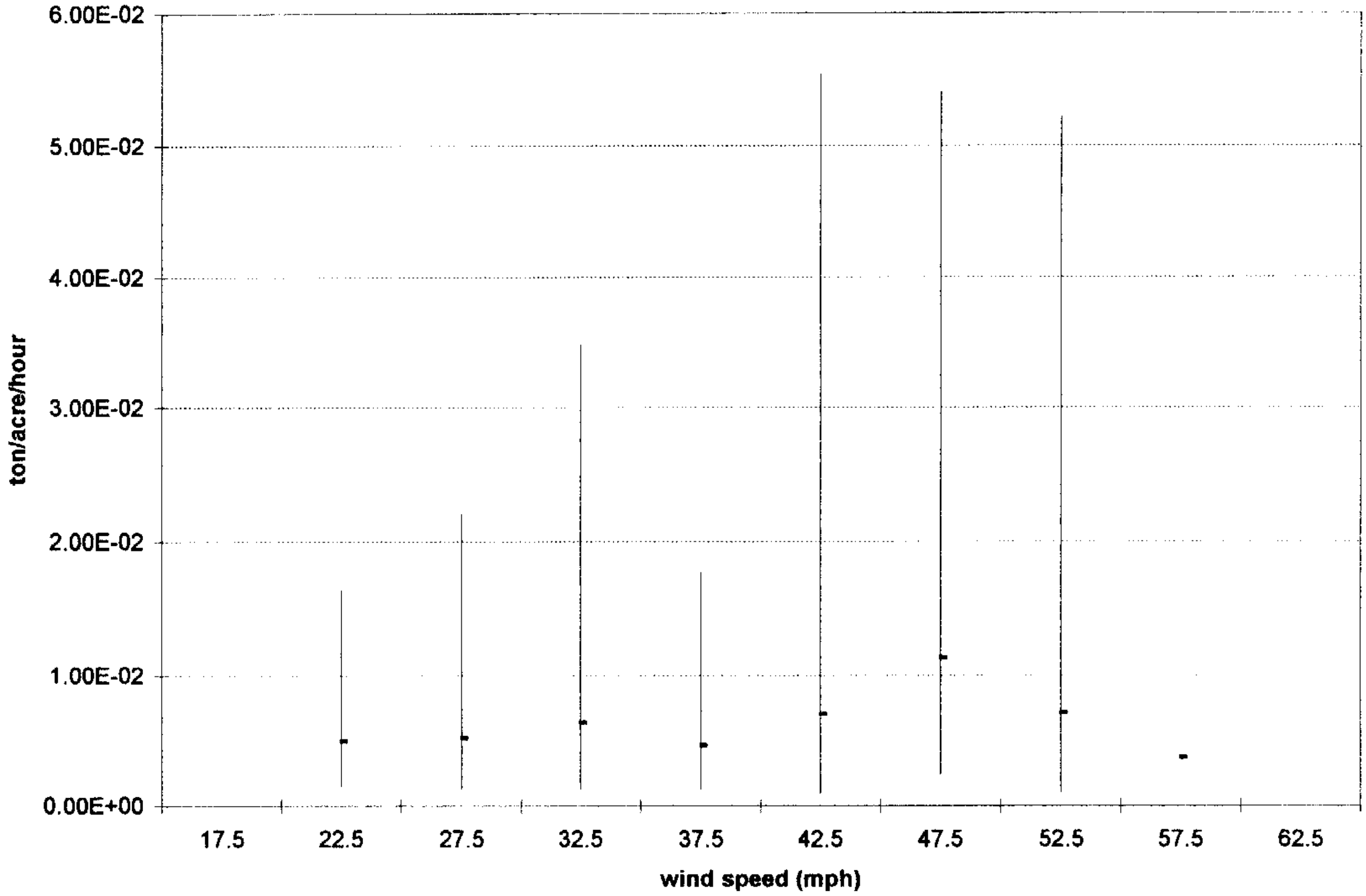


Figure C3 - Stable (undisturbed) spikes - all soils

Geometric mean +/- 1 standard deviation

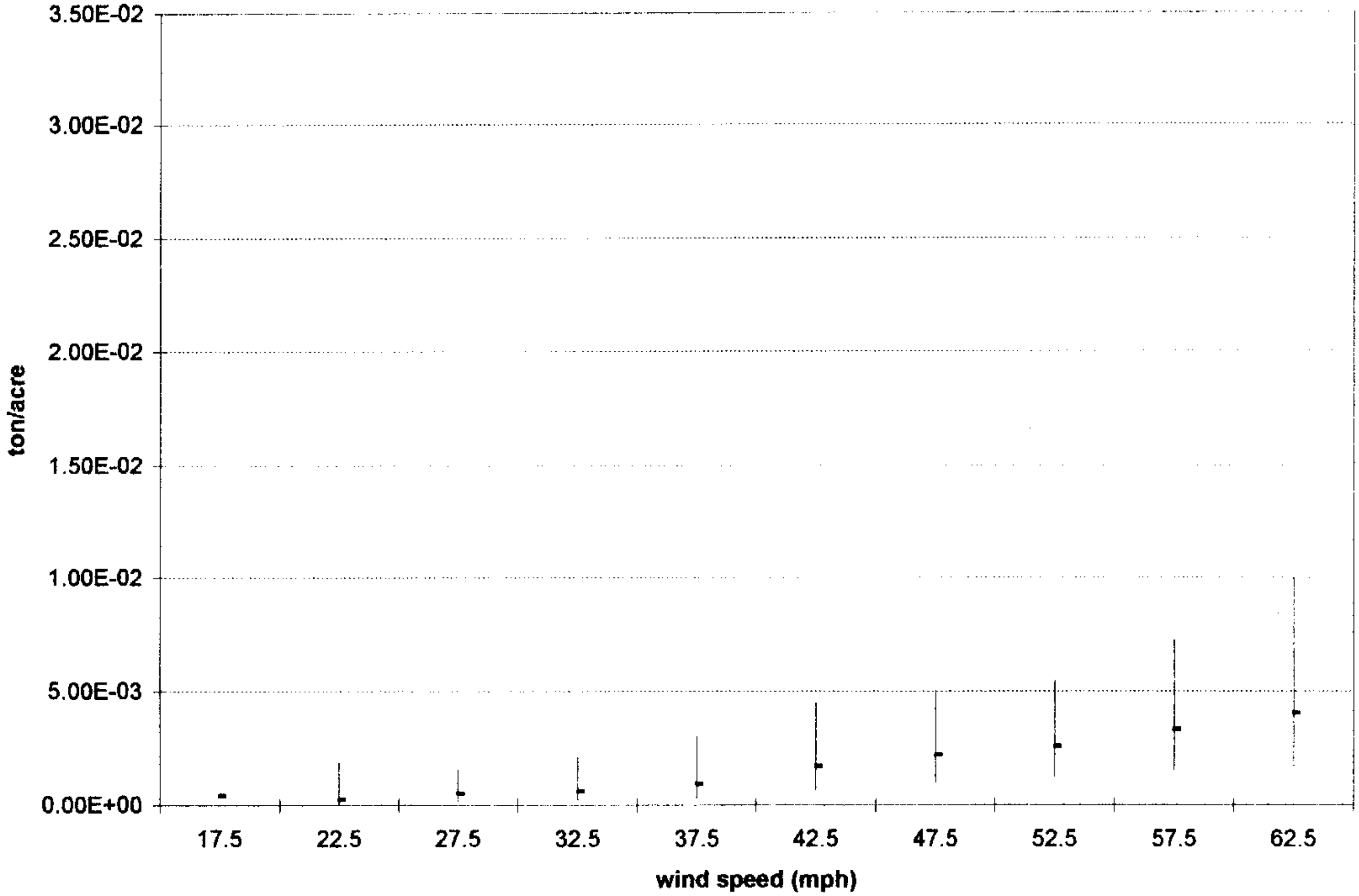
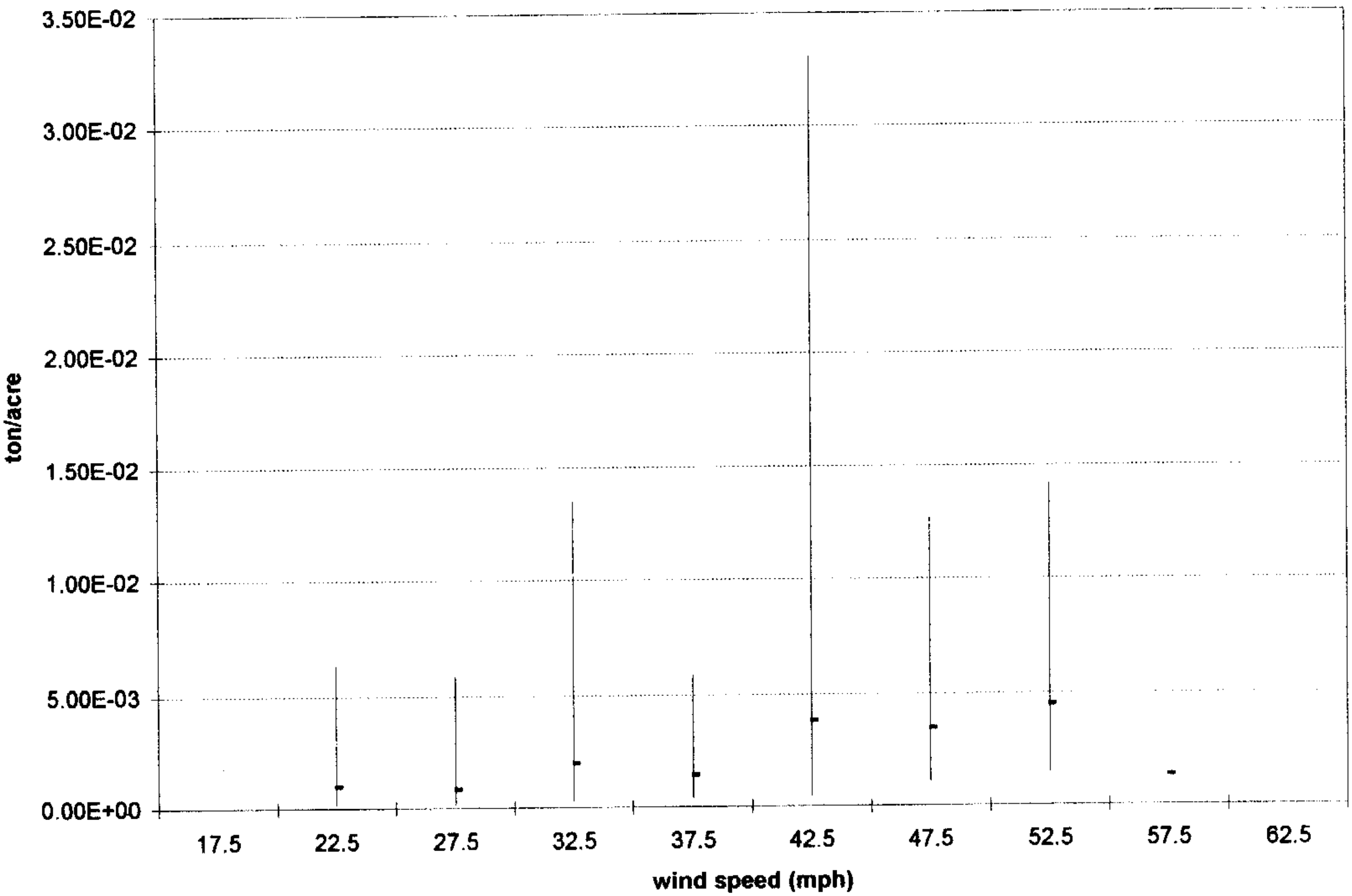


Figure C4 - Unstable (disturbed) spikes - all soils

Geometric mean +/- 1 standard deviation



Section D - 1995 wind tunnel aerodynamic roughnesses and PM-10 initiation velocities

Table D.00 contains the direct measurements of aerodynamic roughness height, zo, and observed PM-10 spike velocities, at both z=7.5 centimeters and z=10 meters, from the 1995 wind tunnel field study.

Aerodynamic roughness height, zo, was determined from a logarithmic fit to the velocity profile measured over the soil surface by the profiling pitot tube in the working section of the tunnel. Physically, aerodynamic roughness may be thought of as the height above the surface at which the wind velocity goes to zero.

The PM-10 spike velocity is computed from the profiling pitot tube pressure drop that corresponded to the first indication of a PM-10 concentration "spike" exceeding 1.00 mg/m^3, as measured by the TSI Dust-Trak(r). The concentration "spike" was obtained by starting the wind tunnel with the front bypass air inlet wide open, and slowly closing it until a spike was observed on the TSI display. The pitot tube pressure drop, measured at an elevation of 7.50 centimeters, corresponding to this damper position was recorded, and the pressure drop was subsequently converted to a flow velocity.

The aerodynamic roughness height was then used with this 7.50 cm spike velocity to compute an extrapolated velocity at an elevation of 10 meters.

Data in Table D.00 are sorted by wind tunnel Site designation, to facilitate direct comparison with wind tunnel site data in Section 1, Table 1 of this report.

In the next table, Table D.0, the same data are presented, this time sorted by major soil group and by unstable/stable classification. Sorted data in this table were then extracted into a series of sub-tables, one table for each soil group and stability condition. Computations of geometric mean and standard deviation were performed in each sub table, and the results from each subtable were exported to Tables D.1 through D.8.

Tables D.1 through D.8 contain minimum, maximum, geometric mean and standard deviation aerodynamic roughnesses and spike velocities for each major soil group and for each stability (unstable/stable) classification. The tables are arranged in the following order:

Table #	Major soil group
D.1	All soils
D.2	2
D.3	3
D.4	5
D.5	6
D.6	7
D.7	8
D.8	9

Table D.00 - 1995 aerodynamic roughnesses and observed initiation velocities for elevated PM-10 (spike velocities)
Sorted by sampling locations

Date	Site	Major soil group	Unstable (y=1,n=0)	Aerodynamic roughness, zo (cm)	PM-10 spike velocity at z=7.6 cm (mph)	Extrapolated spike velocity at z=10m (mph)
5/31/95	WT001	3	0	.2876	13.0	32.4
6/01/95	WT002	6	0	.0001	10.3	14.5
6/01/95	WT003	6	0	.2127	16.5	39.1
6/07/95	WT004	8	0	.1996	13.2	31.0
6/08/95	WT005	8	1	.0043	11.5	19.1
6/08/95	WT006	8	0	.1176	10.7	23.4
6/09/95	WT007	5	0	.2127	16.5	39.1
6/09/95	WT008	8	0	.0116	14.4	25.3
6/09/95	WT009	8	0	.0964	15.3	32.5
6/19/95	WT010	8	0	.0234	6.7	12.4
6/19/95	WT011	6	0	.0395	9.5	18.4
6/20/95	WT012	2	0	.1216	11.5	25.0
6/20/95	WT013	8	1	.2158	11.5	27.3
6/21/95	WT014	8	0	.1068	13.4	28.9
6/21/95	WT015	2	0	.1695	11.3	26.0
6/21/95	WT016	2	1	.0355	16.9	32.4
6/22/95	WT017	2	0	.1760	11.9	27.4
6/22/95	WT018	2	1	.1970	11.2	26.2
6/26/95	WT019	2	1	.0547	14.6	29.2
6/26/95	WT020	8	1	.3493	14.3	37.1
6/27/95	WT021	2	1	.0862	15.4	32.4
6/27/95	WT022	2	1	.1606	15.1	34.4
6/27/95	WT023	5	0	.2189	12.5	29.8
6/28/95	WT024	9	1	.0511	11.9	23.5
6/28/95	WT025	2	0	.4891	10.9	30.3
6/29/95	WT026	6	0	.0394	13.6	26.2
6/29/95	WT027	6	0	.0658	14.5	29.6
6/30/95	WT028	6	0	.0169	11.1	19.9
6/30/95	WT029	3	1	.0121	13.6	24.0
6/30/95	WT030	6	0	.2453	12.1	29.4
7/05/95	WT031-A	8	1	.0733	13.5	27.7

Table D.00 - 1995 aerodynamic roughnesses and observed initiation velocities for elevated PM-10 (spike velocities)
Sorted by sampling locations

Date	Site	Major soil group	Unstable (y=1,n=0)	Aerodynamic roughness, zo (cm)	PM-10 spike velocity at z=7.6 cm (mph)	Extrapolated spike velocity at z=10m (mph)
7/05/95	WT031-B	8	1	.0707	12.0	24.6
7/05/95	WT031-C	8	1	.1146	12.7	27.6
7/06/95	WT031-D	8	1	.2628	13.1	32.3
7/07/95	WT031-E	8	1	.1666	12.2	27.8
7/10/95	WT031-F	8	1	.0588	11.1	22.3
7/10/95	WT031-G	8	1	.0112	13.5	23.7
7/10/95	WT031-H	8	1	.0312	13.3	25.1
7/06/95	WT032	2	1	.0046	17.3	28.7
7/07/95	WT033	5	0	.1403	13.6	30.2
7/12/95	WT034	2	0	.1738	13.0	29.8
7/12/95	WT035	2	0	.0001	11.9	17.3
7/13/95	WT036	2	0	.2405	12.5	30.4
7/13/95	WT037	2	0	.1942	12.9	30.2
7/14/95	WT038	2	0	.0281	14.3	26.8
7/14/95	WT039	2	0	.2172	12.2	29.0
7/14/95	WT040	2	0	.0467	14.7	28.8
7/18/95	WT041	2	0	.2238	12.5	29.9
7/18/95	WT042	2	0	.3416	12.4	32.2
7/18/95	WT043	2	1	.0531	13.1	26.1
7/19/95	WT044	2	0	.0018	19.1	30.4
7/19/95	WT045	2	0	.2219	11.4	27.2
7/20/95	WT046	3	0	.1157	14.9	32.3
7/20/95	WT047	7	0	.1727	13.7	31.5
7/24/95	WT048	2	0	.0086	11.8	20.4
7/24/95	WT049	2	0	.0037	12.8	21.0
7/26/95	WT050	2	1	.1031	12.0	25.7
7/25/95	WT051	8	0	.0487	13.8	27.1
7/25/95	WT052	8	0	.1863	13.5	31.3
7/26/95	WT053	8	1	.0227	11.9	22.0
7/27/95	WT054	2	1	.1596	13.7	31.1
7/27/95	WT055	2	1	.0400	14.0	27.1

Table D.00 - 1995 aerodynamic roughnesses and observed initiation velocities for elevated PM-10 (spike velocities)
Sorted by sampling locations

Date	Site	Major soil group	Unstable (y=1,n=0)	Aerodynamic roughness, zo (cm)	PM-10 spike velocity at z=7.6 cm (mph)	Extrapolated spike velocity at z=10m (mph)
7/28/95	WT056	8	1	.0251	12.7	23.6
7/28/95	WT057	8	1	.0223	15.7	28.9
7/31/95	WT058	9	0	.1691	11.2	25.7
8/01/95	WT059	9	0	.1395	13.8	30.7
8/01/95	WT060	9	0	.0172	11.5	20.8
8/02/95	WT061	5	1	.4099	10.7	28.6
8/02/95	WT062	5	0	.3139	11.8	30.1
8/02/95	WT063	5	0	.2891	12.8	31.9
8/04/95	WT064	5	0	.2226	10.6	25.3
8/03/95	WT065	5	0	.0489	13.0	25.6
8/03/95	WT066	6	0	.0690	14.1	28.7
8/03/95	WT067	6	0			
8/08/95	WT068	2	0	.0340	12.4	23.7
8/08/95	WT069	5	0	.0300	12.1	22.9
8/09/95	WT070	5	0	.1081	14.2	30.5
8/14/95	WT071	5	1	.0027	12.1	19.5
8/14/95	WT072	7	0	.0930	12.8	27.1
8/15/95	WT073	7	0	.2319	14.7	35.3
8/18/95	WT074	7	0	.1053	12.3	26.5
8/18/95	WT075	9	0	.3099	12.5	31.7
8/30/95	WT076	9	0	.0334	12.2	23.2
8/30/95	WT077	9	0	.0654	13.6	27.6
9/01/95	WT078	9	1	.0323	9.6	18.2

Table D.0 - 1995 aerodynamic roughnesses and observed initiation velocities for elevated PM-10 (spike velocities)
Sorted by major soil group

Date	Site	Major soil group	Unstable (y=1,n=0)	Aerodynamic roughness, zo (cm)	PM-10 spike velocity at z=7.6 cm (mph)	Extrapolated spike velocity at z=10m (mph)
7/12/95	WT035	2	0	.0001	11.9	17.3
7/24/95	WT048	2	0	.0086	11.8	20.4
7/24/95	WT049	2	0	.0037	12.8	21.0
8/08/95	WT068	2	0	.0340	12.4	23.7
6/20/95	WT012	2	0	.1216	11.5	25.0
6/21/95	WT015	2	0	.1695	11.3	26.0
7/14/95	WT038	2	0	.0281	14.3	26.8
7/19/95	WT045	2	0	.2219	11.4	27.2
6/22/95	WT017	2	0	.1760	11.9	27.4
7/14/95	WT040	2	0	.0467	14.7	28.8
7/14/95	WT039	2	0	.2172	12.2	29.0
7/12/95	WT034	2	0	.1738	13.0	29.8
7/18/95	WT041	2	0	.2238	12.5	29.9
7/13/95	WT037	2	0	.1942	12.9	30.2
6/28/95	WT025	2	0	.4891	10.9	30.3
7/13/95	WT036	2	0	.2405	12.5	30.4
7/19/95	WT044	2	0	.0018	19.1	30.4
7/18/95	WT042	2	0	.3416	12.4	32.2
7/26/95	WT050	2	1	.1031	12.0	25.7
7/18/95	WT043	2	1	.0531	13.1	26.1
6/22/95	WT018	2	1	.1970	11.2	26.2
7/27/95	WT055	2	1	.0400	14.0	27.1
7/06/95	WT032	2	1	.0046	17.3	28.7
6/26/95	WT019	2	1	.0547	14.6	29.2
7/27/95	WT054	2	1	.1596	13.7	31.1
6/27/95	WT021	2	1	.0862	15.4	32.4
6/21/95	WT016	2	1	.0355	16.9	32.4
6/27/95	WT022	2	1	.1606	15.1	34.4
7/20/95	WT046	3	0	.1157	14.9	32.3
5/31/95	WT001	3	0	.2876	13.0	32.4
6/30/95	WT029	3	1	.0121	13.6	24.0

Table D.0 - 1995 aerodynamic roughnesses and observed initiation velocities for elevated PM-10 (spike velocities)
Sorted by major soil group

Date	Site	Major soil group	Unstable (y=1,n=0)	Aerodynamic roughness, zo (cm)	PM-10 spike velocity at z=7.6 cm (mph)	Extrapolated spike velocity at z=10m (mph)
8/08/95	WT069	5	0	.0300	12.1	22.9
8/04/95	WT064	5	0	.2226	10.6	25.3
8/03/95	WT065	5	0	.0489	13.0	25.6
6/27/95	WT023	5	0	.2189	12.5	29.8
8/02/95	WT062	5	0	.3139	11.8	30.1
7/07/95	WT033	5	0	.1403	13.6	30.2
8/09/95	WT070	5	0	.1081	14.2	30.5
8/02/95	WT063	5	0	.2891	12.8	31.9
6/09/95	WT007	5	0	.2127	16.5	39.1
8/14/95	WT071	5	1	.0027	12.1	19.5
8/02/95	WT061	5	1	.4099	10.7	28.6
6/01/95	WT002	6	0	.0001	10.3	14.5
6/19/95	WT011	6	0	.0395	9.5	18.4
6/30/95	WT028	6	0	.0169	11.1	19.9
6/29/95	WT026	6	0	.0394	13.6	26.2
8/03/95	WT066	6	0	.0690	14.1	28.7
6/30/95	WT030	6	0	.2453	12.1	29.4
6/29/95	WT027	6	0	.0658	14.5	29.6
6/01/95	WT003	6	0	.2127	16.5	39.1
8/18/95	WT074	7	0	.1053	12.3	26.5
8/14/95	WT072	7	0	.0930	12.8	27.1
7/20/95	WT047	7	0	.1727	13.7	31.5
8/15/95	WT073	7	0	.2319	14.7	35.3
6/19/95	WT010	8	0	.0234	6.7	12.4
6/08/95	WT006	8	0	.1176	10.7	23.4
6/09/95	WT008	8	0	.0116	14.4	25.3
7/25/95	WT051	8	0	.0487	13.8	27.1
6/21/95	WT014	8	0	.1068	13.4	28.9
6/07/95	WT004	8	0	.1996	13.2	31.0
7/25/95	WT052	8	0	.1863	13.5	31.3
6/09/95	WT009	8	0	.0964	15.3	32.5

Table D.0 - 1995 aerodynamic roughnesses and observed initiation velocities for elevated PM-10 (spike velocities)
Sorted by major soil group

Date	Site	Major soil group	Unstable (y=1,n=0)	Aerodynamic roughness, zo (cm)	PM-10 spike velocity at z=7.6 cm (mph)	Extrapolated spike velocity at z=10m (mph)
6/08/95	WT005	8	1	.0043	11.5	19.1
7/26/95	WT053	8	1	.0227	11.9	22.0
7/10/95	WT031-F	8	1	.0588	11.1	22.3
7/28/95	WT056	8	1	.0251	12.7	23.6
7/10/95	WT031-G	8	1	.0112	13.5	23.7
7/05/95	WT031-B	8	1	.0707	12.0	24.6
7/10/95	WT031-H	8	1	.0312	13.3	25.1
6/20/95	WT013	8	1	.2158	11.5	27.3
7/05/95	WT031-C	8	1	.1146	12.7	27.6
7/05/95	WT031-A	8	1	.0733	13.5	27.7
7/07/95	WT031-E	8	1	.1666	12.2	27.8
7/28/95	WT057	8	1	.0223	15.7	28.9
7/06/95	WT031-D	8	1	.2628	13.1	32.3
6/26/95	WT020	8	1	.3493	14.3	37.1
8/01/95	WT060	9	0	.0172	11.5	20.8
8/30/95	WT076	9	0	.0334	12.2	23.2
7/31/95	WT058	9	0	.1691	11.2	25.7
8/30/95	WT077	9	0	.0654	13.6	27.6
8/01/95	WT059	9	0	.1395	13.8	30.7
8/18/95	WT075	9	0	.3099	12.5	31.7
9/01/95	WT078	9	1	.0323	9.6	18.2
6/28/95	WT024	9	1	.0511	11.9	23.5
8/03/95	WT067					

Table D.1 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
All soils

Unstable (disturbed) sites (new classification) n = 29			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0027	9.6	18.2
mean - 1 std.dev	0.0139	11.3	22.2
mean	0.0514	13.0	26.4
mean + 1 std.dev	0.1898	14.9	31.3
maximum	0.4099	17.3	37.1

Stable (undisturbed) sites (new classification) n = 56			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0001	6.7	12.4
mean - 1 std.dev	0.0124	10.9	21.8
mean	0.0712	12.7	27.0
mean + 1 std.dev	0.4106	14.7	33.4
maximum	0.4899	19.1	39.1

Table D.2 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
Soil Group 2

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0046	11.2	25.7
mean - 1 std.dev	0.0207	12.4	26.3
mean	0.0621	14.2	29.2
mean + 1 std.dev	0.1858	16.3	32.4
maximum	0.1970	17.3	34.4

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0001	10.9	17.3
mean - 1 std.dev	0.0062	11.1	22.5
mean	0.0547	12.6	26.6
mean + 1 std.dev	0.4853	14.4	31.5
maximum	0.4891	19.1	32.2

Table D.3 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
Soil Group 3

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	N/A	N/A	N/A
mean - 1 std.dev	N/A	N/A	N/A
mean	0.0121	13.6	24.0
mean + 1 std.dev	N/A	N/A	N/A
maximum	N/A	N/A	N/A

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.1157	13.0	32.3
mean - 1 std.dev	0.0958	12.6	32.3
mean	0.1824	13.9	32.4
mean + 1 std.dev	0.3473	15.3	32.5
maximum	0.2876	14.9	32.4

Table D.4 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
Soil Group 5

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0027	10.7	19.5
mean - 1 std.dev	0.0009	10.4	18.0
mean	0.0330	11.3	23.6
mean + 1 std.dev	1.1636	12.4	30.9
maximum	0.4099	12.1	28.6

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0300	10.6	22.9
mean - 1 std.dev	0.0620	11.4	25.0
mean	0.1402	12.9	29.2
mean + 1 std.dev	0.3168	14.6	34.1
maximum	0.3139	16.5	39.1

Table D.5 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
Soil Group 6

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	N/A	N/A	N/A
mean - 1 std.dev	N/A	N/A	N/A
mean	N/A	N/A	N/A
mean + 1 std.dev	N/A	N/A	N/A
maximum	N/A	N/A	N/A

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0001	9.5	14.5
mean - 1 std.dev	0.0018	10.3	17.9
mean	0.0273	12.5	24.6
mean + 1 std.dev	0.4050	15.1	33.9
maximum	0.2453	16.5	39.1

Table D.6 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
Soil Group 7

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	N/A	N/A	N/A
mean - 1 std.dev	N/A	N/A	N/A
mean	N/A	N/A	N/A
mean + 1 std.dev	N/A	N/A	N/A
maximum	N/A	N/A	N/A

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0930	12.3	26.5
mean - 1 std.dev	0.0918	12.4	26.1
mean	0.1407	13.3	29.9
mean + 1 std.dev	0.2157	14.4	34.2
maximum	0.2319	14.7	35.3

Table D.7 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities

Soil Group 8

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0043	11.1	19.1
mean - 1 std.dev	0.0153	11.6	22.0
mean	0.0548	12.7	26.0
mean + 1 std.dev	0.1966	14.0	30.8
maximum	0.3493	15.7	37.1

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0116	6.7	12.4
mean - 1 std.dev	0.0255	9.4	18.7
mean	0.0703	12.3	25.5
mean + 1 std.dev	0.1934	16.0	34.9
maximum	0.1996	15.3	32.5

Table D.8 Statistical summary of aerodynamic roughnesses and PM-10 spike velocities
Soil Group 9

Unstable (disturbed) sites (new classification) n = 1			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0323	9.6	18.2
mean - 1 std.dev	0.0294	9.2	17.3
mean	0.0406	10.7	20.7
mean + 1 std.dev	0.0562	12.4	24.8
maximum	0.0511	11.9	23.5

Stable (undisturbed) sites (new classification) n = 2			
		computed	extrapolated
category	aero roughness (cm)	spike velocity @ 7.6 cm (mph)	spike velocity @ 10 m (mph)
minimum	0.0172	11.2	20.8
mean - 1 std.dev	0.0273	11.4	22.4
mean	0.0806	12.4	26.3
mean + 1 std.dev	0.2382	13.5	31.0
maximum	0.3099	13.8	31.7

Section E - 1998-1999 wind tunnel emission factors for Stabilized surfaces

A. Explanation of Tables

The wind tunnel mass balance diagram and the list of mass balance equations (see Section 1) summarize the manipulations of wind tunnel flow data, TSI Dust-Trak(r) concentration data, assumed PM-10 background concentration and tunnel floor dimensions that were employed to compute PM-10 fluxes from the stabilized soil surfaces during Phase I and Phase II .

Phase I took place from August 1998 through December 1998. During wind tunnel testing, the tunnel was run at only velocity on each treated surface. To catch the effects of weathering over time, the tunnel was run once on a treated surface, and then moved to the next treatment. After all 10 surfaces had been tested, the cycle was repeated. the tunnel was returned to the first treated plot, run once, and again moved to the next plot.

Phase I was terminated after inundations of the test location with flood water from four El Nino-associated storms in September and October, and after a freezing and inundation with snowfall from a La Nina-associated storm in December. It was the opinion of the investigator that weathering of the suppressant-treated surfaces under these conditions was not "typical" for southern Nevada, and Phase I was terminated at the end of December.

At the end of Phase I, suppressant was completely removed from all of the surfaces (except for RAP). After removal of all suppressant and crust, the plot that had been treated with lignin sulfonate surface was tested with the wind tunnel prior to reapplication of dust suppressants. This was done to determine the baseline emissions of the untreated, uncrusted surfaces prior to application of suppressants in Phase II.

Phase II took place from February through June of 1999. During Phase II, the tunnel was run several times on each test plot before being moved to the next surface. Additionally, surfaces of the plots were torn up by a pick-up truck tire, and the torn-up sections were tested. Results for Phase II are available as both not torn-up (intact surface) and as torn-up (partially abraded surface) throughout the testing period.

Table E.1 reviews the constants and conversion factors used in PM-10 flux calculations. The cyclone flow is nearly constant at 40 cfm because it is drawn through a venturi that chokes the flow at 40 cfm regardless of atmospheric density. A PM-10 atmospheric background concentration of 20 mg/m^3 was assumed.

Tables E.2 through E.11 are organized as follows by dust suppressant for Phase II, not spike-corrected data, both not torn-up and torn-up.

Table E.2	Magnesium chloride
Table E.3	Double water
Table E.4	Lignin sulfonate
Table E.5	PennzsuppressD(r)
Table E.6	Rohm & Haas acrylic polymer
Table E.7	Hydroseed
Table E.8	Recycled asphalt product (RAP)
Table E.9	Control (surface crusted)
Table E.10	Plastex(r)
Table E.11	Soil Sement(r)

Tables E.2 through E.11 show, for each suppressant applied during Phase II (February 1999 through June 1999), the run date, the wind tunnel run number, the run duration (minutes), soil surface condition (torn up = 1, not torn up = 0), extrapolated wind speed at 10 mph for the run (based on measured aerodynamic roughness), measured average PM-10 concentration (in mg/m^3) for the run, wind tunnel total volumetric flow rate (cubic feet per minute), and computed not spike-corrected flux in milligrams/square meter/minute (mg/m^2/min) and in ton/acre/hour.

Tables E.12 through E.22 are organized as follows for Phase I, not spike corrected data, not torn-up.

Table E.12	Magnesium chloride
Table E.13	Double water
Table E.14	Lignin sulfonate
Table E.15	PennzsuppressD(r)
Table E.16	Rohm & Haas acrylic polymer
Table E.17	Hydroseed
Table E.18	Recycled asphalt product (RAP)
Table E.19	Control - crusted
Table E.20	Control - uncrusted
Table E.21	Plastex(r)
Table E.22	Soil Sement(r)

Tables E.12 through E.22 show, for each suppressant applied during Phase I, (August 1998 through December 1998), the run date, the wind tunnel run number, the run duration (minutes), soil surface condition (torn up = 1, not torn up = 0), extrapolated wind speed at 10 mph for the run (based on measured aerodynamic roughness), measured average PM-10 concentration (in mg/m^3) for the run, wind tunnel total volumetric flow rate (cubic feet per minute), and computed flux in milligrams/square meter/minute (mg/m^2/min) and in ton/acre/hour.

Tables E.23 through E.26 are organized by wind speed category for Phase II stabilized surface, not torn-up fluxes, averaged over the several dust suppressants:

Table E.23	15-19.9 mph
Table E.24	20-24.9 mph
Table E.25	25-29.9 mph
Table E.26	30-34.9 mph

Tables E.23 through E.26 show the computations of geometric mean non-spike corrected flux in each wind speed category for the Phase II testing. The geometric mean fluxes were averaged across all Phase II applied dust suppressants, except for RAP (which had not been reapplied, and would not typically be used to stabilize vacant lands), Hydroseed (which would not typically be used to suppress dust in short-term applications), and the control (which had not been treated with any suppressant).

Since the tunnel was never operated in the same place for more than one run, cumulative fluxes were not computed for the stabilized surfaces. (In comparison, during the 1995 field study, the wind tunnel was operated in the same place for three or four runs at progressively increasing wind speeds, so cumulative fluxes were computed. See Section 1 and Sections A through C, for the methodology of computation of cumulative fluxes and for the results).

Tables E.27 through E.33 are organized by wind speed category for Phase I stabilized surface, not torn-up fluxes, averaged over the several dust suppressants:

Table E.27	5 - 9.9 mph
Table E.28	10-14.9 mph
Table E.29	15-19.9 mph
Table E.30	20-24.9 mph
Table E.31	25-29.9 mph
Table E.32	30-34.9 mph
Table E.33	35-39.9 mph

Tables E.27 though E.33 show the computations of geometric mean non spike-corrected flux in each wind speed category for the Phase I testing. The mean fluxes were averaged across all Phase I applied dust suppressants, except for RAP (which would not typically be used to stabilize vacant lands), Hydroseed (which would not typically be used to suppress dust in short-term applications), and the control (which had not been treated with any suppressant).

At the end of Phase I, the lignin sulfonate surface was torn-up and fluxes were measured for the surface without any suppressant or crust present. These runs were performed to generate baseline, untreated surface data prior to the reapplication of suppressants in Phase II. Records for these runs are marked with an asterisk(*) in Table E.14 and in Tables E.28, E.29 and E.30. As these torn-up surfaces had much higher fluxes than the treated surface, Phase I fluxes were computed for two cases. Case 1 included the torn-up surface runs in the computations of average flux in each wind speed category. Case 2 excluded the torn-up surface runs from the computations of average flux in each wind speed category.

Tables E23 through E33 were generated by running queries to extract all records for each wind speed category for each experimental Phase in a MS Access(r) database of the wind tunnel flux data.

Tables E.34 through E.38 summarize data presented in earlier tables. They are organized as follows:

Table E.34 - Phase I fluxes	not-torn up	not spike-corrected, compared to Phase II
Table E.35 - Phase II fluxes	not torn up	not spike-corrected
Table E.36 - Phase II fluxes	not torn up	spike-corrected
Table E.37 - Phase II fluxes	torn-up	not spike-corrected
Table E.38 - Phase II fluxes	torn-up	spike-corrected

Table E.34 summarizes and compares Phase I and Phase II not torn-up , not spike-corrected fluxes previously presented in Tables E.23 through E.33. It presents geometric mean - 1 standard deviation, geometric mean, and geometric mean + 1 standard deviation values. Each entry in Table E.34 is referenced to the table number (23 through 33) where the computations are carried out. Geometric means were computed instead of arithmetic means because the data sets of fluxes in each 5 mph wind speed range were all strongly right-skewed. Arithmetic means and arithmetic standard deviations did not adequately describe the data, as computations of arithmetic mean - 1 standard deviation would often produce negative results.

Given the unusual weathering (flood inundation and snow) experienced by the Phase I surfaces, it is felt that the Phase II surfaces more realistically represent typical surface treatments that would be initially applied and then weather in the Las Vegas Valley. *It is recommended that Phase II emission factors be used for stabilized lands, and not the Phase I factors.* Phase I data are presented here for completeness and for comparison to Phase II.

Both Phase I and Phase II data were processed for spike removal. However, since use of Phase II factors is recommended, the only spike-corrected stabilized surface data presented in this report are for Phase II. The effects of spike correction on the Phase II data were found to be small

Tables E.35 and E.36 present the Phase II emission factors for intact treated surfaces (*not torn up by the truck tire*). Table E.35 contains data not corrected for effects of the initial "spike" of high PM-10. Table E.36 contains data corrected for effects of the spike.

Tables E.37 and E.38 present the Phase II emission factors for treated surfaces, *torn up by the truck tire*. Table E.37 contains data not corrected for effects of the initial "spike" of high PM-10. Table E.38 contains data corrected for effects of the spike.

B. Explanation of Figures

Figures E1 through E12 graphically display data from Tables E.34 through E.38, so that the reader may visually compare means and dispersions for the stabilized surfaces.

Relationships between data in Figures and Tables are:

Figure	Table	Description
E1	E.34	Phase I stabilized not spike-corrected fluxes
E2	E.34	Phase I stabilized not spike-corrected fluxes - same scale as Fig E3
E3	E.35	Phase II stabilized not spike-corrected fluxes - not torn up
E4	E.36	Phase II stabilized spike-corrected fluxes - not torn up
E5	E.37	Phase II stabilized not spike-corrected fluxes - torn up
E6	E.37	Phase II stabilized not spike-corrected fluxes - torn up - scale as Fig E3
E7	E.38	Phase II stabilized spike-corrected fluxes - torn up - same scale as Fig E5
E8	E.38	Phase II stabilized spike-corrected fluxes - torn up - same scale as Fig E6
E9	E.36	Phase II spikes (ton/acre) - not torn up - 1/1000 scale of Figs C3 and C4
E10	E.38	Phase II spikes (ton/acre) - torn up - 1/10 scale of Figs C3 and C4
E11	E.35-E.36	Phase II fluxes - not spike-corrected v. spike-corrected - not torn up
E12	E.37-E.38	Phase II fluxes - not spike-corrected v. spike-corrected - torn up

Figures E1 and E2 depict Phase I stabilized not spike-corrected fluxes, and are generated from Table E.34. In this case, "not spike-corrected" means that the PM-10 concentration "spike" observed at the beginning of a wind-tunnel run has not been removed prior to computing hourly average fluxes.

Figure E.3 depicts Phase II stabilized not-spike corrected fluxes, (Table E.35) plotted on the same scale as Figure E2 so that Phase I and Phase II data may be directly compared. Figure E3 shows that Phase II stabilized fluxes were lower than Phase I stabilized fluxes.

Relative magnitudes of Phase I and Phase II fluxes may be best compared by examining Table E.34 and by comparing Figures E2 and E3. In general, Phase I fluxes were higher than in Phase II. Typical treated surface PM-10 flux values are on the order of 6×10^{-4} ton/acre/hour for Phase I and 3×10^{-4} ton/acre/hour for Phase II; however, the standard deviations are very large.

In the case of intact surfaces treated with dust suppressant, the presence of the spike was assumed to be small. This assumption was tested for the Phase II by subsequent processing of the data to remove the spike.

Figure E4 depicts Phase II stabilized *spike-corrected* fluxes from intact surfaces, and is generated from Table E.36. In this case, "not spike-corrected" means that the PM-10 concentration "spike" observed at the beginning of a wind-tunnel run has not been removed prior to computing hourly average fluxes. In the case of intact surfaces treated with dust suppressant, the presence of the spike was assumed to be small. This assumption will be tested by subsequent processing of the data to remove the spike.

Figures E5 and E6 depict Phase II, *not spike-corrected* fluxes from the surfaces torn up by the truck tire (Table E.37). Figure E6 replots the Figure E5 data on the same scale as Figure E3 so that not torn up (Figure E3) and torn-up results (Figure E6) may be directly compared.

Figures E7 and E8 depict Phase II, *spike-corrected* fluxes from the surfaces torn up by the truck tire (Table E.38). Figure E7 plots the spike-corrected data on the same scale as Figure E5, so that spike-corrected (Figure E7) and not-spike corrected (Figure E5) results may be directly compared.

Figure E8 replots the Figure E7 data on the same scale as Figures E6 and E3 so that torn-up spike-corrected (Figure E8), torn-up not spike corrected (Figure E6), and not torn-up (not-spike corrected -Figure E3) may be directly compared.

Figure E9 presents the Phase II *not torn-up* spike data in ton/acre, (Table E.36) plotted on 1/1000 the scale of the spike data for unstable and stable native desert (Figures C3 and C4), and shows that not-torn up stabilized surface spike data are very small, about 1/1000 the magnitude of spikes measured from unstable or stable native desert.

Figure E10 presents the Phase II *torn-up* spike data in ton/acre, (Table E.38) plotted on 1/10 the scale of the spike data for unstable and stable native desert (Figures C3 and C4), and shows that torn up stabilized surface spike data are about 1/10 the magnitude of spikes measured from unstable or stable native desert. After a modest amount of abrasion, stabilized surfaces still produce somewhat less PM-10 than native desert.

Figure E11 graphically compares not spike-corrected and spike-corrected *not torn-up* Phase II stabilized land PM-10 emission factors (fluxes in ton/acre/hour) for three wind-speed categories (Tables E.35 and E.36). It shows that spike-removal processing produced spike-corrected means somewhat lower than not-spike corrected; however, at 15-19.9 mph (plotted as 17.5) and 25-29.9 mph (plotted as 27.5), the not-spike corrected and spike-corrected distributions show considerable overlap. At 20-24.9 mph (plotted as 22.5), the distributions show less overlap. Subsequent statistical analyses will determine if the means in the 20-24.9 mph category are significantly different.

Figure E12 graphically compares not spike-corrected and spike-corrected *torn up* Phase II stabilized land PM-10 emission factors (fluxes in ton/acre/hour) for three wind-speed categories (Tables E.37 and E.38). The data need to be replotted on a finer scale to compare the means, but, within each wind-speed category, the distributions show considerable overlap.

Table E.1

Item	Value	Units	Uncertainty +/-
cyclone flow	40	cfm	1
background PM-10	0.020	mg / m3	0.010
conversion factor	0.305	m / ft	0.0002
conversion factor	1000	ug / mg	exact
conversion factor	2.205E-06	lb / mg	.001E-06
conversion factor	5.000E-04	ton / lb	exact
conversion factor	43560	ft2 / acre	exact
conversion factor	4047	m2 / acre	1
conversion factor	60	min / hr	exact
tunnel floor area	2.500	ft2	0.013
tunnel floor area	0.232	m2	0.001
derived conversion	2.68E-04	(ton/acre/hr)/(mg/m2/min)	
conversion factor	1.00E-06	kg/mg	
conversion factor	10000	m2/hectare	
derived conversion	1.00E-02	(kg-m2)/(mg-hectare)	

Table E.2

Magnesium Chloride Phase II fluxes - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
19-Mar-99	1096	MgCl	5	0	24.9	0.012	458.7	-4.86E-01	-1.30E-04
19-Mar-99	1096	MgCl	10	0	24.9	0.016	458.7	-2.43E-01	-6.50E-05
19-Mar-99	1097	MgCl	5	0	23.3	0.026	462.5	3.68E-01	9.83E-05
19-Mar-99	1097	MgCl	10	0	23.3	0.065	462.5	2.76E+00	7.37E-04
19-Mar-99	1098	MgCl	5	0	21.4	0.022	461.9	1.22E-01	3.27E-05
19-Mar-99	1098	MgCl	10	0	21.4	0.021	461.9	6.12E-02	1.64E-05
19-Mar-99	1099	MgCl	5	0	22.6	0.050	463.2	1.84E+00	4.92E-04
19-Mar-99	1099	MgCl	10	0	22.6	0.031	463.2	6.75E-01	1.80E-04
20-Mar-99	1146	MgCl	5	0	20.3	0.175	455.3	9.36E+00	2.50E-03
20-Mar-99	1146	MgCl	10	0	20.3	0.078	455.3	3.50E+00	9.37E-04
20-Mar-99	1147	MgCl	5	1	28.5	0.047	466.9	1.67E+00	4.46E-04
20-Mar-99	1147	MgCl	10	1	28.5	0.043	466.9	1.42E+00	3.80E-04
20-Mar-99	1148	MgCl	5	1	25.6	0.032	470.7	7.47E-01	2.00E-04
20-Mar-99	1148	MgCl	10	1	25.6	0.025	470.7	3.11E-01	8.33E-05
20-Mar-99	1149	MgCl	5	1	25.3	0.285	467.7	1.64E+01	4.39E-03
20-Mar-99	1149	MgCl	10	1	25.3	0.209	467.7	1.17E+01	3.13E-03
20-Mar-99	1150	MgCl	5	1	22.2	0.408	468.3	2.40E+01	6.43E-03
20-Mar-99	1150	MgCl	10	1	22.2	2.237	468.3	1.37E+02	3.67E-02
20-Mar-99	1151	MgCl	5	1	24.5	0.216	468.8	1.22E+01	3.25E-03
20-Mar-99	1151	MgCl	10	1	24.5	0.165	468.8	9.00E+00	2.41E-03
8-Jun-99	1173	MgCl	5	1	23.2	0.063	450.6	2.57E+00	6.88E-04
8-Jun-99	1173	MgCl	10	1	23.2	0.057	450.6	2.21E+00	5.92E-04
8-Jun-99	1174	MgCl	5	1	21.1	0.045	453.5	1.50E+00	4.02E-04
8-Jun-99	1174	MgCl	10	1	21.1	0.060	453.5	2.41E+00	6.44E-04
9-Jun-99	1181	MgCl	5	1	19.7	0.070	453.9	3.01E+00	8.05E-04
9-Jun-99	1181	MgCl	10	1	19.7	0.122	453.9	6.14E+00	1.64E-03
9-Jun-99	1182	MgCl	5	1	22.1	0.072	456.5	3.15E+00	8.42E-04
9-Jun-99	1182	MgCl	10	1	22.1	1.340	456.5	7.99E+01	2.14E-02
9-Jun-99	1183	MgCl	5	1	18.6	0.101	457.5	4.91E+00	1.31E-03
9-Jun-99	1183	MgCl	10	1	18.6	0.059	457.5	2.37E+00	6.33E-04

Table E.3

Double water Phase II fluxes - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
24-Mar-99	1105	Double Water	5	0	25.2	0.043	457.2	1.39E+00	3.73E-04
24-Mar-99	1105	Double Water	10	0	25.2	0.028	457.2	4.85E-01	1.30E-04
24-Mar-99	1106	Double Water	5	0	22.4	0.044	464.9	1.48E+00	3.95E-04
24-Mar-99	1106	Double Water	10	0	22.4	0.030	464.9	6.16E-01	1.65E-04
24-Mar-99	1107	Double Water	5	0	22.0	0.032	461.9	7.34E-01	1.96E-04
24-Mar-99	1107	Double Water	10	0	22.0	0.029	461.9	5.51E-01	1.47E-04
24-Mar-99	1108	Double Water	5	0	25.4	0.039	459.7	1.16E+00	3.10E-04
24-Mar-99	1108	Double Water	10	0	25.4	0.027	459.7	4.26E-01	1.14E-04
24-Mar-99	1109	Double Water	5	0	19.6	0.037	458.4	1.03E+00	2.76E-04
24-Mar-99	1109	Double Water	10	0	19.6	0.050	458.4	1.82E+00	4.88E-04
24-May-99	1157	Double Water	5	1	21.8	0.882	445.8	5.11E+01	1.37E-02
24-May-99	1157	Double Water	10	1	21.8	2.154	445.8	1.26E+02	3.38E-02
24-May-99	1158	Double Water	5	1	27.1	0.542	453.2	3.14E+01	8.39E-03
24-May-99	1158	Double Water	10	1	27.1	1.036	453.2	6.11E+01	1.63E-02
24-May-99	1159	Double Water	5	1	17.6	4.613	452.0	2.75E+02	7.37E-02
24-May-99	1159	Double Water	10	1	17.6	3.708	452.0	2.21E+02	5.92E-02
24-May-99	1160	Double Water	5	1	25.6	0.433	454.0	2.49E+01	6.65E-03
24-May-99	1160	Double Water	10	1	25.6	2.402	454.0	1.43E+02	3.84E-02
24-May-99	1161	Double Water	5	1	26.9	0.323	471.6	1.89E+01	5.05E-03
24-May-99	1161	Double Water	10	1	26.9	2.568	471.6	1.59E+02	4.25E-02
7-Jun-99	1171	Double Water	5	1	18.6	0.281	465.6	1.61E+01	4.30E-03
7-Jun-99	1171	Double Water	10	1	18.6	1.167	465.6	7.07E+01	1.89E-02
7-Jun-99	1172	Double Water	5	1	14.9	1.100	465.7	6.66E+01	1.78E-02
7-Jun-99	1172	Double Water	10	1	14.9	1.827	465.7	1.11E+02	2.98E-02
8-Jun-99	1175	Double Water	5	1	27.9	0.197	455.9	1.07E+01	2.86E-03
8-Jun-99	1175	Double Water	10	1	27.9	0.513	455.9	2.98E+01	7.97E-03
8-Jun-99	1176	Double Water	5	1	27.3	0.337	459.3	1.93E+01	5.16E-03
8-Jun-99	1176	Double Water	10	1	27.3	0.122	459.3	6.21E+00	1.66E-03
9-Jun-99	1184	Double Water	5	1	21.5	0.949	456.8	5.63E+01	1.50E-02
9-Jun-99	1184	Double Water	10	1	21.5	0.251	456.8	1.40E+01	3.74E-03

Table E.4

Lignin sulfonate - Phase II fluxes - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
29-Jan-99	1049	Lig Sulfonate	5	0	25.5	0.055	424.6	1.98E+00	5.30E-04
29-Jan-99	1049	Lig Sulfonate	10	0	25.5	0.049	424.6	1.64E+00	4.39E-04
29-Jan-99	1050	Lig Sulfonate	5	0	18.7	0.118	430.2	5.62E+00	1.50E-03
29-Jan-99	1051	Lig Sulfonate	10	0	18.7	0.064	430.2	2.52E+00	6.75E-04
29-Jan-99	1052	Lig Sulfonate	5	0	15.1	0.099	435.2	4.58E+00	1.22E-03
29-Jan-99	1053	Lig Sulfonate	10	0	15.1	0.092	435.2	4.17E+00	1.12E-03
22-Feb-99	1066	Lig Sulfonate	5	0	21.2	0.052	448.8	1.91E+00	5.10E-04
22-Feb-99	1066	Lig Sulfonate	10	0	21.2	0.129	448.8	6.50E+00	1.74E-03
22-Feb-99	1067	Lig Sulfonate	5	0	23.1	0.059	451.4	2.34E+00	6.25E-04
22-Feb-99	1068	Lig Sulfonate	10	0	23.1	0.038	451.4	1.08E+00	2.88E-04
17-May-99	1136	Lig Sulfonate	5	0	27.1	0.074	468.9	3.35E+00	8.96E-04
17-May-99	1136	Lig Sulfonate	10	0	27.1	0.018	468.9	-1.24E-01	-3.32E-05
17-May-99	1137	Lig Sulfonate	5	0	21.3	0.010	468.4	-6.20E-01	-1.66E-04
17-May-99	1137	Lig Sulfonate	10	0	21.3	0.023	468.4	1.86E-01	4.97E-05
18-May-99	1138	Lig Sulfonate	5	0	27.5	0.068	449.5	2.86E+00	7.66E-04
18-May-99	1138	Lig Sulfonate	10	0	27.5	0.073	449.5	3.16E+00	8.46E-04
18-May-99	1139	Lig Sulfonate	5	0	21.0	0.060	451.6	2.40E+00	6.41E-04
18-May-99	1139	Lig Sulfonate	10	0	21.0	0.069	451.6	2.94E+00	7.85E-04
18-May-99	1140	Lig Sulfonate	5	0	29.5	0.052	458.4	1.94E+00	5.20E-04
18-May-99	1140	Lig Sulfonate	10	0	29.5	0.045	458.4	1.52E+00	4.06E-04
29-Jan-99	1141	Lig Sulfonate	5	1	21.5	0.041	434.9	1.22E+00	3.25E-04
29-Jan-99	1142	Lig Sulfonate	10	1	21.5	0.531	434.9	2.96E+01	7.91E-03
29-Jan-99	1143	Lig Sulfonate	5	1	23.9	0.062	439.5	2.46E+00	6.57E-04
29-Jan-99	1144	Lig Sulfonate	10	1	23.9	0.310	439.5	1.70E+01	4.53E-03
29-Jan-99	1145	Lig Sulfonate	5	1	24.8	0.033	440.2	7.61E-01	2.04E-04
29-Jan-99	1146	Lig Sulfonate	10	1	24.8	0.033	440.2	7.61E-01	2.04E-04
22-Feb-99	1147	Lig Sulfonate	5	1	27.1	0.108	449.3	5.25E+00	1.40E-03
22-Feb-99	1148	Lig Sulfonate	10	1	27.1	0.128	449.3	6.44E+00	1.72E-03
22-Feb-99	1149	Lig Sulfonate	5	1	18.8	0.051	447.7	1.84E+00	4.93E-04
22-Feb-99	1150	Lig Sulfonate	10	1	18.8	0.076	447.7	3.33E+00	8.91E-04
18-May-99	1141	Lig Sulfonate	5	1	27.1	0.068	462.9	2.94E+00	7.87E-04
18-May-99	1141	Lig Sulfonate	10	1	27.1	0.059	462.9	2.39E+00	6.39E-04
18-May-99	1142	Lig Sulfonate	5	1	21.3	0.051	465.3	1.91E+00	5.11E-04
18-May-99	1142	Lig Sulfonate	10	1	21.3	0.043	465.3	1.42E+00	3.79E-04
18-May-99	1143	Lig Sulfonate	5	1	27.5	0.150	468.5	8.06E+00	2.16E-03
18-May-99	1143	Lig Sulfonate	10	1	27.5	0.138	468.5	7.31E+00	1.96E-03
18-May-99	1144	Lig Sulfonate	5	1	21.0	0.195	475.5	1.10E+01	2.94E-03
18-May-99	1144	Lig Sulfonate	10	1	21.0	0.047	475.5	1.70E+00	4.54E-04
18-May-99	1145	Lig Sulfonate	5	1	29.5	0.043	467.1	1.42E+00	3.80E-04
18-May-99	1145	Lig Sulfonate	10	1	29.5	0.238	467.1	1.35E+01	3.60E-03

Table E.4

Lignin sulfonate - Phase II fluxes - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
7-Jun-99	1169	Lig Sulfonate	5	1	27.1	0.024	462.8	2.45E-01	6.56E-05
7-Jun-99	1169	Lig Sulfonate	10	1	27.1	0.031	462.8	6.74E-01	1.80E-04
7-Jun-99	1170	Lig Sulfonate	5	1	21.3	0.045	460.1	1.52E+00	4.08E-04
7-Jun-99	1170	Lig Sulfonate	10	1	21.3	0.042	460.1	1.34E+00	3.59E-04
8-Jun-99	1177	Lig Sulfonate	5	1	27.5	0.085	462.9	3.99E+00	1.07E-03
8-Jun-99	1177	Lig Sulfonate	10	1	27.5	0.053	462.9	2.02E+00	5.41E-04
8-Jun-99	1178	Lig Sulfonate	5	1	21.0	0.066	477.8	2.90E+00	7.76E-04
8-Jun-99	1178	Lig Sulfonate	10	1	21.0	0.082	477.8	3.91E+00	1.05E-03
9-Jun-99	1185	Lig Sulfonate	5	1	29.5	0.065	467.4	2.78E+00	7.44E-04
9-Jun-99	1185	Lig Sulfonate	10	1	29.5	0.115	467.4	5.88E+00	1.57E-03

Table E.5

PennzsuppressD - Phase II fluxes - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
17-Mar-99	1091	Penn Suppress	5	0	16.3	0.028	454.6	4.82E-01	1.29E-04
17-Mar-99	1091	Penn Suppress	10	0	16.3	0.045	454.6	1.51E+00	4.03E-04
17-Mar-99	1092	Penn Suppress	5	0	16.1	0.035	457.9	9.11E-01	2.43E-04
17-Mar-99	1092	Penn Suppress	10	0	16.1	0.029	457.9	5.46E-01	1.46E-04
17-Mar-99	1093	Penn Suppress	5	0	24.1	0.030	460.0	6.10E-01	1.63E-04
17-Mar-99	1093	Penn Suppress	10	0	24.1	0.033	460.0	7.92E-01	2.12E-04
17-Mar-99	1094	Penn Suppress	5	0	16.8	0.028	459.5	4.87E-01	1.30E-04
17-Mar-99	1094	Penn Suppress	10	0	16.8	0.035	459.5	9.13E-01	2.44E-04
17-Mar-99	1095	Penn Suppress	5	0	17.9	0.031	457.3	6.67E-01	1.78E-04
17-Mar-99	1095	Penn Suppress	10	0	17.9	0.080	457.3	3.64E+00	9.73E-04
1-Jun-99	1162	Penn Suppress	5	1	20.6	0.067	454.1	2.83E+00	7.57E-04
1-Jun-99	1162	Penn Suppress	10	1	20.6	0.437	454.1	2.51E+01	6.72E-03
1-Jun-99	1163	Penn Suppress	5	1	22.9	1.259	451.9	7.43E+01	1.99E-02
1-Jun-99	1163	Penn Suppress	10	1	22.9	3.701	451.9	2.21E+02	5.90E-02
1-Jun-99	1164	Penn Suppress	5	1	17.7	2.098	459.2	1.26E+02	3.38E-02
1-Jun-99	1164	Penn Suppress	10	1	17.7	0.962	459.2	5.73E+01	1.53E-02
1-Jun-99	1165	Penn Suppress	5	1	19.0	0.988	457.5	5.87E+01	1.57E-02
1-Jun-99	1165	Penn Suppress	10	1	19.0	3.609	457.5	2.18E+02	5.82E-02
10-Jun-99	1166	Penn Suppress	5	1	17.3	1.185	458.5	7.08E+01	1.89E-02
10-Jun-99	1166	Penn Suppress	10	1	17.3	4.801	458.5	2.91E+02	7.77E-02
10-Jun-99	1187	Penn Suppress	5	1	17.0	3.400	466.3	2.09E+02	5.58E-02
10-Jun-99	1187	Penn Suppress	10	1	17.0	0.639	466.3	3.82E+01	1.02E-02
10-Jun-99	1188	Penn Suppress	5	1	18.4	0.557	464.4	3.30E+01	8.83E-03
10-Jun-99	1188	Penn Suppress	10	1	18.4	1.691	464.4	1.03E+02	2.75E-02
10-Jun-99	1189	Penn Suppress	5	1	23.4	1.995	476.8	1.24E+02	3.33E-02
10-Jun-99	1189	Penn Suppress	10	1	23.4	0.814	476.8	5.00E+01	1.34E-02
16-Jun-99	1190	Penn Suppress	5	1	27.0	0.106	462.4	5.27E+00	1.41E-03
16-Jun-99	1190	Penn Suppress	10	1	27.0	0.191	462.4	1.05E+01	2.80E-03
16-Jun-99	1196	Penn Suppress	5	1	32.0	0.349	481.3	2.09E+01	5.59E-03
16-Jun-99	1196	Penn Suppress	10	1	32.0	0.174	481.3	9.79E+00	2.62E-03

Table E.6

Rohm Haas Acrylic Polymer - Phase II fluxes - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
5-Mar-99	1081	Acrylic Polymer	5	0	17.0	0.018	450.2	-1.20E-01	-3.20E-05
5-Mar-99	1081	Acrylic Polymer	10	0	17.0	0.038	450.2	1.08E+00	2.88E-04
5-Mar-99	1082	Acrylic Polymer	5	0	21.9	0.024	451.6	2.40E-01	6.41E-05
5-Mar-99	1082	Acrylic Polymer	10	0	21.9	0.047	451.6	1.62E+00	4.33E-04
5-Mar-99	1084	Acrylic Polymer	5	0	16.4	0.058	456.6	2.30E+00	6.15E-04
5-Mar-99	1084	Acrylic Polymer	10	0	16.4	0.063	456.6	2.60E+00	6.96E-04
5-Mar-99	1085	Acrylic Polymer	5	0	19.9	0.031	450.1	6.57E-01	1.76E-04
5-Mar-99	1085	Acrylic Polymer	10	0	19.9	0.039	450.1	1.14E+00	3.04E-04
5-Mar-99	1086	Acrylic Polymer	5	0	22.8	0.037	450.8	1.02E+00	2.72E-04
5-Mar-99	1086	Acrylic Polymer	10	0	22.8	0.032	450.8	7.18E-01	1.92E-04
5-Mar-99	1083	Acrylic Polymer	5	1	25.5	0.107	455.9	5.26E+00	1.41E-03
5-Mar-99	1083	Acrylic Polymer	10	1	25.5	0.244	455.9	1.35E+01	3.62E-03
10-Mar-99	1087	Acrylic Polymer	5	1	27.8	0.026	452.0	3.60E-01	9.62E-05
10-Mar-99	1087	Acrylic Polymer	10	1	27.8	0.026	452.0	3.60E-01	9.62E-05
10-Mar-99	1088	Acrylic Polymer	5	1	24.8	0.032	450.8	7.18E-01	1.92E-04
10-Mar-99	1088	Acrylic Polymer	10	1	24.8	0.048	450.8	1.68E+00	4.48E-04
10-Mar-99	1089	Acrylic Polymer	5	1	20.5	0.053	456.5	2.00E+00	5.34E-04
10-Mar-99	1089	Acrylic Polymer	10	1	20.5	0.399	456.5	2.29E+01	6.14E-03
10-Mar-99	1090	Acrylic Polymer	5	1	16.6	0.075	452.6	3.30E+00	8.83E-04
10-Mar-99	1090	Acrylic Polymer	10	1	16.6	0.085	452.6	3.90E+00	1.04E-03
16-Jun-99	1191	Acrylic Polymer	5	1	25.1	0.151	467.1	8.10E+00	2.17E-03
16-Jun-99	1191	Acrylic Polymer	10	1	25.1	0.221	467.1	1.24E+01	3.32E-03
16-Jun-99	1192	Acrylic Polymer	5	1	20.2	0.155	473.4	8.45E+00	2.26E-03
16-Jun-99	1192	Acrylic Polymer	10	1	20.2	0.123	473.4	6.45E+00	1.72E-03
16-Jun-99	1193	Acrylic Polymer	5	1	27.1	0.164	472.8	9.00E+00	2.41E-03
16-Jun-99	1193	Acrylic Polymer	10	1	27.1	0.096	472.8	4.75E+00	1.27E-03
16-Jun-99	1194	Acrylic Polymer	5	1	25.2	0.064	473.1	2.75E+00	7.36E-04
16-Jun-99	1194	Acrylic Polymer	10	1	25.2	0.064	473.1	2.75E+00	7.36E-04
16-Jun-99	1195	Acrylic Polymer	5	1	24.8	0.055	482.1	2.23E+00	5.96E-04
16-Jun-99	1195	Acrylic Polymer	10	1	24.8	0.063	482.1	2.74E+00	7.32E-04

Table E.7

Hydroseed - Phase II fluxes - not spike-corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
27-Feb-99	1070	Hydroseed	5	0	24.2	0.078	441.6	3.41E+00	9.11E-04
27-Feb-99	1070	Hydroseed	10	0	24.2	0.067	441.6	2.76E+00	7.38E-04
27-Feb-99	1071	Hydroseed	5	0	22.0	0.061	445.3	2.43E+00	6.49E-04
27-Feb-99	1071	Hydroseed	10	0	22.0	0.045	445.3	1.48E+00	3.96E-04
2-Mar-99	1078	Hydroseed	5	0	22.3	3.046	446.6	1.80E+02	4.80E-02
2-Mar-99	1078	Hydroseed	10	0	22.3	2.472	446.6	1.45E+02	3.89E-02
2-Mar-99	1079	Hydroseed	5	0	19.6	2.959	455.0	1.77E+02	4.74E-02
2-Mar-99	1079	Hydroseed	10	0	19.6	2.427	455.0	1.45E+02	3.88E-02
2-Mar-99	1080	Hydroseed	5	0	28.5	2.092	461.2	1.27E+02	3.39E-02
2-Mar-99	1080	Hydroseed	10	0	28.5	1.803	461.2	1.09E+02	2.91E-02
6-Apr-99	1110	Hydroseed	5	0	28.7	0.032	443.0	7.07E-01	1.89E-04
6-Apr-99	1110	Hydroseed	10	0	28.7	0.027	443.0	4.12E-01	1.10E-04
15-Apr-99	1118	Hydroseed	5	0	27.2	0.035	444.5	8.86E-01	2.37E-04
15-Apr-99	1118	Hydroseed	10	0	27.2	0.043	444.5	1.36E+00	3.63E-04
15-Apr-99	1119	Hydroseed	5	0	28.1	0.026	439.1	3.50E-01	9.37E-05
15-Apr-99	1119	Hydroseed	10	0	28.1	0.054	439.1	1.99E+00	5.31E-04
27-Feb-99	1072	Hydroseed	5	1	32.3	0.049	447.8	1.72E+00	4.61E-04
27-Feb-99	1072	Hydroseed	10	1	32.3	0.034	447.8	8.33E-01	2.23E-04
27-Feb-99	1073	Hydroseed	5	1	31.1	0.035	449.7	8.96E-01	2.40E-04
27-Feb-99	1073	Hydroseed	10	1	31.1	0.027	449.7	4.18E-01	1.12E-04
27-Feb-99	1074	Hydroseed	5	1	27.4	VOIDED		VOIDED	
27-Feb-99	1074	Hydroseed	10	1	27.4	VOIDED		VOIDED	
27-Feb-99	1075	Hydroseed	5	1	21.0	VOIDED		VOIDED	
27-Feb-99	1075	Hydroseed	10	1	21.0	VOIDED		VOIDED	
27-Feb-99	1076	Hydroseed	5	1	24.3	VOIDED		VOIDED	
27-Feb-99	1076	Hydroseed	10	1	24.3	VOIDED		VOIDED	
2-Mar-99	1077	Hydroseed	5	1		VOIDED		VOIDED	
2-Mar-99	1077	Hydroseed	10	1		VOIDED		VOIDED	
6-Apr-99	1111	Hydroseed	5	1	25.1	0.045	446.2	1.48E+00	3.96E-04
6-Apr-99	1111	Hydroseed	10	1	25.1	0.054	446.2	2.02E+00	5.39E-04
6-Apr-99	1112	Hydroseed	5	1	24.0	0.155	442.1	7.93E+00	2.12E-03
6-Apr-99	1112	Hydroseed	10	1	24.0	0.332	442.1	1.83E+01	4.90E-03
17-Jun-99	1197	Hydroseed	5	1	23.0	0.182	459.7	9.87E+00	2.64E-03
17-Jun-99	1197	Hydroseed	10	1	23.0	0.355	459.7	2.04E+01	5.46E-03
17-Jun-99	1198	Hydroseed	5	1	25.8	0.151	476.4	8.25E+00	2.21E-03
17-Jun-99	1198	Hydroseed	10	1	25.8	0.377	476.4	2.25E+01	6.01E-03
17-Jun-99	1199	Hydroseed	5	1	29.7	0.639	476.3	3.90E+01	1.04E-02
17-Jun-99	1199	Hydroseed	10	1	29.7	0.192	476.3	1.08E+01	2.90E-03
17-Jun-99	1200	Hydroseed	5	1	25.3	0.411	471.7	2.44E+01	6.52E-03
17-Jun-99	1200	Hydroseed	10	1	25.3	0.259	471.7	1.49E+01	3.99E-03

Table E.7

Hydroseed - Phase II fluxes - not spike-corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
17-Jun-99	1201	Hydroseed	5	1	29.9	0.229	482.0	1.33E+01	3.56E-03
17-Jun-99	1201	Hydroseed	10	1	29.9	0.166	482.0	9.29E+00	2.48E-03
24-Jun-99	1207	Hydroseed	5	1	27.0	0.116	467.5	5.94E+00	1.59E-03
24-Jun-99	1207	Hydroseed	10	1	27.0	0.060	467.5	2.47E+00	6.62E-04

Table E.8

Rap fluxes - Phase II - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
6-May-99	1131	RAP	5	0	18.8	0.072	465.7	3.21E+00	8.57E-04
6-May-99	1131	RAP	10	0	18.8	0.047	465.7	1.66E+00	4.45E-04
6-May-99	1132	RAP	5	0	20.8	0.132	472.4	7.00E+00	1.87E-03
6-May-99	1132	RAP	10	0	20.8	0.050	472.4	1.87E+00	5.01E-04
7-May-99	1133	RAP	5	0		VOIDED		VOIDED	
7-May-99	1133	RAP	10	0		VOIDED		VOIDED	
7-May-99	1134	RAP	5	0	21.2	0.030	476.4	6.30E-01	1.68E-04
7-May-99	1134	RAP	10	0	21.2	0.024	476.4	2.52E-01	6.73E-05
7-May-99	1135	RAP	5	0	20.9	0.017	475.4	-1.88E-01	-5.04E-05
7-May-99	1135	RAP	10	0	20.9	0.023	475.4	1.88E-01	5.04E-05
22-Jun-99	1202	RAP	5	0	16.6	0.077	457.1	3.45E+00	9.24E-04
22-Jun-99	1202	RAP	10	0	16.6	0.081	457.1	3.70E+00	9.89E-04
21-May-99	1152	RAP	5	1	21.7	0.060	450.7	2.39E+00	6.40E-04
21-May-99	1152	RAP	10	1	21.7	0.078	450.7	3.47E+00	9.28E-04
21-May-99	1153	RAP	5	1	23.7	0.062	464.7	2.58E+00	6.91E-04
21-May-99	1153	RAP	10	1	23.7	0.067	464.7	2.89E+00	7.73E-04
21-May-99	1154	RAP	5	1	22.9	0.043	468.5	1.43E+00	3.81E-04
21-May-99	1154	RAP	10	1	22.9	0.032	468.5	7.44E-01	1.99E-04
21-May-99	1155	RAP	5	1	23.1	0.037	476.4	1.07E+00	2.86E-04
21-May-99	1155	RAP	10	1	23.1	0.036	476.4	1.01E+00	2.69E-04
21-May-99	1156	RAP	5	1	24.7	0.036	475.1	1.00E+00	2.69E-04
21-May-99	1156	RAP	10	1	24.7	0.030	475.1	6.28E-01	1.68E-04
22-Jun-99	1203	RAP	5	1	24.5	0.156	474.6	8.53E+00	2.28E-03
22-Jun-99	1203	RAP	10	1	24.5	0.174	474.6	9.66E+00	2.58E-03
22-Jun-99	1204	RAP	5	1	20.7	0.076	471.1	3.49E+00	9.33E-04
22-Jun-99	1204	RAP	10	1	20.7	0.083	471.1	3.93E+00	1.05E-03
22-Jun-99	1205	RAP	5	1	19.8	0.104	467.5	5.20E+00	1.39E-03
22-Jun-99	1205	RAP	10	1	19.8	0.182	467.5	1.00E+01	2.68E-03
22-Jun-99	1206	RAP	5	1	20.6	0.077	468.7	3.54E+00	9.45E-04
22-Jun-99	1206	RAP	10	1	20.6	0.125	468.7	6.51E+00	1.74E-03
25-Jun-99	1213	RAP	5	1	16.0	0.082	458.8	3.77E+00	1.01E-03
25-Jun-99	1213	RAP	10	1	16.0	0.083	458.8	3.83E+00	1.02E-03

Table E.9

Control fluxes - Phase II - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
21-Apr-99	1120	Control	5	0	24.3	0.075	463.7	3.38E+00	9.03E-04
21-Apr-99	1120	Control	10	0	24.3	0.029	463.7	5.53E-01	1.48E-04
21-Apr-99	1121	Control	5	0	22.1	0.065	472.4	2.81E+00	7.52E-04
21-Apr-99	1121	Control	10	0	22.1	0.045	472.4	1.56E+00	4.18E-04
26-Apr-99	1124	Control	5	0	23.4	0.061	465.6	2.53E+00	6.76E-04
26-Apr-99	1124	Control	10	0	23.4	0.071	465.6	3.14E+00	8.41E-04
26-Apr-99	1125	Control	5	0	22.0	0.295	473.0	1.72E+01	4.60E-03
26-Apr-99	1125	Control	10	0	22.0	0.166	473.0	9.13E+00	2.44E-03
6-May-99	1128	Control	5	0	18.2	0.050	457.4	1.82E+00	4.87E-04
6-May-99	1128	Control	10	0	18.2	0.086	457.4	4.00E+00	1.07E-03
21-Apr-99	1122	Control	5	1	19.6	0.049	467.6	1.79E+00	4.80E-04
21-Apr-99	1122	Control	10	1	19.6	0.050	467.6	1.86E+00	4.96E-04
23-Apr-99	1123	Control	5	1	22.1	0.176	444.8	9.22E+00	2.47E-03
23-Apr-99	1123	Control	10	1	22.1	1.159	444.8	6.73E+01	1.80E-02
26-Apr-99	1126	Control	5	1	23.7	0.260	469.5	1.49E+01	3.99E-03
26-Apr-99	1126	Control	10	1	23.7	0.721	469.5	4.35E+01	1.16E-02
26-Apr-99	1127	Control	5	1	30.0	0.159	476.8	8.76E+00	2.34E-03
26-Apr-99	1127	Control	10	1	30.0	0.066	476.8	2.90E+00	7.75E-04
6-May-99	1129	Control	5	1	20.7	0.259	459.1	1.45E+01	3.89E-03
6-May-99	1129	Control	10	1	20.7	1.848	459.1	1.11E+02	2.97E-02
6-May-99	1130	Control	5	1	19.3	0.347	459.0	1.99E+01	5.32E-03
6-May-99	1130	Control	10	1	19.3	1.336	459.0	8.01E+01	2.14E-02
25-Jun-99	1214	Control	5	1	19.0	0.154	463.3	8.22E+00	2.20E-03
25-Jun-99	1214	Control	10	1	19.0	0.250	463.3	1.41E+01	3.77E-03
25-Jun-99	1215	Control	5	1	16.6	0.142	466.0	7.53E+00	2.01E-03
25-Jun-99	1215	Control	10	1	16.6	0.225	466.0	1.26E+01	3.38E-03
25-Jun-99	1216	Control	5	1	19.0	0.494	468.3	2.94E+01	7.85E-03
25-Jun-99	1216	Control	10	1	19.0	0.375	468.3	2.20E+01	5.88E-03
25-Jun-99	1217	Control	5	1	20.0	0.798	473.7	4.87E+01	1.30E-02
25-Jun-99	1217	Control	10	1	20.0	0.487	473.7	2.93E+01	7.82E-03

Table E.10

Plastex fluxes - Phase II - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
3-Feb-99	1056	Plastex	5	0	23.5	0.062	441.9	2.47E+00	6.60E-04
3-Feb-99	1056	Plastex	10	0	23.5	0.055	441.9	2.06E+00	5.50E-04
3-Feb-99	1057	Plastex	5	0	24.7	0.055	442.5	2.06E+00	5.51E-04
3-Feb-99	1058	Plastex	10	0	24.7	0.057	442.5	2.18E+00	5.82E-04
3-Feb-99	1059	Plastex	5	0	19.8	0.059	448.7	2.32E+00	6.21E-04
3-Feb-99	1060	Plastex	10	0	19.8	0.058	448.7	2.26E+00	6.05E-04
3-Feb-99	1061	Plastex	5	0	24.0	0.069	446.9	2.91E+00	7.78E-04
3-Feb-99	1062	Plastex	10	0	24.0	0.071	446.9	3.03E+00	8.10E-04
3-Feb-99	1063	Plastex	5	0	25.7	0.044	452.8	1.44E+00	3.86E-04
3-Feb-99	1064	Plastex	10	0	25.7	0.039	452.8	1.14E+00	3.05E-04
3-Feb-99	1065	Plastex	5	1	20.8	0.078	446.5	3.44E+00	9.20E-04
3-Feb-99	1066	Plastex	10	1	20.8	0.491	446.5	2.79E+01	7.47E-03
3-Feb-99	1067	Plastex	5	1	26.0	0.180	452.5	9.61E+00	2.57E-03
3-Feb-99	1068	Plastex	10	1	26.0	0.100	452.5	4.80E+00	1.28E-03
3-Feb-99	1069	Plastex	5	1	19.3	0.102	445.6	4.85E+00	1.30E-03
3-Feb-99	1070	Plastex	10	1	19.3	0.134	445.6	6.75E+00	1.80E-03
3-Feb-99	1071	Plastex	5	1	22.8	0.106	444.1	5.08E+00	1.36E-03
3-Feb-99	1072	Plastex	10	1	22.8	0.101	444.1	4.78E+00	1.28E-03
3-Feb-99	1073	Plastex	5	1	20.5	0.109	450.4	5.32E+00	1.42E-03
3-Feb-99	1074	Plastex	10	1	20.5	0.082	450.4	3.71E+00	9.91E-04
24-Jun-99	1208	Plastex	5	1	27.1	0.042	472.4	1.37E+00	3.68E-04
24-Jun-99	1208	Plastex	10	1	27.1	0.081	472.4	3.81E+00	1.02E-03
24-Jun-99	1209	Plastex	5	1	25.5	0.155	472.5	8.44E+00	2.26E-03
24-Jun-99	1209	Plastex	10	1	25.5	0.095	472.5	4.69E+00	1.25E-03
24-Jun-99	1210	Plastex	5	1	21.3	0.168	474.5	9.28E+00	2.48E-03
24-Jun-99	1210	Plastex	10	1	21.3	0.173	474.5	9.60E+00	2.57E-03
24-Jun-99	1211	Plastex	5	1	23.9	0.206	474.5	1.17E+01	3.12E-03
24-Jun-99	1211	Plastex	10	1	23.9	0.226	474.5	1.29E+01	3.46E-03
24-Jun-99	1212	Plastex	5	1	26.2	0.123	474.1	6.46E+00	1.73E-03
24-Jun-99	1212	Plastex	10	1	26.2	0.175	474.1	9.71E+00	2.60E-03

Table E.11

Soil Sement(c) fluxes - Phase II - not spike corrected

Date	Run #	Suppressant	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/(m^2*min)	Flux (ton/(acre*hr)
22-Mar-99	1100	Soil Sement	5	0	30.2	0.007	459.7	-7.92E-01	-2.12E-04
22-Mar-99	1100	Soil Sement	10	0	30.2	0.013	459.7	-4.26E-01	-1.14E-04
22-Mar-99	1101	Soil Sement	5	0	25.2	0.020	462.6	0.00E+00	0.00E+00
22-Mar-99	1101	Soil Sement	10	0	25.2	0.021	462.6	6.13E-02	1.64E-05
22-Mar-99	1102	Soil Sement	5	0	29.1	0.021	461.9	6.12E-02	1.64E-05
22-Mar-99	1102	Soil Sement	10	0	29.1	0.019	461.9	-6.12E-02	-1.64E-05
22-Mar-99	1103	Soil Sement	5	0	27.4	0.025	461.1	3.05E-01	8.17E-05
22-Mar-99	1103	Soil Sement	10	0	27.4	0.023	461.1	1.83E-01	4.90E-05
22-Mar-99	1104	Soil Sement	5	0	24.7	0.024	461.0	2.44E-01	6.53E-05
22-Mar-99	1104	Soil Sement	10	0	24.7	0.027	461.0	4.28E-01	1.14E-04
13-Apr-99	1113	Soil Sement	5	1	26.6	0.029	462.1	5.51E-01	1.47E-04
13-Apr-99	1113	Soil Sement	10	1	26.6	0.029	462.1	5.51E-01	1.47E-04
13-Apr-99	1114	Soil Sement	5	1	22.2	0.021	465.3	6.16E-02	1.65E-05
13-Apr-99	1114	Soil Sement	10	1	22.2	0.022	465.3	1.23E-01	3.30E-05
13-Apr-99	1115	Soil Sement	5	1	24.2	0.019	467.1	-6.18E-02	-1.65E-05
13-Apr-99	1115	Soil Sement	10	1	24.2	0.020	467.1	0.00E+00	0.00E+00
13-Apr-99	1116	Soil Sement	5	1	23.9	0.019	467.5	-6.19E-02	-1.65E-05
13-Apr-99	1116	Soil Sement	10	1	23.9	0.020	467.5	0.00E+00	0.00E+00
13-Apr-99	1117	Soil Sement	5	1	26.5	0.025	468.4	3.10E-01	8.29E-05
13-Apr-99	1117	Soil Sement	10	1	26.5	0.030	468.4	6.20E-01	1.66E-04
7-Jun-99	1167	Soil Sement	5	1	27.2	0.075	454.1	3.31E+00	8.86E-04
7-Jun-99	1167	Soil Sement	10	1	27.2	0.044	454.1	1.45E+00	3.87E-04
7-Jun-99	1168	Soil Sement	5	1	22.3	0.046	455.8	1.57E+00	4.20E-04
7-Jun-99	1168	Soil Sement	10	1	22.3	0.037	455.8	1.03E+00	2.75E-04
8-Jun-99	1179	Soil Sement	5	1	21.3	0.083	468.7	3.91E+00	1.04E-03
8-Jun-99	1179	Soil Sement	10	1	21.3	0.196	468.7	1.09E+01	2.92E-03
8-Jun-99	1180	Soil Sement	5	1	24.5	0.058	471.8	2.37E+00	6.34E-04
8-Jun-99	1180	Soil Sement	10	1	24.5	0.126	471.8	6.61E+00	1.77E-03
9-Jun-99	1186	Soil Sement	5	1	25.0	0.128	466.7	6.67E+00	1.78E-03
9-Jun-99	1186	Soil Sement	10	1	25.0	0.075	466.7	3.40E+00	9.09E-04

Table E.12

Magnesium chloride Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/11/98	MgCl	102	10	32.4	0	0.039	474.2	1.19E+00	3.19E-04
8/20/98	MgCl	112	10	19.6	0	0.093	459.1	4.44E+00	1.19E-03
8/25/98	MgCl	130	10	26.0	0	0.151	463.2	8.04E+00	2.15E-03
8/28/98	MgCl	137	10	30.1	0	0.094	459.3	4.51E+00	1.20E-03
9/16/98	MgCl	156	5	29.3	0	0.030	467.7	6.19E-01	1.66E-04
9/16/98	MgCl	156	10	29.3	0	0.029	467.7	5.57E-01	1.49E-04
9/25/98	MgCl	171	5	22.4	0	0.033	459.3	7.91E-01	2.12E-04
9/25/98	MgCl	171	10	22.4	0	0.043	459.3	1.40E+00	3.74E-04
10/5/98	MgCl	182	5	8.2	0	0.046	447.1	1.54E+00	4.13E-04
10/5/98	MgCl	182	10	8.2	0	0.113	447.1	5.52E+00	1.48E-03
10/21/98	MgCl	190	5	17.7	0	0.062	439.2	2.45E+00	6.56E-04
10/21/98	MgCl	190	10	17.7	0	0.067	439.2	2.75E+00	7.34E-04
11/4/98	MgCl	1015	5	21.7	0	0.026	455.1	3.62E-01	9.69E-05
11/4/98	MgCl	1015	10	21.7	0	0.026	455.1	3.62E-01	9.69E-05
11/6/98	MgCl	1016	5	19.3	0	0.025	433.7	2.89E-01	7.72E-05
11/6/98	MgCl	1016	10	19.3	0	0.027	433.7	4.04E-01	1.08E-04
11/6/98	MgCl	1017	5	23.3	0	0.023	433.4	1.73E-01	4.63E-05
11/6/98	MgCl	1017	10	23.3	0	0.031	433.4	6.35E-01	1.70E-04

Table E.13

Double water - Phase I fluxes - not spike-corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/11/98	Double Water	108	10	25.6	0	0.332	482.2	1.99E+01	5.31E-03
8/20/98	Double Water	114	10	25.1	0	0.045	463.9	1.54E+00	4.11E-04
8/25/98	Double Water	129	10	23.6	0	0.249	465.5	1.41E+01	3.77E-03
8/28/98	Double Water	136	10	34.8	0	0.067	465.4	2.90E+00	7.75E-04
9/16/98	Double Water	155	5	33.8	0	0.044	470.0	1.49E+00	3.99E-04
9/16/98	Double Water	155	10	33.8	0	0.035	470.0	9.33E-01	2.49E-04
9/25/98	Double Water	170	5	21.0	0	0.034	460.1	8.54E-01	2.28E-04
9/25/98	Double Water	170	10	21.0	0	0.042	460.1	1.34E+00	3.59E-04
10/5/98	Double Water	181	5	13.1	0	0.054	445.9	2.01E+00	5.39E-04
10/5/98	Double Water	181	10	13.1	0	0.129	445.9	6.46E+00	1.73E-03
10/21/98	Double Water	191	5	25.9	0	0.104	440.8	4.92E+00	1.32E-03
10/21/98	Double Water	191	10	25.9	0	0.099	440.8	4.63E+00	1.24E-03
11/4/98	Double Water	1014	5	19.6	0	0.026	463.4	3.68E-01	9.85E-05
11/4/98	Double Water	1014	10	19.6	0	0.020	463.4	0.00E+00	0.00E+00
11/6/98	Double Water	1018	5	26.5	0	0.016	438.6	-2.33E-01	-6.24E-05
11/6/98	Double Water	1018	10	26.5	0	0.026	438.6	3.50E-01	9.36E-05
11/6/98	Double Water	1019	5	28.8	0	0.048	450.9	1.68E+00	4.48E-04
11/6/98	Double Water	1019	10	28.8	0	0.041	450.9	1.26E+00	3.36E-04

Table E.14

Lignin Sulfonate Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/12/98	Lignin Sulfonate	107	10	34.8	0	0.427	471.7	2.54E+01	6.79E-03
8/20/98	Lignin Sulfonate	115	10	14.6	0	0.139	475.6	7.48E+00	2.00E-03
8/25/98	Lignin Sulfonate	128	10	34.9	0	0.078	468.2	3.59E+00	9.61E-04
8/28/98	Lignin Sulfonate	139	10	15.4	0	0.144	476.9	7.81E+00	2.09E-03
9/16/98	Lignin Sulfonate	154	5	13.1	0	0.064	460.9	2.69E+00	7.19E-04
9/16/98	Lignin Sulfonate	154	10	13.1	0	0.044	460.9	1.47E+00	3.92E-04
9/25/98	Lignin Sulfonate	169	5	11.1	0	0.040	461.6	1.22E+00	3.27E-04
9/25/98	Lignin Sulfonate	169	10	11.1	0	0.057	461.6	2.26E+00	6.05E-04
10/5/98	Lignin Sulfonate	179	5	17.7	0	0.054	439.1	1.99E+00	5.31E-04
10/5/98	Lignin Sulfonate	179	10	17.7	0	0.333	439.1	1.83E+01	4.89E-03
10/21/98	Lignin Sulfonate	192	5	32.2	0	0.069	447.0	2.91E+00	7.78E-04
10/21/98	Lignin Sulfonate	192	10	32.2	0	0.079	447.0	3.50E+00	9.37E-04
11/4/98	Lignin Sulfonate	1013	5	24.1	0	0.020	454.0	0.00E+00	0.00E+00
11/4/98	Lignin Sulfonate	1013	10	24.1	0	0.023	454.0	1.81E-01	4.83E-05
11/6/98	Lignin Sulfonate	1020	5	20.2	0	0.035	446.8	8.90E-01	2.38E-04
11/6/98	Lignin Sulfonate	1020	10	20.2	0	0.059	446.8	2.31E+00	6.19E-04
11/6/98	Lignin Sulfonate	1021	5	24.9	0	0.029	445.3	5.32E-01	1.42E-04
11/6/98	Lignin Sulfonate	1021	10	24.9	0	0.025	445.3	2.96E-01	7.91E-05
12/30/98	Lignin Sulfonate*	1035	5	21.8	0	0.159	433.9	8.03E+00	2.15E-03
12/30/98	Lignin Sulfonate*	1035	10	21.8	0	0.153	433.9	7.68E+00	2.05E-03
12/30/98	Lignin Sulfonate*	1036	5	18.9	0	0.359	427.9	1.93E+01	5.17E-03
12/30/98	Lignin Sulfonate*	1036	10	18.9	0	10.648	427.9	6.06E+02	1.62E-01
12/30/98	Lignin Sulfonate*	1037	5	10.4	0	0.174	431.4	8.85E+00	2.37E-03
12/30/98	Lignin Sulfonate*	1037	10	10.4	0	1.473	431.4	8.35E+01	2.23E-02
12/30/98	Lignin Sulfonate*	1038	5	18.3	0	0.408	432.9	2.24E+01	5.98E-03
12/30/98	Lignin Sulfonate*	1038	10	18.3	0	0.269	432.9	1.44E+01	3.84E-03

Table E.15

Penn Suppress Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/13/98	Penn Suppress	105	10	21.8	0	0.411	470.0	2.43E+01	6.50E-03
8/21/98	Penn Suppress	116	10	22.0	0	0.099	474.8	4.96E+00	1.33E-03
8/26/98	Penn Suppress	132	10	24.3	0	0.157	461.4	8.38E+00	2.24E-03
8/31/98	Penn Suppress	141	10	38.9	0	0.022	457.4	1.21E-01	3.24E-05
9/14/98	Penn Suppress	160	5	29.6	0	0.023	474.2	1.88E-01	5.03E-05
9/14/98	Penn Suppress	160	10	29.6	0	0.012	474.2	-5.02E-01	-1.34E-04
9/23/98	Penn Suppress	167	5	29.3	0	0.035	465.4	9.24E-01	2.47E-04
9/23/98	Penn Suppress	167	10	29.3	0	0.034	465.4	8.63E-01	2.31E-04
9/28/98	Penn Suppress	175	5	18.7	0	0.057	459.3	2.25E+00	6.02E-04
9/28/98	Penn Suppress	175	10	18.7	0	0.084	459.3	3.90E+00	1.04E-03
10/9/98	Penn Suppress	189	5	23.4	0	0.083	463.9	3.87E+00	1.04E-03
10/9/98	Penn Suppress	189	10	23.4	0	0.093	463.9	4.48E+00	1.20E-03
10/21/98	Penn Suppress	194	5	19.1	0	0.035	456.3	9.08E-01	2.43E-04
10/21/98	Penn Suppress	194	10	19.1	0	0.145	456.3	7.56E+00	2.02E-03
10/26/98	Penn Suppress	199	5	19.0	0	0.023	445.9	1.78E-01	4.75E-05
10/26/98	Penn Suppress	199	10	19.0	0	0.028	445.9	4.74E-01	1.27E-04
11/4/98	Penn Suppress	1011	5	33.3	0	0.030	441.1	5.87E-01	1.57E-04
11/4/98	Penn Suppress	1011	10	33.3	0	0.022	441.1	1.17E-01	3.14E-05

Table E.16

Rohm Haas Acrylic Polymer - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/13/98	Acrylic Polymer	101	10		0	0.176	473.8	9.77E+00	2.61E-03
8/21/98	Acrylic Polymer	117	10	25.3	0	0.090	459.5	4.26E+00	1.14E-03
8/26/98	Acrylic Polymer	134	10	36.0	0	0.062	469.0	2.61E+00	6.97E-04
8/31/98	Acrylic Polymer	142	10	23.0	0	0.034	475.4	8.80E-01	2.35E-04
9/14/98	Acrylic Polymer	159	5	22.3	0	0.014	466.2	-3.70E-01	-9.90E-05
9/14/98	Acrylic Polymer	159	10	22.3	0	0.022	466.2	1.23E-01	3.30E-05
9/23/98	Acrylic Polymer	166	5	24.4	0	0.048	464.7	1.72E+00	4.61E-04
9/23/98	Acrylic Polymer	166	10	24.4	0	0.051	464.7	1.91E+00	5.10E-04
9/28/98	Acrylic Polymer	174	5	35.3	0	0.063	451.7	2.58E+00	6.89E-04
9/28/98	Acrylic Polymer	174	10	35.3	0	0.060	451.7	2.40E+00	6.41E-04
10/9/98	Acrylic Polymer	188	5	28.4	0	0.069	463.2	3.01E+00	8.04E-04
10/9/98	Acrylic Polymer	188	10	28.4	0	0.055	463.2	2.15E+00	5.74E-04
10/21/98	Acrylic Polymer	195	5	14.4	0	0.031	455.6	6.65E-01	1.78E-04
10/21/98	Acrylic Polymer	195	10	14.4	0	0.037	455.6	1.03E+00	2.75E-04
10/26/98	Acrylic Polymer	1000	5	18.7	0	0.026	445.3	3.55E-01	9.49E-05
10/26/98	Acrylic Polymer	1000	10	18.7	0	0.032	445.3	7.10E-01	1.90E-04
11/4/98	Acrylic Polymer	1010	5	19.8	0	0.092	444.2	4.25E+00	1.14E-03
11/4/98	Acrylic Polymer	1010	10	19.8	0	0.104	444.2	4.96E+00	1.33E-03

Table E.17

Hydroseed - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/21/98	Hydroseed	119	10	23.5	0	0.070	461.6	3.06E+00	8.18E-04
8/17/98	Hydroseed	124	10	38.7	0	0.028	494.5	5.21E-01	1.39E-04
8/26/98	Hydroseed	131	10	40.1	0	0.030	478.0	6.32E-01	1.69E-04
9/2/98	Hydroseed	143	10	33.3	0	0.014	467.0	-3.71E-01	-9.92E-05
9/14/98	Hydroseed	157	5	45.5	0	0.085	454.0	3.91E+00	1.05E-03
9/14/98	Hydroseed	157	10	45.5	0	0.040	454.0	1.20E+00	3.22E-04
9/23/98	Hydroseed	164	5	21.5	0	0.112	450.2	5.50E+00	1.47E-03
9/23/98	Hydroseed	164	10	21.5	0	0.092	450.2	4.30E+00	1.15E-03
9/28/98	Hydroseed	172	5	34.2	0	0.068	447.9	2.86E+00	7.64E-04
9/28/98	Hydroseed	172	10	34.2	0	0.055	447.9	2.08E+00	5.57E-04
10/9/98	Hydroseed	186	5	19.6	0	0.093	455.5	4.41E+00	1.18E-03
10/9/98	Hydroseed	186	10	19.6	0	0.133	455.5	6.83E+00	1.83E-03
10/21/98	Hydroseed	197	5	30.4	0	0.090	472.4	4.37E+00	1.17E-03
10/21/98	Hydroseed	197	10	30.4	0	0.079	472.4	3.69E+00	9.86E-04
10/26/98	Hydroseed	1002	5	35.9	0	0.026	454.4	3.62E-01	9.67E-05
10/26/98	Hydroseed	1002	10	35.9	0	0.028	454.4	4.82E-01	1.29E-04
11/4/98	Hydroseed	1008	5	25.6	0	0.057	435.5	2.15E+00	5.74E-04
11/4/98	Hydroseed	1008	10	25.6	0	0.080	435.5	3.48E+00	9.30E-04

Table E.18

Rap - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/5/98	RAP	109	10	18.0	0		468.7	-1.24E+00	-3.32E-04
8/17/98	RAP	121	10	25.4	0	0.036	475.4	1.01E+00	2.69E-04
8/24/98	RAP	126	10	22.2	0	0.054	472.7	2.13E+00	5.68E-04
8/27/98	RAP	138	10	42.1	0	0.044	460.4	1.46E+00	3.92E-04
9/11/98	RAP	152	5	29.0	0	0.029	471.6	5.61E-01	1.50E-04
9/11/98	RAP	152	10	29.0	0	0.029	471.6	5.61E-01	1.50E-04
9/21/98	RAP	163	5	30.8	0	0.061	476.1	2.58E+00	6.90E-04
9/21/98	RAP	163	10	30.8	0	0.080	476.1	3.78E+00	1.01E-03
9/30/98	RAP	178	5	41.7	0	0.029	470.8	5.60E-01	1.50E-04
9/30/98	RAP	178	10	41.7	0	0.036	470.8	9.96E-01	2.66E-04
10/9/98	RAP	185	5	19.2	0	0.123	446.4	6.11E+00	1.63E-03
10/9/98	RAP	185	10	19.2	0	0.119	446.4	5.87E+00	1.57E-03
10/26/98	RAP	1003	5	49.6	0	0.011	450.7	-5.38E-01	-1.44E-04
10/26/98	RAP	1003	10	49.6	0	0.012	450.7	-4.79E-01	-1.28E-04
11/6/98	RAP	1024	5	36.7	0	0.016	451.6	-2.40E-01	-6.41E-05
11/6/98	RAP	1024	10	36.7	0	0.016	451.6	-2.40E-01	-6.41E-05
11/6/98	RAP	1025	5	33.9	0	0.022	452.7	1.20E-01	3.21E-05
11/6/98	RAP	1025	10	33.9	0	0.041	452.7	1.26E+00	3.37E-04

Table E.19

Control Crusted - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/5/98	Control Crusted	100	10	47.1	0		476.7	0	0
8/19/98	Control Crusted	111	10	28.5	0	0.050	468.5	1.86E+00	4.97E-04
9/11/98	Control Crusted	151	5	27.5	0	0.072	449.9	3.11E+00	8.31E-04
9/11/98	Control Crusted	151	10	27.5	0	0.049	449.9	1.73E+00	4.63E-04
9/21/98	Control Crusted	161	5	16.5	0	0.036	464.7	9.84E-01	2.63E-04
9/21/98	Control Crusted	161	10	16.5	0	0.050	464.7	1.85E+00	4.94E-04
9/30/98	Control Crusted	177	5	15.7	0	0.041	460.1	1.28E+00	3.42E-04
9/30/98	Control Crusted	177	10	15.7	0	0.054	460.1	2.07E+00	5.54E-04
10/9/98	Control Crusted	183	5	15.7	0	0.131	441.0	6.51E+00	1.74E-03
10/9/98	Control Crusted	183	10	15.7	0	0.166	441.0	8.56E+00	2.29E-03
10/23/98	Control Crusted	198	5	36.9	0	0.045	444.1	1.48E+00	3.95E-04
10/23/98	Control Crusted	198	10	36.9	0	0.069	444.1	2.89E+00	7.73E-04
10/28/98	Control Crusted	1005	5	27.9	0	0.057	444.5	2.19E+00	5.84E-04
10/28/98	Control Crusted	1005	10	27.9	0	0.048	444.5	1.65E+00	4.42E-04
11/9/98	Control Crusted	1026	5	20.1	0	0.201	433.4	1.04E+01	2.79E-03
11/9/98	Control Crusted	1026	10	20.1	0	0.190	433.4	9.81E+00	2.62E-03
9/4/98	Control Crusted	144A	5	VOID	0	VOIDED		VOIDED	
9/4/98	Control Crusted	144A	10	VOID	0	VOIDED		VOIDED	

Table E.20

Control Uncrusted - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/24/98	Control Uncrusted	120	10	31.7	0	0.845	482.8	5.26E+01	1.41E-02
8/27/98	Control Uncrusted	135	10	34.3	0	0.307	470.8	1.79E+01	4.78E-03
9/11/98	Control Uncrusted	150	5	30.0	0	0.050	466.4	1.85E+00	4.95E-04
9/11/98	Control Uncrusted	150	10	30.0	0	0.049	466.4	1.79E+00	4.79E-04
9/21/98	Control Uncrusted	162	5	19.3	0	0.054	470.2	2.11E+00	5.66E-04
9/21/98	Control Uncrusted	162	10	19.3	0	3.913	470.2	2.42E+02	6.48E-02
9/30/98	Control Uncrusted	176	5	18.6	0	0.070	463.9	3.07E+00	8.21E-04
9/30/98	Control Uncrusted	176	10	18.6	0	0.169	463.9	9.15E+00	2.45E-03
10/9/98	Control Uncrusted	184	5	14.3	0	0.112	436.4	5.34E+00	1.43E-03
10/9/98	Control Uncrusted	184	10	14.3	0	2.362	436.4	1.36E+02	3.64E-02
10/26/98	Control Uncrusted	1004	5	27.7	0	0.136	451.7	6.95E+00	1.86E-03
10/26/98	Control Uncrusted	1004	10	27.7	0	0.151	451.7	7.85E+00	2.10E-03
10/28/98	Control Uncrusted	1006	5	32.0	0	0.056	443.0	2.12E+00	5.67E-04
10/28/98	Control Uncrusted	1006	10	32.0	0	0.061	443.0	2.41E+00	6.46E-04
11/9/98	Control Uncrusted	1027	5	14.7	0	0.180	432.5	9.22E+00	2.46E-03
11/9/98	Control Uncrusted	1027	10	14.7	0	2.788	432.5	1.59E+02	4.26E-02
9/4/98	Control Uncrusted	142A	5	24.9	0	VOIDED		VOIDED	
9/4/98	Control Uncrusted	142A	10	38.0	0	VOIDED		VOIDED	

Table E.21

Plastex - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/13/98	Plastex	103	10	23.7	0	1.607	478.1	1.00E+02	2.68E-02
8/21/98	Plastex	118	10	25.0	0	0.195	462.7	1.07E+01	2.87E-03
8/26/98	Plastex	133	10	35.1	0	0.047	476.1	1.70E+00	4.54E-04
9/2/98	Plastex	144	10	32.6	0	0.022	476.9	1.26E-01	3.37E-05
9/14/98	Plastex	158	5	32.6	0	0.051	460.1	1.89E+00	5.05E-04
9/14/98	Plastex	158	10	32.6	0	0.047	460.1	1.65E+00	4.40E-04
9/23/98	Plastex	165	5	26.1	0	0.106	461.6	5.26E+00	1.41E-03
9/23/98	Plastex	165	10	26.1	0	0.084	461.6	3.91E+00	1.05E-03
9/28/98	Plastex	173	5	35.6	0	0.066	447.9	2.74E+00	7.32E-04
9/28/98	Plastex	173	10	35.6	0	0.064	447.9	2.62E+00	7.00E-04
10/9/98	Plastex	187	5	27.9	0	0.119	441.1	5.81E+00	1.55E-03
10/9/98	Plastex	187	10	27.9	0	0.065	441.1	2.64E+00	7.06E-04
10/21/98	Plastex	196	5	32.1	0	0.193	461.0	1.06E+01	2.83E-03
10/21/98	Plastex	196	10	32.1	0	0.144	461.0	7.57E+00	2.03E-03
10/26/98	Plastex	1001	5	36.3	0	0.069	444.8	2.90E+00	7.75E-04
10/26/98	Plastex	1001	10	36.3	0	0.022	444.8	1.18E-01	3.16E-05
11/4/98	Plastex	1009	5	34.9	0	0.083	443.4	3.71E+00	9.93E-04
11/4/98	Plastex	1009	10	34.9	0	0.086	443.4	3.89E+00	1.04E-03

Table E.22

Soil Sement(c) - Phase I fluxes - not spike corrected

Date	Suppressant	Run #	Duration (min)	U10 (mph)	Torn Up (y=1,n=0)	Avg. Conc. (mg/m^3)	Qactual (ft^3/min)	Flux (mg/m^2*min)	Flux (ton/(acre*hr)
8/12/98	Soil Cement	104	10	18.6	0	0.089	477.7	4.35E+00	1.16E-03
8/20/98	Soil Cement	113	10	29.2	0	0.028	476.1	5.03E-01	1.35E-04
8/25/98	Soil Cement	127	10	30.3	0	0.135	476.7	7.24E+00	1.94E-03
8/28/98	Soil Cement	140	10	26.4	0	0.081	481.5	3.88E+00	1.04E-03
9/16/98	Soil Cement	153	5	27.5	0	0.067	454.0	2.83E+00	7.57E-04
9/16/98	Soil Cement	153	10	27.5	0	0.078	454.0	3.49E+00	9.34E-04
9/25/98	Soil Cement	168	5	30.9	0	0.044	449.4	1.43E+00	3.83E-04
9/25/98	Soil Cement	168	10	30.9	0	0.072	449.4	3.10E+00	8.30E-04
10/5/98	Soil Cement	180	5	19.7	0	0.033	444.1	7.67E-01	2.05E-04
10/5/98	Soil Cement	180	10	19.7	0	0.062	444.1	2.48E+00	6.63E-04
10/21/98	Soil Cement	193	5	15.2	0	0.509	450.1	2.92E+01	7.81E-03
10/21/98	Soil Cement	193	10	15.2	0	0.033	450.1	7.77E-01	2.08E-04
11/4/98	Soil Cement	1012	5	30.7	0	0.034	453.2	8.42E-01	2.25E-04
11/4/98	Soil Cement	1012	10	30.7	0	0.015	453.2	-3.01E-01	-8.04E-05
11/6/98	Soil Cement	1022	5	23.8	0	0.022	446.5	1.19E-01	3.17E-05
11/6/98	Soil Cement	1022	10	23.8	0	0.022	446.5	1.19E-01	3.17E-05
11/6/98	Soil Cement	1023	5	22.5	0	0.037	450.8	1.02E+00	2.72E-04
11/6/98	Soil Cement	1023	10	22.5	0	0.032	450.8	7.18E-01	1.92E-04

Table E.23

Phase II - computation of 15-19.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted Flux
Double Water	1109	5	0	19.6	2.76E-04		
Double Water	1109	10	0	19.6	4.88E-04	4.17E-04	-3.380
Acrylic Polymer	1081	5	0	17.0	-3.20E-05		
Acrylic Polymer	1081	10	0	17.0	2.88E-04	1.81E-04	-3.742
Acrylic Polymer	1084	5	0	16.4	6.15E-04		
Acrylic Polymer	1084	10	0	16.4	6.96E-04	6.69E-04	-3.174
Acrylic Polymer	1085	5	0	19.9	1.76E-04		
Acrylic Polymer	1085	10	0	19.9	3.04E-04	2.61E-04	-3.583
Lig Sulfonate	1050	5	0	18.7	1.50E-03		
Lig Sulfonate	1051	10	0	18.7	6.75E-04	9.51E-04	-3.022
Lig Sulfonate	1052	5	0	15.1	1.22E-03		
Lig Sulfonate	1053	10	0	15.1	1.12E-03	1.15E-03	-2.939
Penn Suppress	1091	5	0	16.3	1.29E-04		
Penn Suppress	1091	10	0	16.3	4.03E-04	3.12E-04	-3.506
Penn Suppress	1092	5	0	16.1	2.43E-04		
Penn Suppress	1092	10	0	16.1	1.46E-04	1.79E-04	-3.748
Penn Suppress	1094	5	0	16.8	1.30E-04		
Penn Suppress	1094	10	0	16.8	2.44E-04	2.06E-04	-3.686
Penn Suppress	1095	5	0	17.9	1.78E-04		
Penn Suppress	1095	10	0	17.9	9.73E-04	7.08E-04	-3.150
Plastex	1059	5	0	19.8	6.21E-04		
Plastex	1060	10	0	19.8	6.05E-04	6.11E-04	-3.214
						average of log =	-3.377
						std dev of log =	0.294
						geo mean - 1 std dev	2.14E-04
						geo mean	4.20E-04
						geo mean + 1 std dev	8.26E-04

Table E.24

Phase II - computation of 20-24.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted flux
Double Water	1106	5	0	22.4	3.95E-04		
Double Water	1106	10	0	22.4	1.65E-04	2.41E-04	-3.617
Double Water	1107	5	0	22.0	1.96E-04		
Double Water	1107	10	0	22.0	1.47E-04	1.64E-04	-3.786
Acrylic Polymer	1082	5	0	21.9	6.41E-05		
Acrylic Polymer	1082	10	0	21.9	4.33E-04	3.10E-04	-3.509
Acrylic Polymer	1086	5	0	22.8	2.72E-04		
Acrylic Polymer	1086	10	0	22.8	1.92E-04	2.19E-04	-3.660
Lig Sulfonate	1066	5	0	21.2	5.10E-04		
Lig Sulfonate	1066	10	0	21.2	1.74E-03	1.33E-03	-2.877
Lig Sulfonate	1067	5	0	23.1	6.25E-04		
Lig Sulfonate	1068	10	0	23.1	2.88E-04	4.01E-04	-3.397
Lig Sulfonate	1137	5	0	21.3	-1.66E-04		
Lig Sulfonate	1137	10	0	21.3	4.97E-05	-2.21E-05	
Lig Sulfonate	1139	5	0	21.0	6.41E-04		
Lig Sulfonate	1139	10	0	21.0	7.85E-04	7.37E-04	-3.132
MgCl	1096	5	0	24.9	-6.50E-05		
MgCl	1096	10	0	24.9	-1.30E-04	-1.08E-04	
MgCl	1097	5	0	23.3	7.37E-04		
MgCl	1097	10	0	23.3	9.83E-05	3.11E-04	-3.507
MgCl	1098	5	0	21.4	1.64E-05		
MgCl	1098	10	0	21.4	3.27E-05	2.73E-05	-4.564
MgCl	1099	5	0	22.6	1.80E-04		
MgCl	1099	10	0	22.6	4.92E-04	3.88E-04	-3.411
MgCl	1146	5	0	20.3	9.37E-04		
MgCl	1146	10	0	20.3	2.50E-03	1.98E-03	-2.703
Penn Suppress	1093	5	0	24.1	1.63E-04		
Penn Suppress	1093	10	0	24.1	2.12E-04	1.96E-04	-3.709
Plastex	1056	5	0	23.5	6.60E-04		
Plastex	1056	10	0	23.5	5.50E-04	5.87E-04	-3.232
Plastex	1057	5	0	24.7	5.51E-04		
Plastex	1058	10	0	24.7	5.82E-04	5.72E-04	-3.243
Plastex	1061	5	0	24.0	7.78E-04		
Plastex	1062	10	0	24.0	8.10E-04	7.99E-04	-3.097
Soil Sement	1104	5	0	24.7	6.53E-05		
Soil Sement	1104	10	0	24.7	1.14E-04	9.80E-05	-4.009

Table E.24

Phase II - computation of 20-24.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted flux
						average of log =	-3.466
						std dev of log =	0.448
						geo mean - 1 std dev	1.22E-04
						geo mean	3.42E-04
						geo mean + 1 std dev	9.60E-04

Table E.25 Phase II - computation of 25-29.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted Flux
Double Water	1105	5	0	25.2	3.73E-04		
Double Water	1105	10	0	25.2	1.30E-04	2.11E-04	-3.676
Double Water	1108	5	0	25.4	3.10E-04		
Double Water	1108	10	0	25.4	1.14E-04	1.79E-04	-3.747
Lig Sulfonate	1049	5	0	25.5	5.30E-04		
Lig Sulfonate	1049	10	0	25.5	4.39E-04	4.70E-04	-3.328
Lig Sulfonate	1136	5	0	27.1	8.96E-04		
Lig Sulfonate	1136	10	0	27.1	-3.32E-05	2.77E-04	-3.558
Lig Sulfonate	1138	5	0	27.5	7.66E-04		
Lig Sulfonate	1138	10	0	27.5	8.46E-04	8.19E-04	-3.087
Lig Sulfonate	1140	5	0	29.5	5.20E-04		
Lig Sulfonate	1140	10	0	29.5	4.06E-04	4.44E-04	-3.352
Plastex	1063	5	0	25.7	3.86E-04		
Plastex	1063	10	0	25.7	3.05E-04	3.32E-04	-3.479
Soil Sement	1101	5	0	25.2	0.00E+00		
Soil Sement	1101	10	0	25.2	1.64E-05	1.09E-05	-4.962
Soil Sement	1102	5	0	29.1	1.64E-05		
Soil Sement	1102	10	0	29.1	-1.64E-05	-5.45E-06	
Soil Sement	1103	5	0	27.4	8.17E-05		
Soil Sement	1103	10	0	27.4	4.90E-05	5.99E-05	-4.223
						average of log =	-3.712
						std dev of log =	0.567
						geo mean - 1 std dev	5.26E-05
						geo mean	1.94E-04
						geo mean + 1 std dev	7.15E-04

Table E.26

Phase II - computation of 30-34.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	Torn Up (y=1,n=0)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	log of Weighted Flux
Soil Sement	1100	5	0	30.2	-2.12E-04		
Soil Sement	1100	10	0	30.2	-1.14E-04	-1.47E-04	#NUM!

Table E.27

Phase I - computation of 5-9.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted flux
MgCl	182	5	8.2	4.13E-04		
MgCl	182	10	8.2	1.48E-03	1.12E-03	-2.950
					average of logs =	-2.950
					std dev of logs =	#DIV/0!
					geo mean - 1 std dev	
					geo mean =	1.12E-03
					geo mean + 1 std dev	

Table E. 28

Phase I - computation of 10-14.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted Flux
Double Water	181	5	13.1	5.39E-04		
Double Water	181	10	13.1	1.73E-03	1.33E-03	-2.876
Acrylic Polymer	195	5	14.4	1.78E-04		
Acrylic Polymer	195	10	14.4	2.75E-04	2.42E-04	-3.616
Lignin Sulfonate	115	10	14.6	2.00E-03	2.00E-03	-2.699
Lignin Sulfonate	154	5	13.1	7.19E-04		
Lignin Sulfonate	154	10	13.1	3.92E-04	5.01E-04	-3.300
Lignin Sulfonate	169	5	11.1	3.27E-04		
Lignin Sulfonate	169	10	11.1	6.05E-04	5.12E-04	-3.290
Lignin Sulfonate*	1037	5	10.4	2.37E-03		
Lignin Sulfonate*	1037	10	10.4	2.23E-02	1.57E-02	-1.805
*Baseline Data:	suppressant removed & surface tom up				**Including baseline**	
					average of logs =	-2.931
					std dev of logs =	0.642
					geo mean - 1 std dev	2.67E-04
					geo mean =	1.17E-03
					geo mean + 1 std dev	5.14E-03
					Excluding baseline	
					average of logs =	-3.156
					std dev of logs =	0.367
					geo mean - 1 std dev	3.00E-04
					geo mean =	6.98E-04
					geo mean + 1 std dev	1.62E-03

Table E.29

Phase I - computation of 15-19.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr)	Flux Weighted Avg	Log of Weighted Flux
Double Water	1014	5	19.6	9.85E-05		
Double Water	1014	10	19.6	0.00E+00	3.28E-05	-4.484
Acrylic Polymer	1000	5	18.7	9.49E-05		
Acrylic Polymer	1000	10	18.7	1.90E-04	1.58E-04	-3.801
Acrylic Polymer	1010	5	19.8	1.14E-03		
Acrylic Polymer	1010	10	19.8	1.33E-03	1.26E-03	-2.899
Lignin Sulfonate	139	10	15.4	2.09E-03	2.09E-03	-2.680
Lignin Sulfonate	179	5	17.7	5.31E-04		
Lignin Sulfonate	179	10	17.7	4.89E-03	3.44E-03	-2.464
Lignin Sulfonate*	1036	5	18.9	5.17E-03		
Lignin Sulfonate*	1036	10	18.9	1.62E-01	1.10E-01	-0.959
Lignin Sulfonate*	1038	5	18.3	5.98E-03		
Lignin Sulfonate*	1038	10	18.3	3.84E-03	4.55E-03	-2.342
MgCl	112	10	19.6	1.19E-03	1.19E-03	-2.925
MgCl	190	5	17.7	6.56E-04		
MgCl	190	10	17.7	7.34E-04	7.08E-04	-3.150
MgCl	1016	5	19.3	7.72E-05		
MgCl	1016	10	19.3	1.08E-04	9.78E-05	-4.010
Penn Suppress	175	5	18.7	6.02E-04		
Penn Suppress	175	10	18.7	1.04E-03	8.95E-04	-3.048
Penn Suppress	194	5	19.1	2.43E-04		
Penn Suppress	194	10	19.1	2.02E-03	1.43E-03	-2.845
Penn Suppress	199	5	19.0	4.75E-05		
Penn Suppress	199	10	19.0	1.27E-04	1.00E-04	-3.999
Soil Sement	104	10	18.6	1.16E-03	1.16E-03	-2.934
Soil Sement	180	5	19.7	2.05E-04		
Soil Sement	180	10	19.7	6.63E-04	5.10E-04	-3.292
Soil Sement	193	5	15.2	7.81E-03		
Soil Sement	193	10	15.2	2.08E-04	2.74E-03	-2.562
*Baseline Data:	suppressant removed & surface torn up				**Including baseline**	
					average of logs =	-3.024
					std dev of logs =	0.824

Table E.29

Phase I - computation of 15-19.9 mph weighted flux - averaged over all suppressants

					geo mean - 1 std dev	1.42E-04
					geo mean =	9.45E-04
					geo mean + 1 std dev	6.30E-03
					Excluding baseline	
					average of logs =	-3.221
					std dev of logs =	0.615
					geo mean - 1 std dev	1.46E-04
					geo mean =	6.01E-04
					geo mean + 1 std dev	2.48E-03

Table E.30

Phase I - computation of 20-24.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr))	weighted avg	log of wt avg
Double Water	129	10	23.6	3.77E-03		
Double Water	170	5	21.0	2.28E-04	1.41E-03	-2.851
Double Water	170	10	21.0	3.59E-04	3.59E-04	-3.445
Acrylic Polymer	142	10	23.0	2.35E-04	2.35E-04	-3.629
Acrylic Polymer	159	5	22.3	-9.90E-05		
Acrylic Polymer	159	10	22.3	3.30E-05	-1.10E-05	
Acrylic Polymer	166	5	24.4	4.61E-04		
Acrylic Polymer	166	10	24.4	5.10E-04	4.94E-04	-3.307
Lignin Sulfonate	1013	5	24.1	0.00E+00		
Lignin Sulfonate	1013	10	24.1	4.83E-05	3.22E-05	-4.492
Lignin Sulfonate	1020	5	20.2	2.38E-04		
Lignin Sulfonate	1020	10	20.2	6.19E-04	4.92E-04	-3.308
Lignin Sulfonate*	1035	5	21.8	2.15E-03		
Lignin Sulfonate*	1035	10	21.8	2.05E-03	2.09E-03	-2.681
MgCl	171	5	22.4	2.12E-04		
MgCl	171	10	22.4	3.74E-04	3.20E-04	-3.495
MgCl	1015	5	21.7	9.69E-05		
MgCl	1015	10	21.7	9.69E-05	9.69E-05	-4.014
MgCl	1017	5	23.3	4.63E-05		
MgCl	1017	10	23.3	1.70E-04	1.29E-04	-3.891
Penn Suppress	105	10	21.8	6.50E-03	6.50E-03	-2.187
Penn Suppress	116	10	22.0	1.33E-03	1.33E-03	-2.877
Penn Suppress	132	10	24.3	2.24E-03	2.24E-03	-2.650
Penn Suppress	189	5	23.4	1.04E-03		
Penn Suppress	189	10	23.4	1.20E-03	1.14E-03	-2.941
Plastex	103	10	23.7	2.68E-02	2.68E-02	-1.572
Soil Cement	1022	5	23.8	3.17E-05		
Soil Cement	1022	10	23.8	3.17E-05	3.17E-05	-4.499
Soil Cement	1023	5	22.5	2.72E-04		
Soil Cement	1023	10	22.5	1.92E-04	2.19E-04	-3.660
*Baseline Data:	suppressant removed & surface torn up				**Including baseline**	
					average of logs =	-3.265
					std dev of logs =	0.772

Table E.30

Phase I - computation of 20-24.9 mph weighted flux - averaged over all suppressants

					geo mean - 1 std dev	9.20E-05
					geo mean =	5.44E-04
					geo mean + 1 std dev	3.22E-03
					Excluding baseline	
					average of logs =	-3.301
					std dev of logs =	0.782
					geo mean - 1 std dev	8.26E-05
					geo mean =	5.00E-04
					geo mean + 1 std dev	3.03E-03

Table E.31

Phase I - computation of 25-29.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr)	weighted average	log of wt avg
Double Water	108	10	25.6	5.31E-03	5.31E-03	-2.275
Double Water	114	10	25.1	4.11E-04	4.11E-04	-3.386
Double Water	191	5	25.9	1.32E-03		
Double Water	191	10	25.9	1.24E-03	1.26E-03	-2.898
Double Water	1018	5	26.5	-6.24E-05		
Double Water	1018	10	26.5	9.36E-05	4.16E-05	-4.381
Double Water	1019	5	28.8	4.48E-04		
Double Water	1019	10	28.8	3.36E-04	3.73E-04	-3.428
Acrylic Polymer	117	10	25.3	1.14E-03	1.14E-03	-2.943
Acrylic Polymer	188	5	28.4	8.04E-04		
Acrylic Polymer	188	10	28.4	5.74E-04	6.51E-04	-3.187
MgCl	130	10	26.0	2.15E-03	2.15E-03	-2.668
MgCl	156	5	29.3	1.66E-04		
MgCl	156	10	29.3	1.49E-04	1.55E-04	-3.811
Penn Suppress	160	5	29.6	5.03E-05		
Penn Suppress	160	10	29.6	-1.34E-04	-7.26E-05	
Penn Suppress	167	5	29.3	2.47E-04		
Penn Suppress	167	10	29.3	2.31E-04	2.36E-04	-3.627
Plastex	118	10	25.0	2.87E-03	2.87E-03	-2.542
Plastex	165	5	26.1	1.41E-03		
Plastex	165	10	26.1	1.05E-03	1.17E-03	-2.933
Plastex	187	5	27.9	1.55E-03		
Plastex	187	10	27.9	7.06E-04	9.88E-04	-3.005
Soil Sement	113	10	29.2	1.35E-04	1.35E-04	-3.871
Soil Sement	140	10	26.4	1.04E-03	1.04E-03	-2.984
Soil Sement	153	5	27.5	7.57E-04		
Soil Sement	153	10	27.5	9.34E-04	8.75E-04	-3.058
					average of logs =	-3.187
					std dev of logs =	0.541
					geo mean - 1 std dev	1.87E-04
					geo mean =	6.50E-04
					geo mean + 1 std dev	2.26E-03

Table E.32

Phase I - computation of 30-34.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr))	wt avg of flux	log wt flux
Double Water	136	10	34.8	7.75E-04	7.75E-04	-3.111
Double Water	155	5	33.8	3.99E-04		
Double Water	155	10	33.8	2.49E-04	2.99E-04	-3.524
Lignin Sulfonate	107	10	34.8	6.79E-03	6.79E-03	-2.168
Lignin Sulfonate	128	10	34.9	9.61E-04	9.61E-04	-3.017
Lignin Sulfonate	192	5	32.2	7.78E-04		
Lignin Sulfonate	192	10	32.2	9.37E-04	8.84E-04	-3.054
MgCl	102	10	32.4	3.19E-04	3.19E-04	-3.497
MgCl	137	10	30.1	1.20E-03	1.20E-03	-2.919
Penn Suppress	1011	5	33.3	1.57E-04		
Penn Suppress	1011	10	33.3	3.14E-05	7.32E-05	-4.135
Plastex	144	10	32.6	3.37E-05	3.37E-05	-4.472
Plastex	158	5	32.6	5.05E-04		
Plastex	158	10	32.6	4.40E-04	4.62E-04	-3.335
Plastex	196	5	32.1	2.83E-03		
Plastex	196	10	32.1	2.03E-03	2.29E-03	-2.640
Soil Sement	127	10	30.3	1.94E-03	1.94E-03	-2.713
Soil Sement	168	5	30.9	3.83E-04		
Soil Sement	168	10	30.9	8.30E-04	6.81E-04	-3.167
Soil Sement	1012	5	30.7	2.25E-04		
Soil Sement	1012	10	30.7	-8.04E-05	2.14E-05	-4.669
					average of logs =	-3.316
					std dev of logs =	0.703
					geo mean - 1 std dev	9.57E-05
					geo mean =	4.83E-04
					geo mean + 1 std dev	2.44E-03

Table E.33

Phase I - computation of 35-39.9 mph weighted flux - averaged over all suppressants

Suppressant	Run #	Duration (min)	U10 (mph)	Flux (ton/(acre*hr)	wt avg of flux	log flux
Acrylic Polymer	134	10	36.0	6.97E-04	6.97E-04	-3.157
Acrylic Polymer	174	5	35.3	6.89E-04		
Acrylic Polymer	174	10	35.3	6.41E-04	6.57E-04	-3.182
Penn Suppress	141	10	38.9	3.24E-05	3.24E-05	-4.489
Plastex	133	10	35.1	4.54E-04	4.54E-04	-3.343
Plastex	173	5	35.6	7.32E-04		
Plastex	173	10	35.6	7.00E-04	7.10E-04	-3.148
Plastex	1001	5	36.3	7.75E-04		
Plastex	1001	10	36.3	3.16E-05	2.79E-04	-3.554
					average of logs =	-3.479
					std dev of logs =	0.519
					geo mean - 1 std dev	1.01E-04
					geo mean =	3.32E-04
					geo mean + 1 std dev	1.10E-03

Table E.34 - Summary of treated surface fluxes - not torn up and not corrected for spike

Flux Averages : Phase I - excludes baseline runs					
Wind Speed	Geometric Mean	Geometric Mean	Geometric Mean	Number	App E
(mph)	- 1 Std. Dev		+ 1 Std. Dev	of	Table #
	(ton/acre/hr)	(ton/acre/hr)	(ton/acre/hr)	Runs	
5 - 9.9		1.12E-03		2	**27**
10 - 14.9	3.00E-04	6.98E-04	1.62E-03	9	**28**
15 - 19.9	1.46E-04	6.01E-04	2.48E-03	25	**29**
20 - 24.9	8.26E-05	5.00E-04	3.03E-03	28	**30**
25 - 29.9	1.87E-04	6.50E-04	2.26E-03	27	**31**
30 - 34.9	9.57E-05	4.83E-04	2.44E-03	21	**32**
35 - 39.9	1.01E-04	3.32E-04	1.10E-03	9	**33**
total runs				121	

Flux Averages : Phase II					
Wind Speed	Geometric Mean	Geometric Mean	Geometric Mean	Number	App E
(mph)	- 1 Std. Dev		+ 1 Std. Dev	of	Table #
	(ton/acre/hr)	(ton/acre/hr)	(ton/acre/hr)	Runs	
5 - 9.9	N/A	N/A	N/A	0	
10 - 14.9	N/A	N/A	N/A	0	
15 - 19.9	2.14E-04	4.20E-04	8.26E-04	22	**23**
20 - 24.9	1.22E-04	3.42E-04	9.60E-04	36	**24**
25 - 29.9	5.26E-05	1.94E-04	7.15E-04	20	**25**
30 - 34.9	N/A	N/A	N/A	0	**26**
35 - 39.9	N/A	N/A	N/A	0	
total runs				78	

Table E.35 STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants
NOT CORRECTED FOR EFFECTS OF SPIKE - NOT TORN UP

Phase II Results - Not Torn Up Tests - Not spike-corrected							
Wind Speed (mph)	**Geom mean flux -1 Std. Dev. (ton/acre/hr)**	**Geom mean flux (ton/acre/hr)**	**Geom mean flux +1 Std. Dev. (ton/acre/hr)**	**Geom mean spike -1 Std. Dev. (ton/acre)**	**Geom mean spike (ton/acre)**	**Geom mean spike +1 Std. Dev. (ton/acre)**	**Number of runs**
10-14.9							
15-19.9	2.14E-04	4.20E-04	8.26E-04	N/A	N/A	N/A	22
20-24.9	1.22E-04	3.42E-04	9.60E-04	N/A	N/A	N/A	36
25-29.9	5.26E-05	1.94E-04	7.15E-04	N/A	N/A	N/A	20
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							78

Table E.36 STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants
CORRECTED FOR EFFECTS OF SPIKE - NOT TORN UP

Phase II Results - Not Torn Up Tests - Spike corrected							
Wind Speed	Geom mean flux	Geom mean flux	Geom mean flux	Geom mean spike	Geom mean spike	Geom mean spike	Number
(mph)	-1 Std. Dev.		+1 Std. Dev.	-1 Std. Dev.		+1 Std. Dev.	of runs
	(ton/acre/hr)	(ton/acre/hr)	(ton/acre/hr)	(ton/acre)	(ton/acre)	(ton/acre)	spike corrected
10-14.9							
15-19.9	1.00E-04	2.65E-04	7.04E-04	7.26E-07	5.03E-06	3.48E-05	18
20-24.9	5.24E-05	1.38E-04	3.65E-04	1.74E-06	4.59E-06	1.21E-05	32
25-29.9	1.92E-05	1.09E-04	6.19E-04	N/A	N/A	N/A	18
30-34.9	N/A	N/A	N/A	N/A	N/A	N/A	2
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							70

Table E.37 STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants
NOT CORRECTED FOR EFFECTS OF SPIKE - TORN UP BY TRUCK TIRE

Phase II Results - Torn Up Tests - Not Spike corrected							
Wind Speed (mph)	Geom mean flux -1 Std. Dev. (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev. (ton/acre/hr)	Geom mean spike -1 Std. Dev. (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev. (ton/acre)	Number of runs spike corrected
10-14.9	N/A	2.18E-03	N/A	N/A	N/A	N/A	2
15-19.9	1.69E-03	9.39E-03	5.22E-02	N/A	N/A	N/A	22
20-24.9	4.10E-04	2.17E-03	1.15E-02	N/A	N/A	N/A	58
25-29.9	2.58E-04	8.14E-04	2.57E-03	N/A	N/A	N/A	46
30-34.9	N/A	3.61E-03	N/A	N/A	N/A	N/A	2
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							130

Table E.38 STABILIZED LAND EMISSION FACTORS - averaged over 7 tested suppressants
CORRECTED FOR EFFECTS OF SPIKE - TORN UP BY TRUCK TIRE

Phase II Results - Torn Up Tests - Spike corrected							
Wind Speed (mph)	Geom mean flux -1 Std. Dev. (ton/acre/hr)	Geom mean flux (ton/acre/hr)	Geom mean flux +1 Std. Dev. (ton/acre/hr)	Geom mean spike -1 Std. Dev. (ton/acre)	Geom mean spike (ton/acre)	Geom mean spike +1 Std. Dev. (ton/acre)	Number of runs spike corrected
10-14.9	N/A	1.87E-03	N/A	N/A	4.05E-03	N/A	2
15-19.9	7.20E-04	3.80E-03	2.01E-02	2.10E-05	2.67E-04	3.40E-03	22
20-24.9	1.04E-04	8.89E-04	7.60E-03	9.09E-06	5.64E-05	3.50E-04	58
25-29.9	1.01E-04	4.70E-04	2.19E-03	2.56E-06	1.63E-05	1.04E-04	46
30-34.9	N/A	3.57E-03	N/A	N/A	9.68E-06	N/A	2
35-35.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40-44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45-49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50-54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55-59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60-64.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65-69.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
total runs							130

Figure E1 - Phase I stabilized uncorrected fluxes - not torn up

Geometric mean +/- 1 standard deviation - excludes baseline (untreated) surfaces

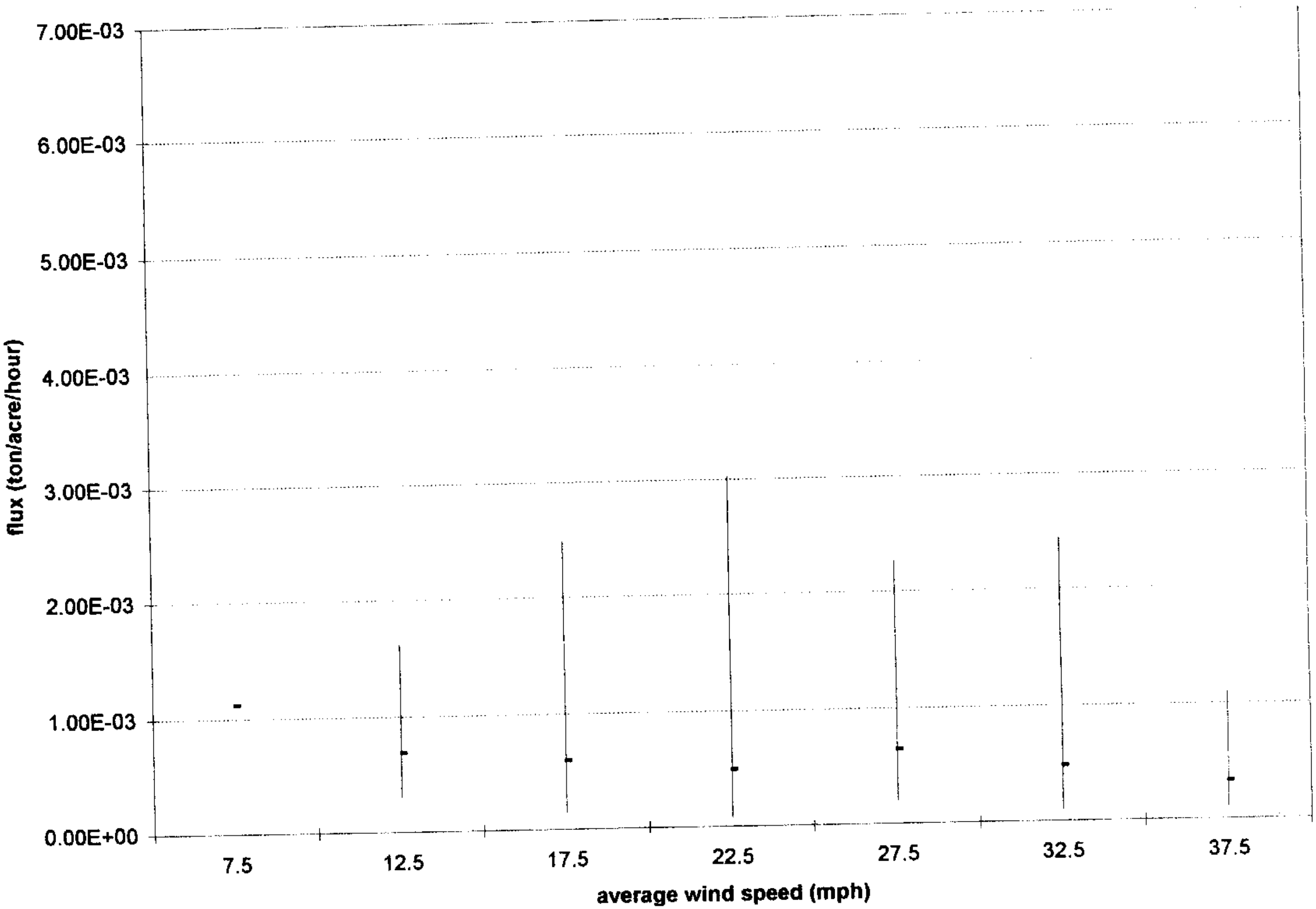


Figure E2 - Phase I stabilized uncorrected fluxes - not torn up - same scale as Phase II (Fig E3)

Geometric mean +/- 1 standard deviation - excludes baseline (untreated) surfaces

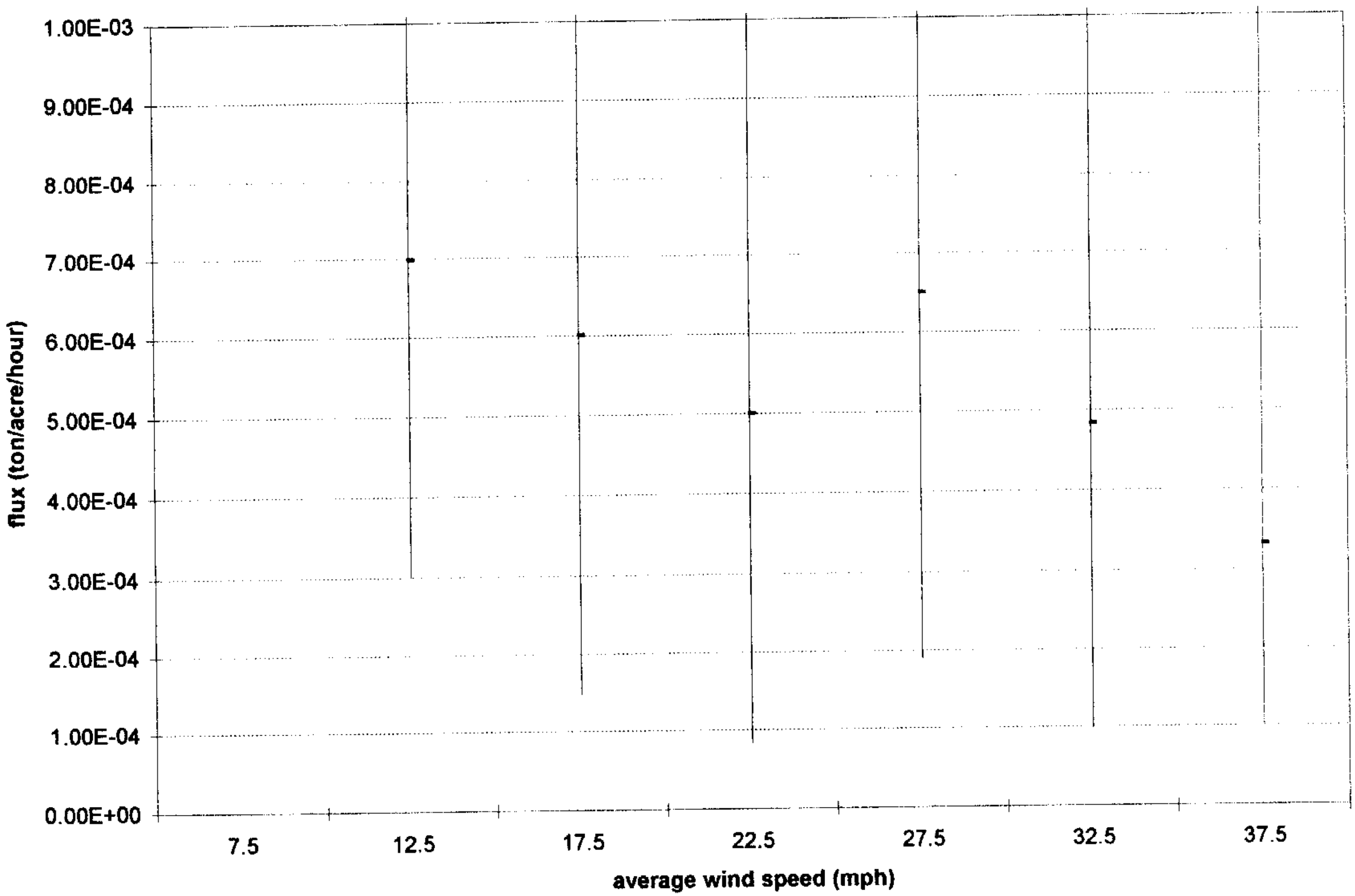


Figure E3 - Phase II stabilized uncorrected fluxes - not torn up

Geometric mean +/- 1 standard deviation

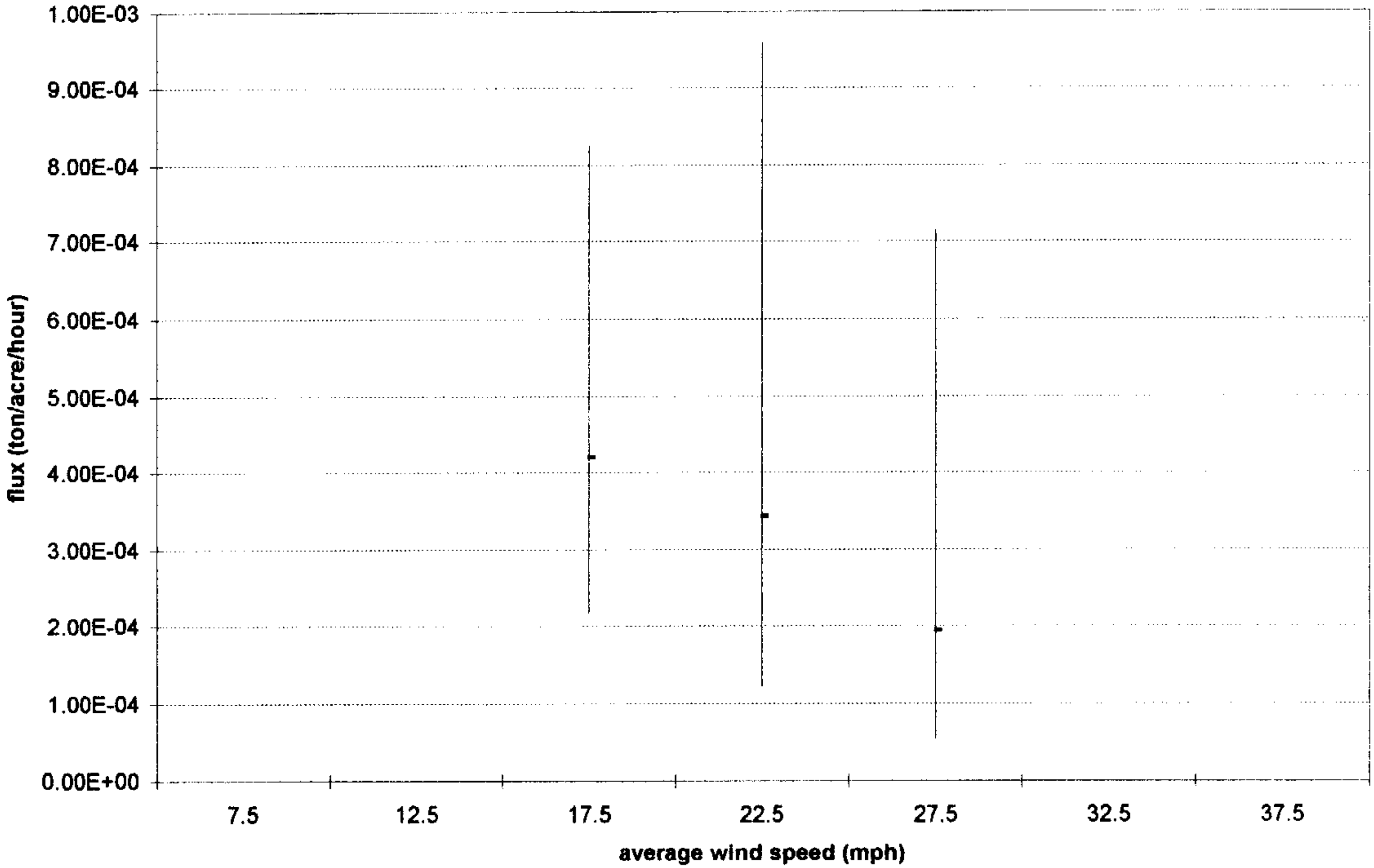


Figure E4 - Phase II stabilized spike-corrected fluxes - not torn up

Geometric mean +/- 1 standard deviation

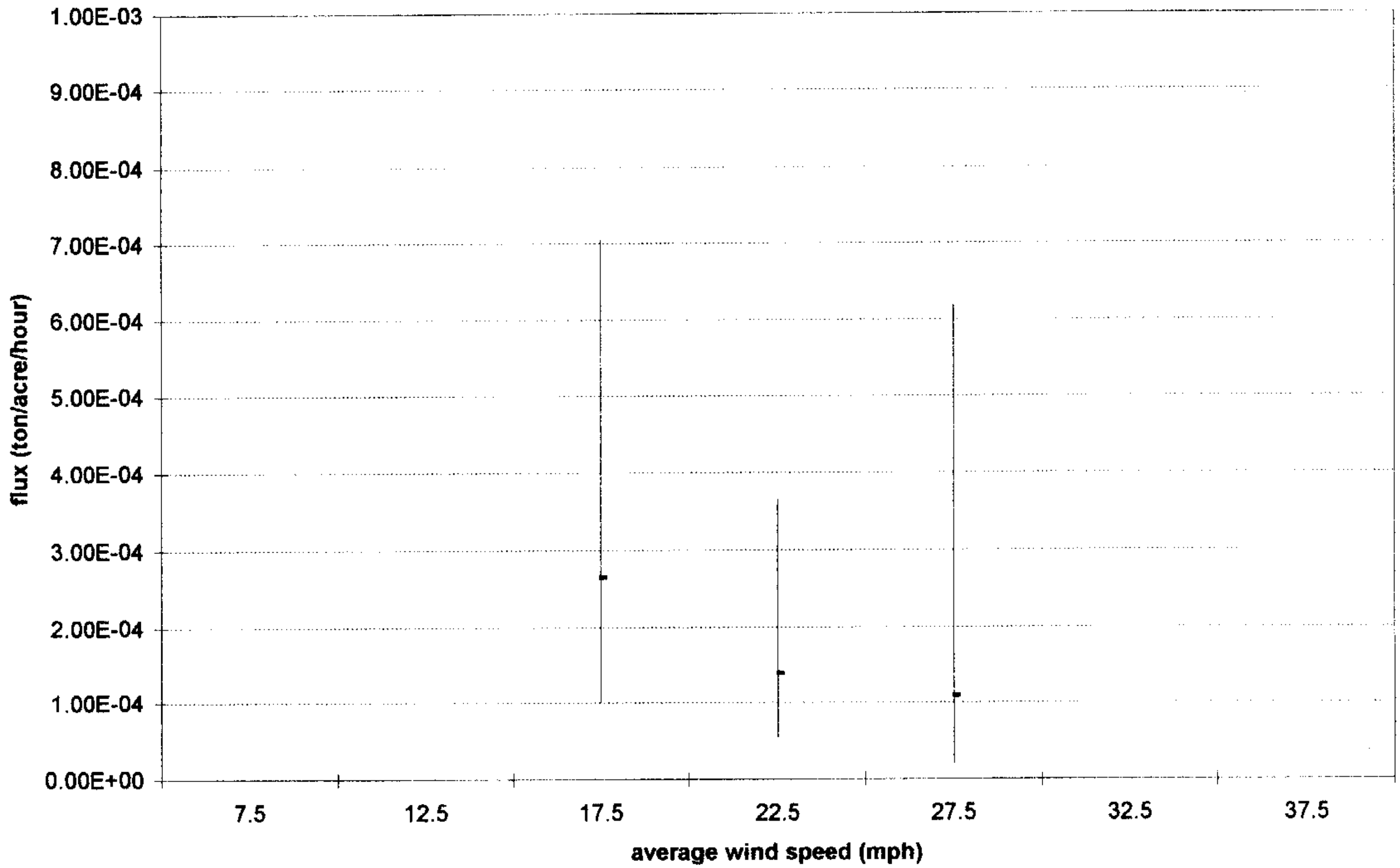


Figure E5 - Phase II surface fluxes - torn up by truck tire, not spike-corrected

Geometric mean +/- 1 standard deviation

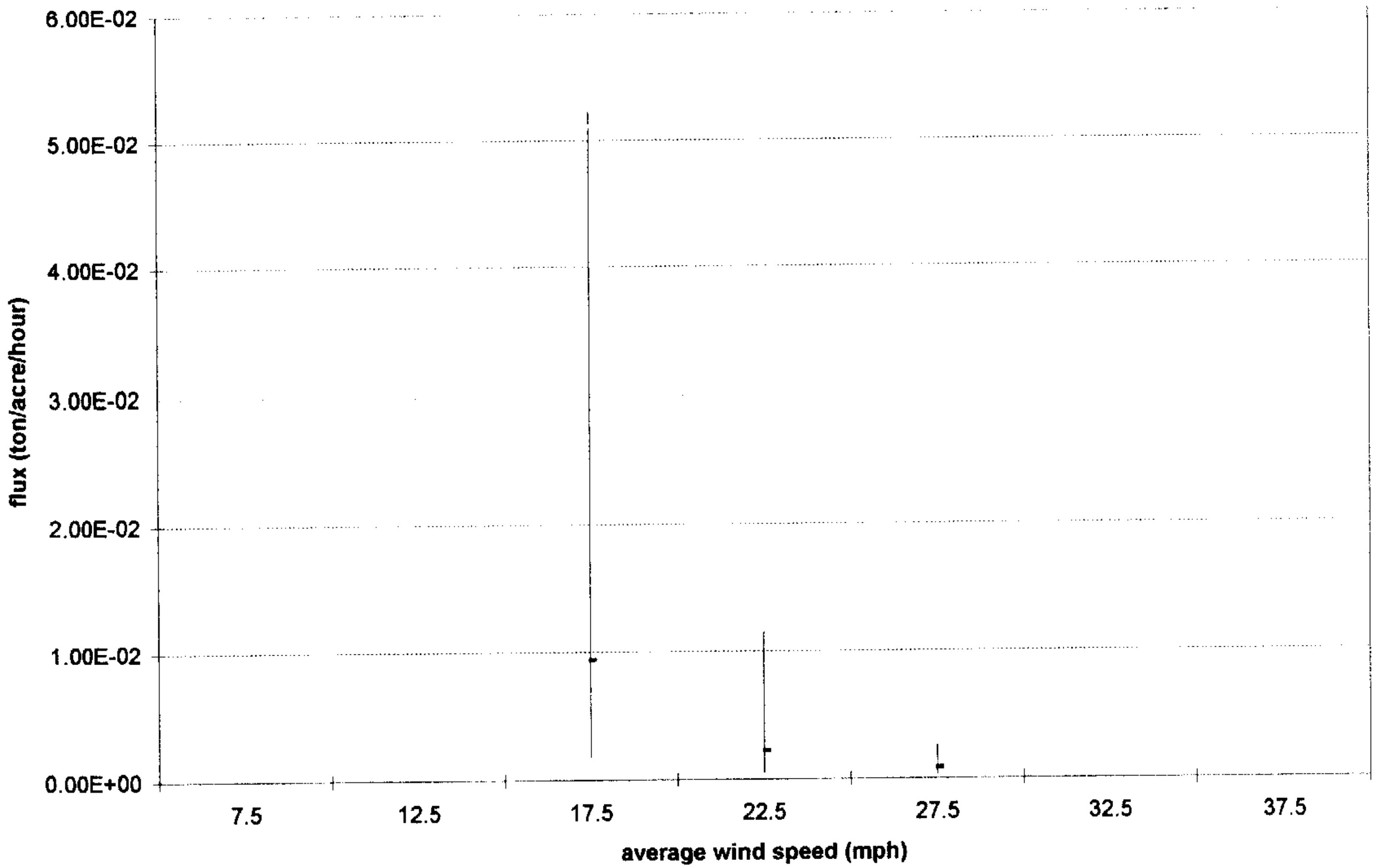


Figure E6 - Phase II surface fluxes - torn up by truck tire, not spike-corrected - (same scale as Fig E3)

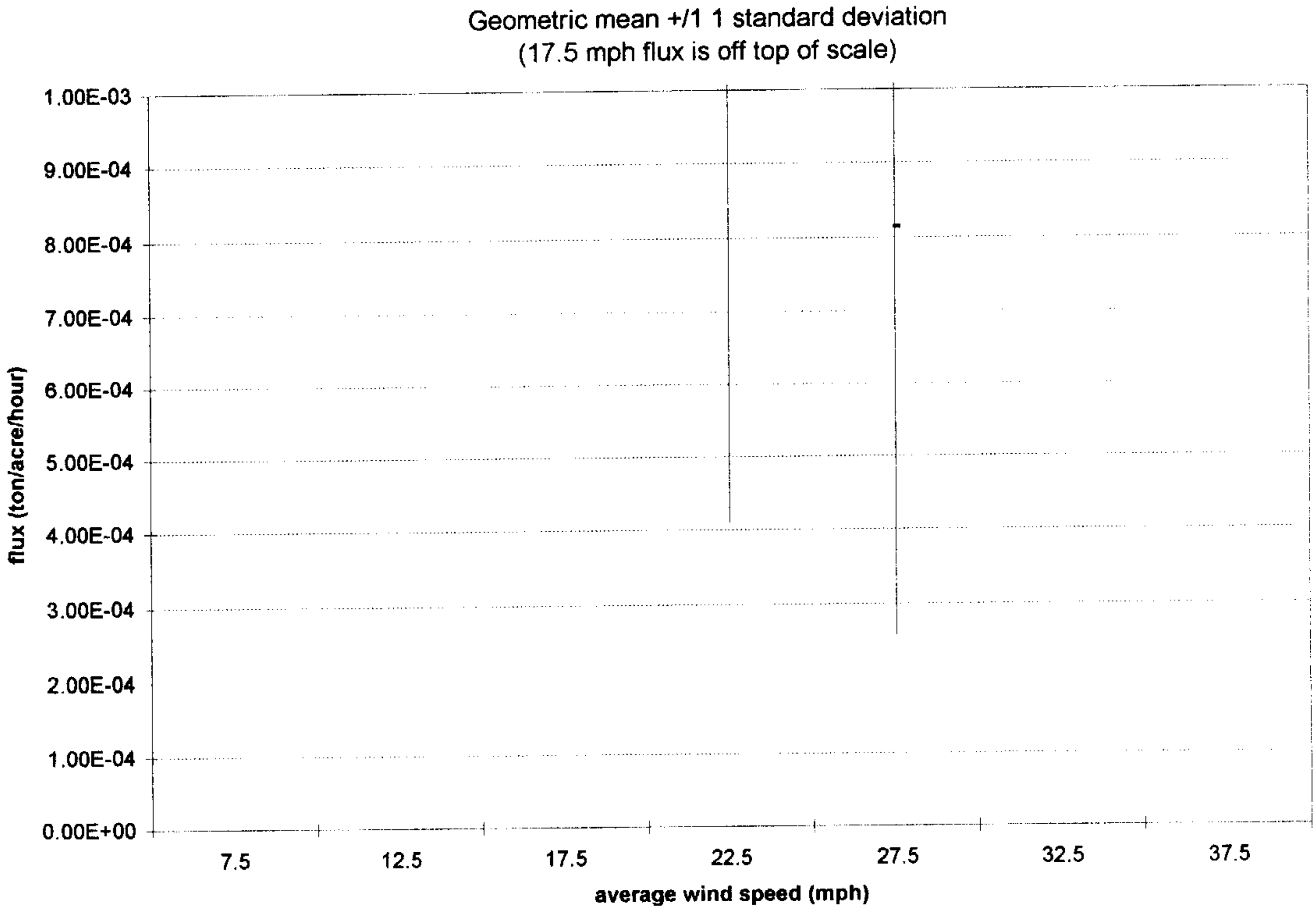


Figure E7 - Phase II surface fluxes - torn up by truck tire, spike corrected (same scale as Fig E5)

Geometric mean +/- 1 standard deviation

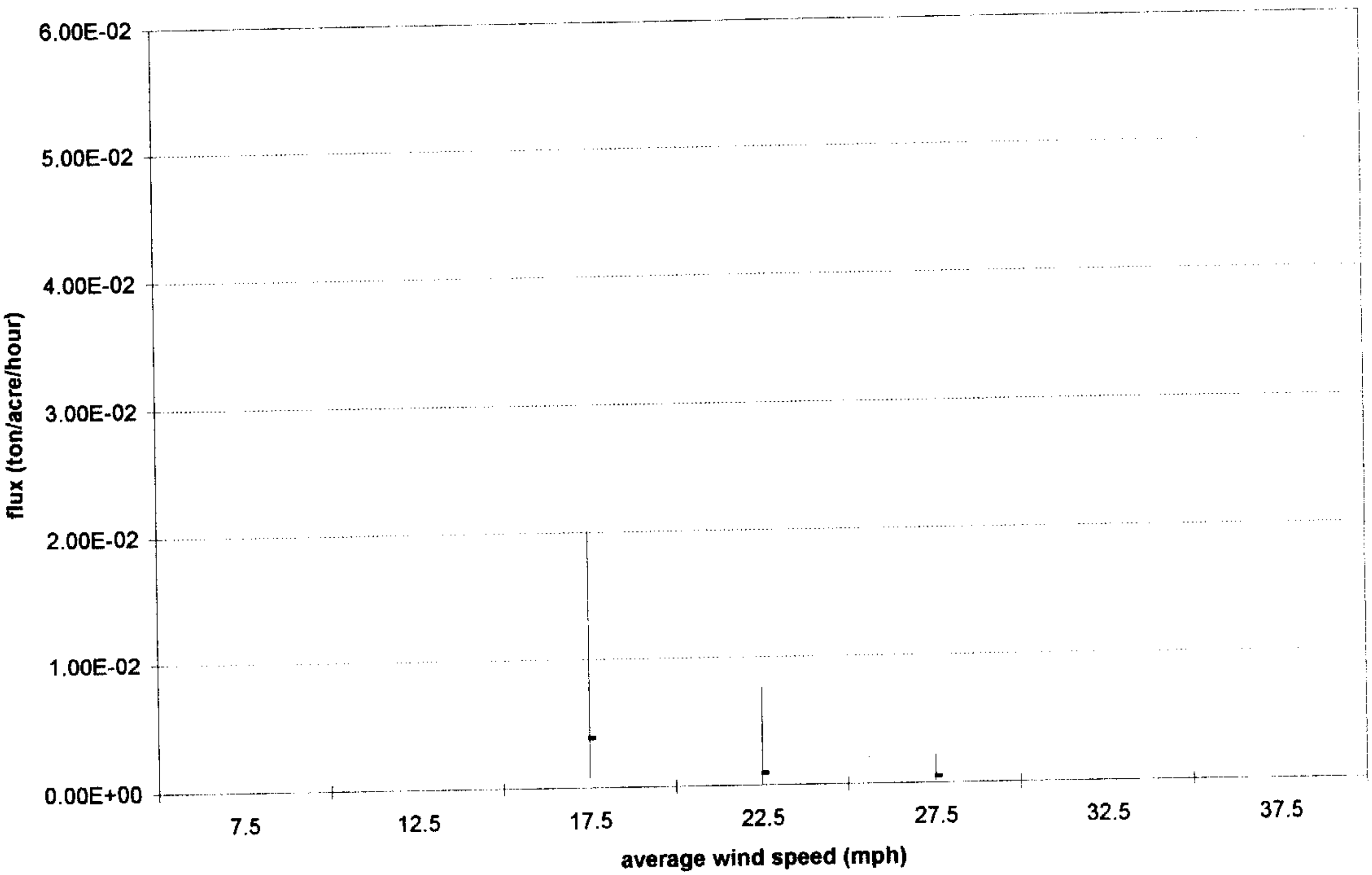


Figure E8 - Phase II surface fluxes - torn up by truck tire, spike corrected (rescaled to same as Fig E6)

Geometric mean +/- 1 standard deviation

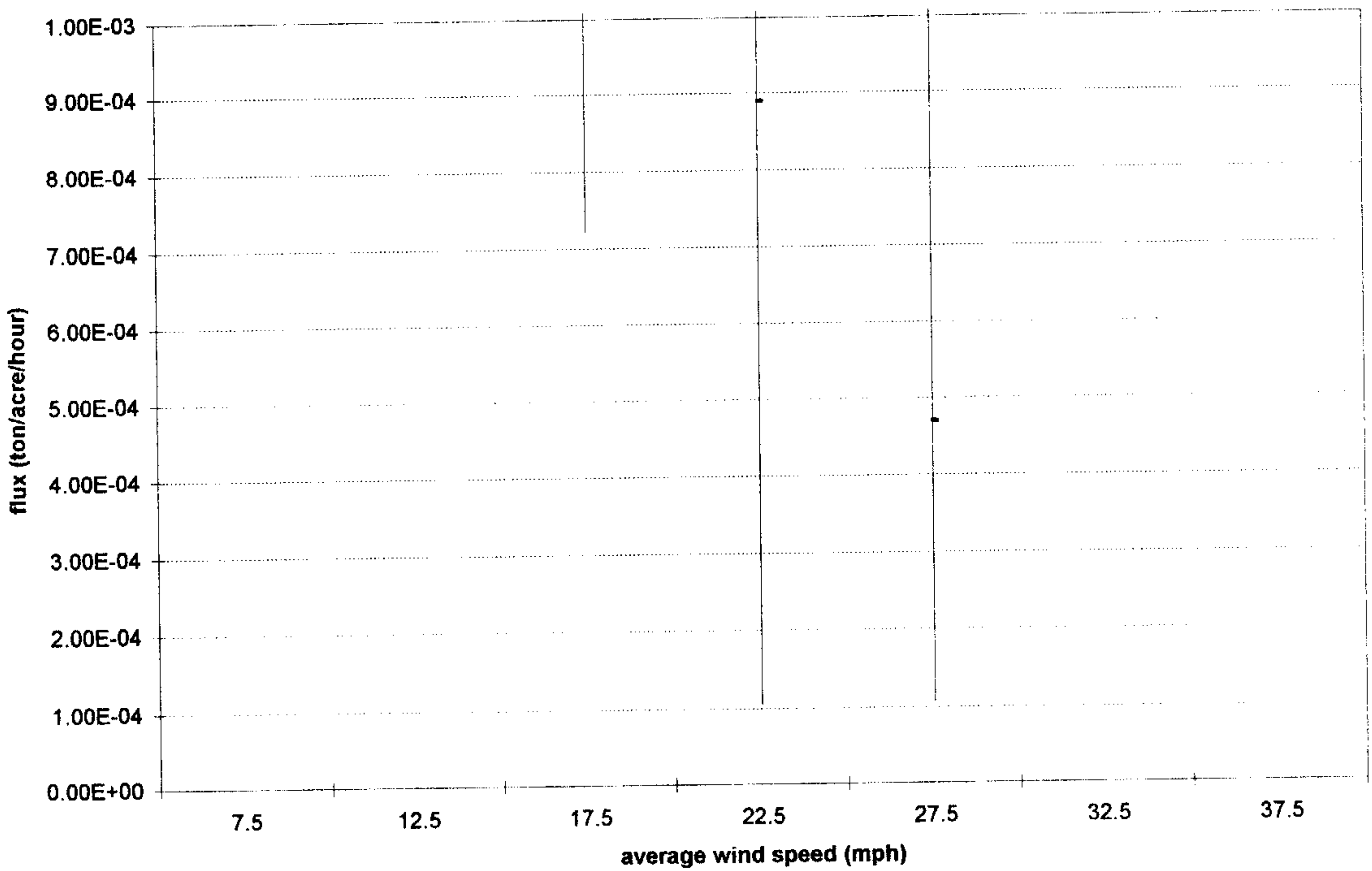


Figure E9 - Phase II not torn up spikes - 1/1000 scale of Figures C3 and C4

Geometric mean +/- 1 standard deviation

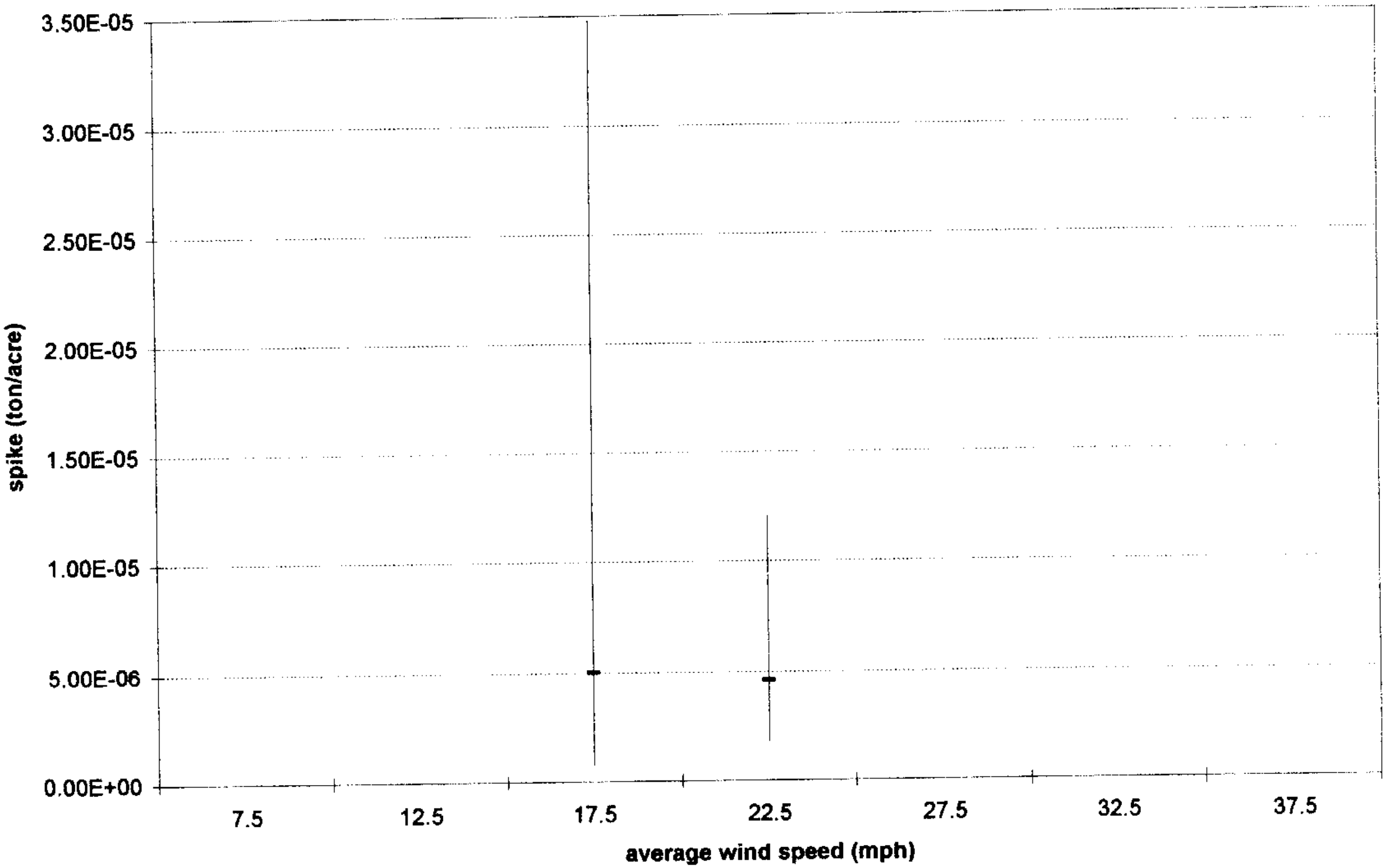


Figure E10 - Phase II torn-up spikes - 1/10 scale of Figures C3 and C4

Geometric mean +/- 1 standard deviation

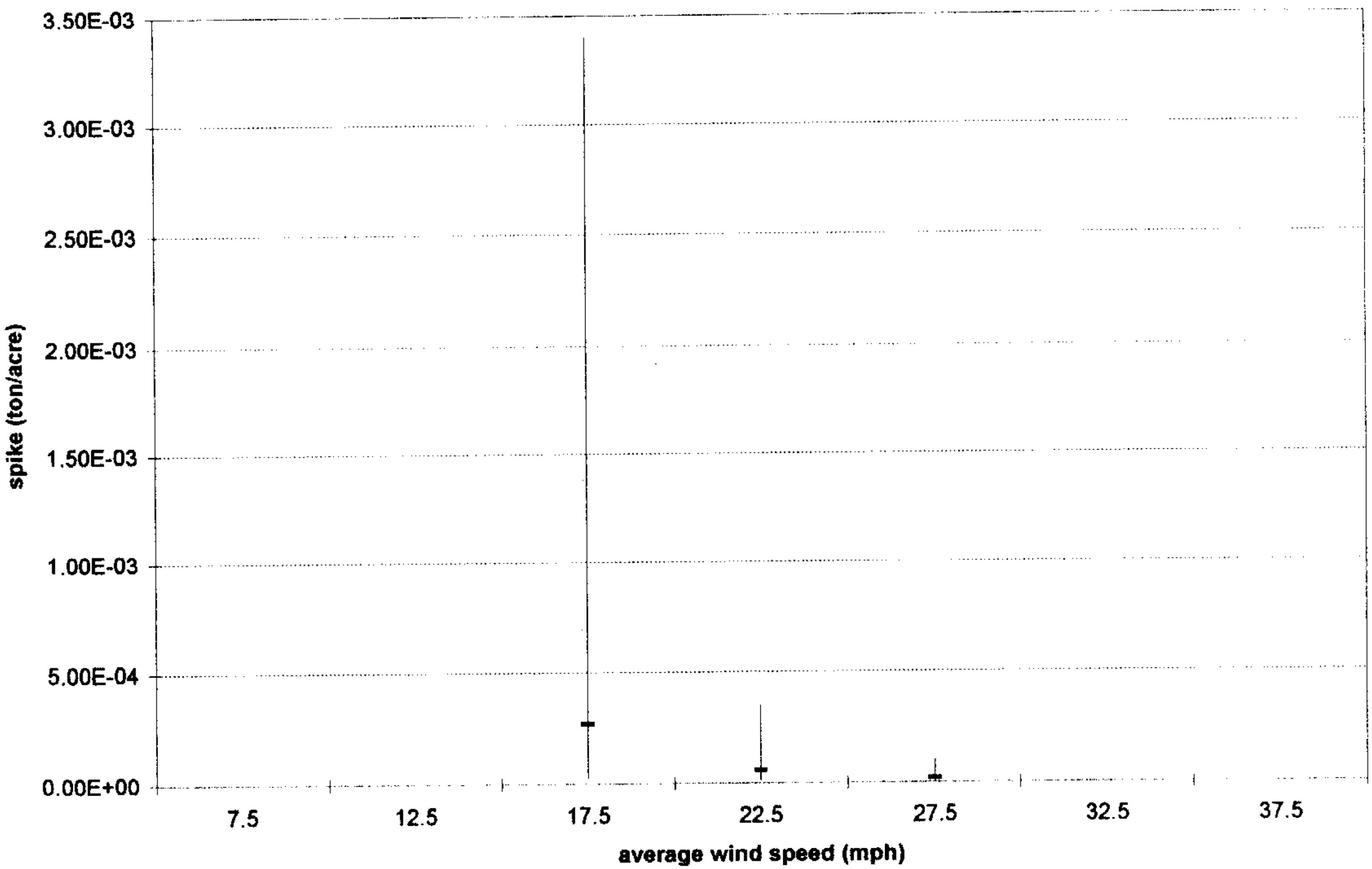


Figure E11 - Phase II - Not Torn Up - Comparison of not spike-corrected to spike-corrected fluxes

Geometric mean +/- 1 standard deviation

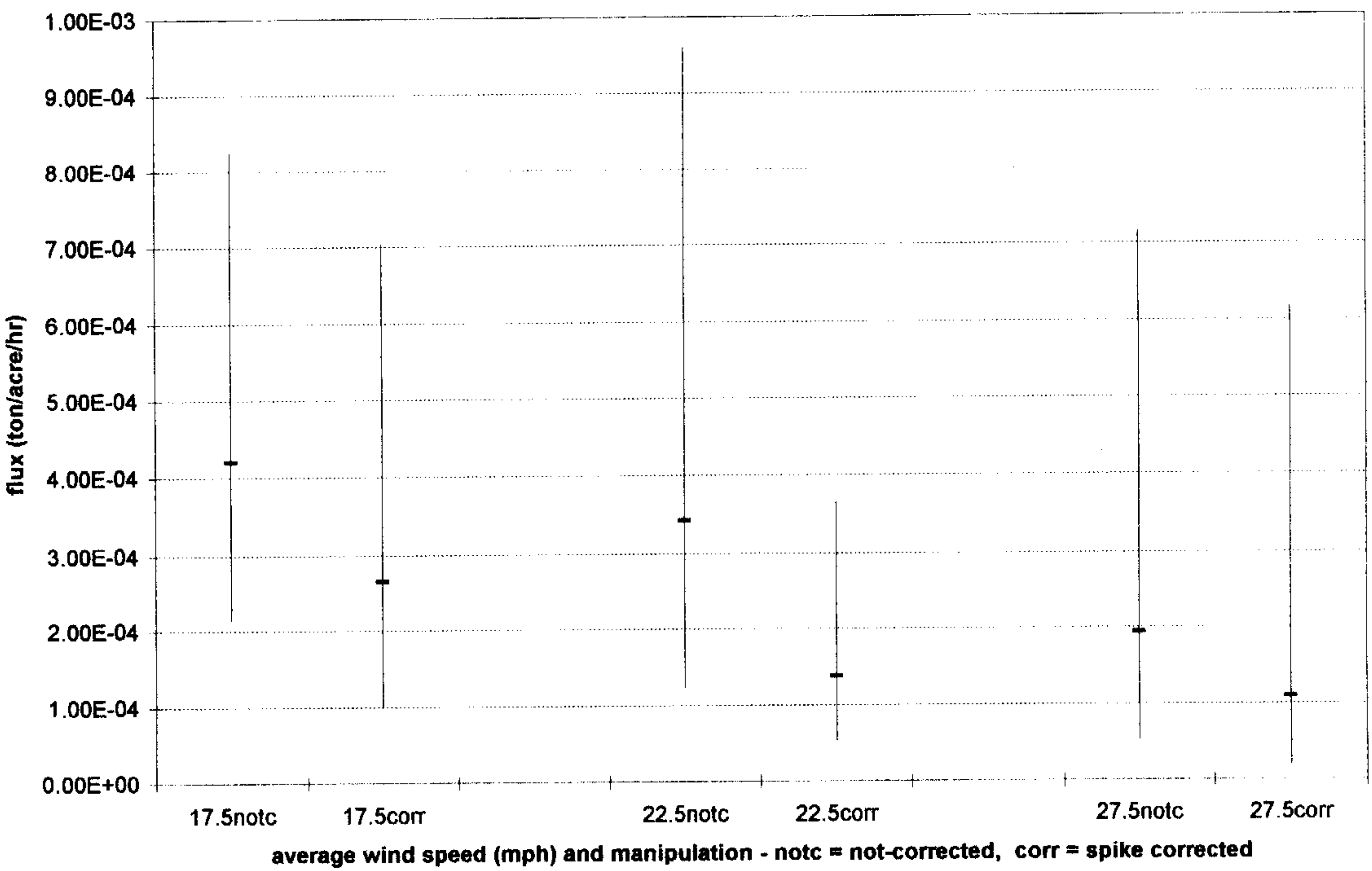
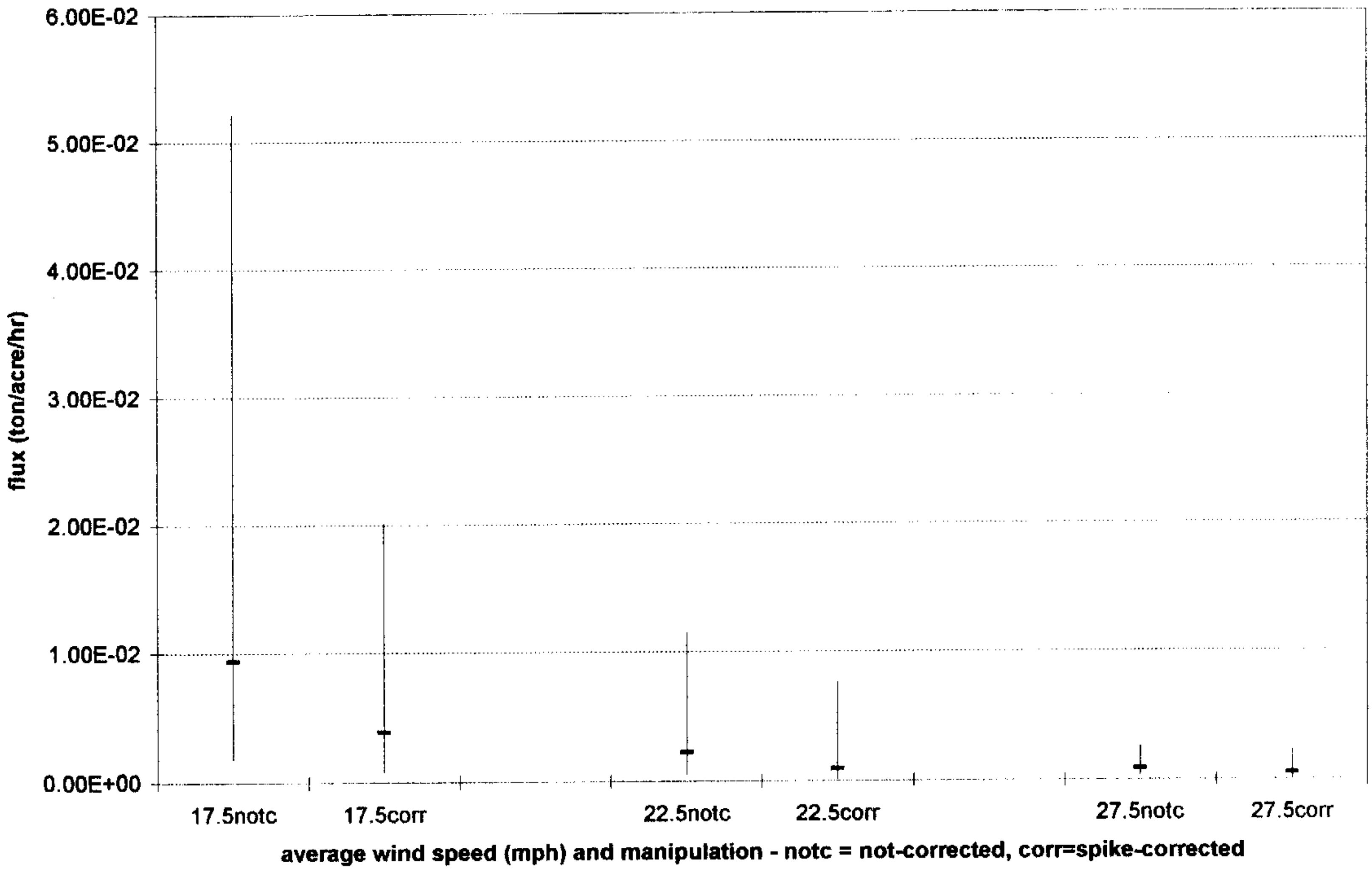


Figure E12 - Phase II - Torn Up - Comparison of not spike-corrected to spike-corrected fluxes

Geometric mean +/- 1 standard deviation



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