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Preliminary Analysis of 5-Minute Maximum Ambient SO₂ Concentrations

12/21/00

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PURPOSE

The intent of this preliminary analysis is to expand upon earlier assessments¹. EPA produced assessments of SO₂ peak concentrations as part of our 1996 review of the SO₂ National Ambient Air Quality Standards. The preliminary analyses presented here are limited to assessment and analyses based on air quality and source information and does not include policy conclusions or information concerning the degree or significance of possible risk of population exposures.

METHODOLOGICAL APPROACH

This SO₂ assessment can be summarized as comprising two analytical phases. This report describes the status and preliminary findings of these two phases. The two phases of our assessment plan and their intended purposes are as follows:

Phase 1: We evaluated measurements at short-term monitors and their relationship to nearby industrial sources and populations. This phase is intended to ascertain the frequency of peak concentrations greater than or equal to 0.6 ppm, the number of sites at which such peaks are occurring (including their proportion to all sites measuring 5-minute concentrations), the variability of such frequencies across locations, and industries that may be contributing to measured peaks.

Phase 2: We constructed and applied a simple model to aid in estimating the potential for short-term peaks greater than or equal to 0.6 ppm at locations where only 1-hour measurements are available. This phase is intended to determine the relationship of short-term peak concentration distributions to 1-hour mean concentration distributions, evaluate the robustness of this relationship, and attempt to answer the same questions in Phase 1.

AMBIENT DATA ANALYSIS

We first examined all of the available ambient SO₂ 5-minute peak data contained in the Aerometric Information Retrieval System (AIRS) as of June of 2000. In addition to storing information pertinent to the averaging times of the applicable national ambient air quality standards (i.e., 3-hour, 24-hour, and 1-hour means of SO₂), AIRS is currently configured to maintain records of each hourly mean and the maximum 5-minute concentration measured in each hour, if the State submits the data. All values were used at the precision they were reported; no rounding was performed.

¹ These are available in the docket for that rulemaking (Docket No. A-84-25) and improve our understanding of the frequency, magnitude, and number of locations at which high 5-minute concentrations of SO₂ may be occurring, based on available information, including ambient measurements certified as valid by the States that have submitted them to EPA..

Between 1990 and 2000 there were 83 monitors in the continental U.S. reporting 5-minute peak concentration data to AIRS. These 83 monitors are located in the 14 States shown on the map in Figure 1. They are located in 43 counties in those States. The latitude and longitude coordinates of all 83 monitors were verified as falling within the county in which the monitor was coded as being located.

There were almost 2 million 5-minute observations as of June, 2000 in AIRS for this 11-year period. Of these, 1072 observations or 0.05%, equal or exceed 0.6 ppm. Totals of the number of counties, monitors, values greater than or equal to 0.6 ppm, and monitor years covered are shown by State in Table 1.

Table 1. AIRS Ambient SO₂ 5-minute Data Between 1990 and 2000 as of June 2000.

State	Number of Counties	Number of Monitors	Number of Years	Years Covered	No. Obs. ≥ 0.6 ppm
Arkansas	2	2	7	94-00	1
Colorado	1	1	6	94-99	0
Delaware	1	1	5	94-98	0
D.C.	1	2	1	95	0
Florida	3	5	1	95	1
Georgia	3	3	1	95	0
Louisiana	1	1	5	95-99	9
Missouri	6	12	6	94-99	872
Montana	1	9	11	90-00	72
North Carolina	1	1	6	94-99	0
North Dakota	9	15	6	95-00	0
Oklahoma	5	7	2	95-96	0
Pennsylvania	8	23	7	93-99	0
Utah	1	1	5	94-98	96
Total: 14	43	83			1072

The 5-minute concentrations greater than or equal to 0.6 ppm occurred in 13 counties within 7 states at 26 of the 83 short term monitors, and are identified in Table 2. The occurrence of values greater than or equal to 0.6 ppm showed no visually apparent temporal pattern with respect to hour of day, day of week, or month of year.

Table 2. AIRS Ambient SO₂ 5-minute Concentrations \geq 0.6 ppm

State	Counties	AIRS Monitor ID	Years Covered	No. Obs. \geq 0.6 ppm	% Obs. \geq 0.6 ppm
Arkansas	Union	051390006	94-00	1	0.014
Florida	Hamilton	120470015	95	1	0.067
Louisiana	W. Baton Rouge	221210001	95-99	9	0.035
Missouri	Buchanan	290210009	94-99	110	0.165
	Greene	290770026	95-99	1	0.003
		290770037	95-99	19	0.052
	Iron	290930024	94-96	103	0.787
		290930030	96-99	364	0.643
		290930031	94-99	110	0.177
	Jefferson	290990014	94-99	76	0.109
		290990017	98-99	89	0.280
Montana	Yellowstone	301110016	90-91	1	0.021
		301110066	90-00	39	0.048
		301110080	93-00	30	0.054
		301111065	90-91	2	0.042
Pennsylvania	Allegheny	420030021	93-94	3	0.019
		420030031	93-94	1	0.006
		420030032	93-94	11	0.070
		420030064	93-94	2	0.012
		420030116	93-94	15	0.092
		420031301	93-94	2	0.013
		420033003	93-94	6	0.039
	Beaver	420070005	94-98	18	0.049
	Philadelphia	421010048	94-99	36	0.090
	Warren	421230004	97-98	2	0.038
Utah	Salt Lake	490352004	94-98	16	0.044
Total 14	13	26		1072	

Next, we examined the relationship between the 5-minute peak and 1-hour mean concentration data because there are only 83 5-minute peak monitors reporting data to AIRS since 1990 with limited collective spatial coverage, while there are many more monitors reporting 1-hour mean concentration data with greater collective spatial coverage. All of the 83 monitors that reported 5-minute peak values also reported 1-hour mean concentrations. An understanding of the relationship between 5-minute and 1-hour values at these monitors may allow predictions of 5-minute concentrations at the locations of the monitors that measure only 1-hour concentrations.

When we examined 5-minute and 1-hour concentrations together, we observed that many data pairs seemed to merit special note. There were 1547 data pairs in which 5-minute peak was zero, even though a non-zero 1-hour concentration was recorded. There were 227,132 pairs in which both values were zero. There were 117,173 values where the 1-hour value was zero even though the 5-minute peak was non-zero. There were 420,564 pairs in which the 5-minute peak and 1-hour mean values were identical non-zero values. There were 31,114 data pairs in which the ratio of the 5-minute peak value and the 1-hour mean value fell between 0 and 1, i.e., that no 5-minute period had a concentration as high as the mean concentration over the full 1-hour period. There were 3257 data pairs in which the ratio of 5-minute peak concentration to 1-hour mean concentration was greater than 12, i.e., data pairs that seemingly imply negative concentrations sometime during the hour. We believe that none of these patterns would be a sufficient reason to consider the 5-minute concentration readings themselves to be erroneous, particularly as the states have certified the quality of this data. This may be due to sampling lag time for the 5-minute data or the fact that AIRS does not store all 12 5-minute values for each hour. The 1-hour mean is derived from samples taken at different times during the hour for different lengths of time depending on the sampler. Therefore, Tables 1 and 2 are based on the approximately 2 million 5-minute observations.

However, we set out to use an observed relationship between 5-minute peak concentrations and 1-hour mean concentrations at the 83 monitors to make predictions of 5-minute peaks at sites where only 1-hour concentrations are available. The method we selected to do this (described below) makes use of the ratio of the 5-minute and 1-hour concentrations. Since there can be no more than 12 nonoverlapping 5-minute measurements in a given hour, the 5-minute peak to 1-hour mean ratio logically cannot exceed 12. Moreover since, 1-hour mean values cannot exceed the peak values, no 5-minute peak to 1-hour mean ratio can be less than 1. Retaining ratios from the 83 monitors which have a risk of not representing the actual ratio of the ambient concentrations in a consistent time period could lead to incorrect conclusions. Because the 83 monitors provided such a large number of other data pairs with no reason for suspicion, and because the large majority of the approximately 800,000 data pairs discussed above involve concentrations far below the 0.6 ppm concentration of most interest, we chose to remove these data pairs from the data set prior to any further analysis. For these reasons, we constrained the dataset for further analyses to only the 1,149,266 data pairs and corresponding ratio points for which the ratio values are greater than 1 and less than or equal to 12.

To characterize the distribution of the 5-minute data across a range of concentrations, a frequency histogram is shown as Figure 2. The data for Figure 2 is also given in Table 3.

Table 3. Distribution of 5-minute Peak Ambient SO₂ Data (1990-2000)

Midpoints of Groups (Range)	Frequency	Cumulative Frequency	Percent	Cumulative Percent
.005 (0-.0074)	507579	507579	44.17	44.17
.010 (.0075-.0299)	448785	956364	39.05	83.22
.050 (.03-.074)	134774	1091138	11.73	94.94
.100 (.075-.299)	52849	1143987	4.60	99.54
.500 (.3-.749)	4838	1148825	.42	99.96
1.00 (.75-1.994)	441	1149266	.04	100.00

A frequency histogram is shown as Figure 3 to characterize the distribution of the 1-hour mean concentration data after setting aside the 800,000-some data pairs. Table 4 also displays the data for Figure 3. The distribution shows that the large majority of 1-hour concentrations are very low compared to the 0.6 ppm concentrations of interest for shorter periods.

Table 4. Distribution of 1-hour Mean SO₂ Data

Midpoints of Groups (Range)	Frequency	Cumulative Frequency	Percent	Cumulative Percent
.005 (0-.0074)	672060	672060	58.48	58.48
.010 (.0075-.0299)	383721	1055781	33.39	91.87
.050 (.03-.074)	76574	1132355	6.66	98.53
.100 (.075-.299)	16481	1148836	1.43	99.96
.500 (.3-.749)	427	1149263	.04	100.00
1.00 (.75-1.994)	3	1149266	.00	100.00

We examined the relationship between the 5-minute peak and 1-hour mean concentrations with the scatter plot in Figure 4 for discernable patterns. One should note in this graph that although the number of occurrences is relatively few, 5-minute values greater than or equal to 0.6 ppm were found to occur even when the 1-hour mean is small (most of the reported 1-hour means are small). Because of the amount of data only every 20th point is plotted for display purposes here, but all points were used in the analyses.

To examine the distribution of the 5-minute peak to 1-hour mean ratio, we constructed a frequency histogram of the ratio, as shown as Figure 5. The data for Figure 5 is also shown in Table 5.

Table 5. Distribution of 5-minute Peak to 1-hour Mean Ratio

Midpoints of Groups	Frequency	Cumulative Frequency	Percent	Cumulative Percent
1.22	447422	447422	38.93	38.93
1.49	304840	752262	26.52	65.46
2.23	228065	980327	19.84	85.30
2.72	99553	1079880	8.66	93.96
4.48	54334	1134214	4.73	98.69
7.39	15052	1149266	1.31	100.00

To examine the relationship between the 5-minute peak to 1-hour mean ratio and the 1-hour mean, we created the scatter plot in Figure 6. A pattern is evident in which the maximum observed value of the 5-minute peak to 1-hour mean ratio appears to be decreasing as the 1-hour mean value increases. Because of the amount of data, only every 20th point is plotted for display purposes here, but all points were used in the analyses.

To further examine the relationship between the value of the 5-minute peak to 1-hour mean ratios and the 1-hour mean values, we aggregated the 1-hour means into a series of 5 bins and plotted two ratio statistics against the 1-hour bins, as shown in Figure 7. For each of the 1-hour mean bins, the maximum and mean 5-minute peak to 1-hour mean ratio statistics are shown. It should be noted from these results that the maximum value of the 5-minute peak to 1-hour mean ratio for each 1-hour mean bin does appear to decrease as the 1-hour mean increases, suggesting an inverse relationship between the maximum 5-minute peak to 1-hour mean ratios and 1-hour mean values. However, the mean value of the 5-minute peak to 1-hour mean ratio for each 1-hour mean bin appears insensitive to the 1-hour mean bin.

In summary, as of June, 2000 there were 83 monitors in the Continental US covering 14 States and 43 Counties reporting 5-minute SO₂ concentration data to AIRS for 1990 through 2000. These same 83 monitors were also reporting 1-hour data to AIRS.

The key findings of the ambient data analysis include:

- For the data available, 1072 hours, or 0.05% of the total, include 5-minute peak concentrations greater than or equal to 0.6 ppm.
- Peaks greater than or equal to 0.6 ppm are seen to occur in 7 out of the 14 States currently monitoring 5-minute concentrations.
- The maximum ratio of 5-minute peaks to 1-hour means appears to be inversely related to the value of the 1-hour mean.

Uncertainties in the ambient data analysis include:

- There is limited temporal and spatial coverage of the 5-minute monitors. The 83 available monitors may not be located near the sources with the most potential to cause high 5-minute concentrations, or even near sources with typical or average potential.
- A substantial portion of the reported data pairs yielded ratios of 5-minute peak concentration to 1-hour mean concentrations that appeared somewhat illogical and were removed. While removing them seems appropriate, the need to do so causes some uncertainty about the accuracy of the data that remained.

INCORPORATION OF EMISSIONS INVENTORY DATA

To determine whether source type and source emissions of SO₂ and/or distance from the source would be a significant factor in determining the potential for high 5-minute concentrations, and thus useful in assessing the probability of such concentrations in areas not near 5-minute monitors, we investigated the number, type, and size of sources near the 5-minute monitors. The emission inventory data for this analysis was taken from version 3 of the 1996 National Emissions Trends (NET) database in June of 2000. This inventory provides estimates of annual emissions.

In an effort to place practical bounds on the scope of this effort, while ensuring that we included all potentially culpable sources, we limited our data set to all US sources with SO₂ emissions \$500 tons per year (TPY), which produced 2599 source/emission release point combination records.² From this set we identified those sources within 5 kilometers (km) of the 5-minute peak ambient monitors, which resulted in 35 sources and 40 monitors. When counting sources, we count facilities and not individual stacks. (In some cases, a source was within 5 km of more than one monitor, since there are some clusters of monitors among the 83.) This approach located sources near enough of the 5-minute monitors so that the nearby monitors account for over 90% of the 1990-2000 monitored 5-minute peak concentrations greater than or equal to 0.6 ppm. Since June 2000, additional source information has been added to the 1996 emission inventory and a final round of revisions to source parameters including possibly source latitude and longitude is planned but not yet completed. Based on current observations, we believe it likely that once this refinement is complete, it would be possible to identify at least one large source within 5 km of an even larger percentage of the 5-minute peak concentrations greater than or equal to 0.6 ppm. This suggests that while smaller sources and more distant sources

² Some plants or “sources” have more than one emission release point. We identified and considered emission release points with greater than 500 TPY of SO₂ without regard to lower emitting release points at the same source. We considered fugitive emissions, if reported for the source, as coming from one common release point for purposes of comparison to the 500 ton threshhold.

may contribute to 5-minute peaks greater than or equal to 0.6 ppm, they will only infrequently cause such a peak single handedly.

The Standard Industrial Classification (SIC) codes for these sources were examined to correlate the 5-minute peak concentrations greater than or equal to 0.6 ppm with particular industrial source types. Table 6 displays the two most common SIC codes found at the 35 sources and their descriptions, as well as the number of sources with that source category and the number of sources near ambient monitors recording observations greater than or equal to 0.6 ppm. For a complete listing and description of SIC codes or search for a particular SIC refer to the following website:

<http://www.osha.gov/oshstats/sicser.html>. Recall that the monitors were operating between 1990 and 2000 and the NET database is for 1996, and 1996 emissions may be only an approximate indicator of emissions in the years when some high 5-minute peaks were monitored. Appendix 1 give additional detail on this part of the analysis, listing all the 5-minute monitors, the occurrence of high 5-minute peaks, the population in census tracts within 5 km (discussed below), the number of exceedences for 1990 - 2000 and the individual source(s) within 5 km of the monitor from the 1996 NET. Appendix 3 lists all 2599 source/emission release point combination records with their SIC, tons per year, and other data fields. When counting sources, we count facilities and not individual stacks and there were 1201 facilities or sources though there were 2599 source/emission release point combination records. The TPY and other data fields were are the emission release point level and not summed up to the facility level.

Table 6. Number of Sources within 5 Kilometers of 5-Minute Monitors for the Most Common SIC codes.

SIC	Description	No. of Sources within 5 Km of 5-Minute Monitor	No. of Sources with nearby monitored values \geq 0.6 ppm	Total No. of Sources v3 1996 NET emitting \geq 500 TPY SO ₂
2911	Petroleum refining	10	4	87
4911	Electric services	9	4	484

Although most of the 5-minute peak values of 0.6 ppm or above were found in the vicinity of sources within the 2 SIC codes shown in Table 6 (2911 - Petroleum refining and 4911 - Electric services), there were as many or more instances wherein sources in the one of these SIC codes were located near monitors that had no values greater than or equal to 0.6 ppm. This indicates that, although high short-term concentrations have been observed near specific types of sources, other factors also matter. The occurrence of high short-term peaks is likely to be a function of actual emission level (the sources with 500 tons per year or higher emissions included a broad range of emission levels), actual distance from the monitor or receptor point, seasonal and diurnal operating patter, good versus poor operation and maintenance, terrain, stack height, meteorological influences, and/or other as-yet unidentified factors. We do not expect that 5-minute concentrations greater than or equal to 0.6 ppm are occurring near all 1201 large SO₂ sources. However, because the number of source/monitor pairs

which did exhibit concentrations this high was so small (as the number of monitors showing such concentrations is small) and many of the factors were not available at the source level, we do not consider this set of monitors-source pairs to be robust enough to support investigation of a predictive formula involving all the factors suspected to be influential.

We did, however, examine the influence of distance between monitor and source. To determine whether the distance between 5-minute monitor and source could help explain when concentrations above 0.6 ppm were observed, and whether 5 km is an appropriate distance for matching sources and monitors, we selected for analysis those monitors that could most clearly be related to only one source. Where we found more than one source within 5 km of a monitor, we excluded that monitor from this part of our analysis. This resulted in a subset of 21 sources and 29 monitors to analyze. The 1-hour mean concentration data from these 29 5-minute monitors is plotted against each monitor's distance from its associated source in Figure 8. Because of the amount of data, only every 10th point is plotted for display purposes here. Given the scatter in the data it is difficult to discern a pattern, although it appears there are fewer very high concentrations among the monitors more than 2 or 3 km distant than among the monitors that are closer to their matched sources. This suggests that low concentration readings at monitors more than 2 or 3 km from a 500 ton source may not rule out the possibility of higher concentrations closer to the source.³

In summary, we examined available emissions inventory data from the 1996 emission inventory compiled to date. Two suspect source types were associated with the most peaks, although within these categories more information would be needed to better describe the causes associated with those peaks and in any case the sample likely is not robust enough to allow estimation of a functional relationship among these factors and the resulting concentrations. Distance to the source does not appear to be strongly influential, however because other factors were not controlled, the latitudes and longitudes of the emissions data have not been verified, and again the limited number and spatial coverage of the 5-minute monitors, this finding may not be conclusive.

MODEL DEVELOPMENT

In light of the factors discussed and conclusions reached in the previous section, we considered it unproductive to pursue the use of monitoring and inventory data to develop a predictive model that would directly relate source characteristics alone to the probability of a high 5-minute peak. It is, of course, possible to use air quality models to make such predictions but that subject is outside the scope of this analysis.

However, we did pursue the development of a modeling approach that uses monitoring data on 1-hour mean concentrations to predict the occurrence of 5-minute concentrations greater than or equal to 0.6 ppm. EPA has in the past suggested that a single ratio or a narrow range of ratios be applied to

³ For the final version of this analysis, we will consider the relationship between distance and 5-minute peak, and we will divide ambient concentrations by annual emissions in an attempt to control for differences in source size.

peak 1-hour concentrations to predict peak 5-minute concentrations. For example, in the draft guideline document on SO₂ monitoring being released for comment along with this document, it is suggested that a ratio between 2 and 3 be applied to 1-hour concentrations to estimate the level of probable 5-minute peaks. In this analysis, we investigated a less simple approach that would recognize that a wide range of ratios between 5-minute and 1-hour concentrations are evident in the data as presented in the section above on Ambient Data Analysis, and that there is some probability of a high 5-minute peak even during an hour with a relatively low 1-hour mean concentration.

Our basic modeling approach was that for every individual hour and site, we would use the statistical distribution of ratios to determine the likelihood that the given hour and site experienced a 5-minute concentration greater than or equal to 0.6 ppm. By adding these probabilities across the period of monitoring, we would be estimating the statistically expected number of hours during the period in which such 5-minute peaks occur. We would not actually predict a 5-minute concentration for any hour.

We considered first the issue of how 5-minute to 1-hour ratios are distributed statistically and whether there is one distribution that can be applied to all 1-hour concentrations or whether the distribution should be considered to depend on available variables such as source type, distance from the monitor, or 1-hour concentration.

While source type may well correlate with the variability of 5-minute averaged emissions and concentrations within a single hour and during the year, and thus affect the distribution of ratios, we did not pursue this because of the broad categorical nature of the SIC-based source type, the multiple types involved, and the small number of sources in most types for which related 5-minute concentrations are available.

We did examine the relationship between the 5-minute peak to 1-hour mean ratio data taken from a monitor and the distance from that monitor to its associated source, using the scatter plot in Figure 9. Distance did not appear to be influencing the ratio values. While Figure 9 did not explicitly control for source size, size is implicitly controlled via because only ratios of large concentrations attributable to a single source are at issue.

We considered at more length the relationship of ratio to 1-hour concentration, because Figure 6 can be viewed as suggesting a rather strong relationship between 1-hour concentration and the distribution of ratios. From an inspection of Figure 6 it is apparent that large peak to mean ratios are more common at low 1-hour concentrations, although fairly high ratios are possible even for 1-hour periods with rather high concentration values. Nevertheless, for our model, we make the assumption that the distribution of all 5-min peak to mean ratio values is independent of the 1-hour mean concentration. This choice was based on the observation that the mean ratios in Figure 7 do not appear to depend strongly on 1-hour concentration, and that it might simply be that the much smaller sample size of ratios at the higher 1-hour concentrations may be the reason why the maximum observed ratio does appear to decline at higher 1-hour concentrations. Also, the assumption of independence appeared likely to provide a degree of conservativeness (over predicting the occurrence of 5-minute

concentrations greater than or equal to 0.6 ppm), which we felt preferable for this exploratory analysis to a risk of under prediction.

Next, we considered whether to fit a standard distribution form (normal, log-normal, etc.) to the ratio data, or to take some other approach. Fitting a distribution would have resulted in some finite probability of ratios higher than any seen in the actual data. To avoid this, an empirical cumulative frequency distribution was constructed of all ratio values, by connecting points defined by the groupings used for Figure 5, and is shown in Figure 10.⁴

Given a 1-hour mean concentration, we can determine what the peak to mean ratio would have to be in order for the 5-min peak to be greater than or equal to 0.6 ppm. Then by linear interpolation within Figure 10, we can determine the probability of this ratio value occurring. As mentioned before, our model assumes that the distribution of peak to mean ratios is independent of the 1-hour mean concentration value.

The following sample calculation illustrates how the model operates

- 1) Given a 1-hour mean concentration value (v)
- 2) What value of the 5-minute peak to 1-hour mean ratio is necessary for the 5-minute peak to be ≥ 0.6 ppm?

$$\frac{0.6}{v} = R \text{ needed}$$

- 3) In Figure 10, the Cumulative Frequency Distribution of the peak/mean ratio, find the value of p on the X-axis that corresponds to R on the Y-axis. .
- 4) Probability(5-minute peak $\geq .6$ /given the 1-hour mean value (v)) = $(1-p)$

Table 7 illustrates this calculation for a range of possible 1-hour concentrations.

⁴ At this point, the advantage of removing data pairs with ratios exactly equal to or less than 1 is easier to appreciate than it may have been in the section Ambient Data Analysis. If these points are not removed, the cumulative probability distribution in Figure 10 would in effect indicate a finite probability that the ratio is not at least 1, i.e., that the 5-minute peak was less than the 1-hour mean, which is not physically possible.

Table 7. Examples of $P(5\text{-minute peak} \geq .6 / 1\text{-hour mean} = v)$.

v	R	p (from Fig 10)	1-p = P(peak $\geq .6/1\text{-hour} = v$)
.02	.6/.02= 30	100%	0%
.05	.6/.05 = 12	99.96%	.04%
.1	.6/.1 = 6	99%	1%
.2	.6/.2 = 3	90%	10%
.3	.6/.3 = 2	71%	29%
.4	.6/.4 = 1.5	47%	53%
.5	.6/.5 = 1.2	22%	78%
.52	.6/.52 = 1.15	17%	83%
.54	.6/.54 = 1.11	12%	88%
.56	.6/.56 = 1.07	8%	92%
.58	.6/.58 = 1.03	3%	97%
.6	.6/.6 = 1	0%	100%

To test the validity of the model, we compared the predicted probability of a 5-minute peak greater than or equal to 0.6 ppm, at a given 1-hour mean concentration, to the actual frequency with which this is observed among data points from the 83 monitors in which the 1-hour concentration was at or near the same given concentration value. The results of this comparison are in Table 8. Although the a priori expectation was that the model would tend to over predict the probability of high 5-minute peaks, Table 8 shows that it actually tends to under predict except for very low values of the 1-hour concentrations. The overpredicting behavior at low concentrations may simply be due to the fact that the cumulative distribution in Figure 10 was constructed by connecting a few actual data points from the actual sample of ratios, and at the high end of the distribution (large ratios) a linear connection was made to the highest observed ratio and the 100 percent value of probability. If some curvature were given in this range, the predicted probability of a high 5-minute peak would drop off more sharply at lower 1-hour concentrations. Because there are so many 1-hour concentrations at the low end of the range, over prediction in this part of the range may have a significant impact on the overall estimate of the expected occurrence of high 5-minute peaks. In the final version of this analysis, we will pursue a more refined and accurate cumulative distribution.

Table 8. Comparison of Modeled Probability Versus Observed Frequency of 5-minute Peaks Greater Than or Equal to 0.6 ppm

1-hour Mean	Number of Observations	Modeled Probability	Observed Frequency in Data
0.02 (0.001 - 0.03)	1061625	0%	0%
0.05 (0.03-0.06)	62048	.04%	.002%
0.1 (0.06-.15)	22269	1%	.89%
0.15 (.15-.2)	1794	10%	10%
0.2 (.2-.25)	746	17%	23%
02.5 (.25-.3)	357	29%	39%
0.3 (.3-.35)	193	41%	53%
0.35 (.35-.4)	87	53%	71%
0.4 (.4-.45)	60	63%	82%
0.5 (.45-.51)	46	78%	96%
0.52 (.51-.53)	9	83%	89%
0.54 (.53-.55)	7	88%	86%
0.56 (.55-.57)	5	92%	100%
0.58 (.57-.6)	5	97%	100%
0.6		100%	

RESULTS OF PROBABILISTICALLY MODELED AMBIENT MEASUREMENTS

The model was initially applied to 1-hour mean concentration data in AIRS from the year 1996. The probabilities determined at each hour were summed across the year. Figure 11 shows the frequency distribution across all sites of the expected number of 5-minute values greater than or equal to 0.6 ppm. Of the 695 sites, 567 had less than one predicted value greater than or equal to 0.6 ppm. Table 9 shows the number of sites, the number of expected values greater than or equal to 0.6 ppm, and the maximum number of expected values greater than or equal to 0.6 ppm at any one site, by state. Figures 12-14 provide maps highlighting these results by state.

Table 9. Model Predictions of Expected Number of 5-Minute Concentration Values Greater than or Equal to 0.6 ppm by State

State	Number of Sites	Expected Number of Values ≥ 0.6 ppm	Maximum Expected Number of Values ≥ 0.6 ppm At Any One Site
AL	6	7	7
AZ	3	3	3
AR	2	1	1
CA	53	2	1
CO	9	1	1
CT	12	0	0
DE	4	5	4
DC	2	0	0
FL	29	18	6
GA	7	2	1
HI	5	122	122
ID	2	1	1
IL	31	58	10
IN	41	47	10
IA	15	48	30
KS	4	1	1
KY	15	6	1
LA	7	2	1
ME	11	3	1
MD	4	0	0
MA	20	4	2
MI	17	12	5
MN	15	1	0
MS	4	1	1
MO	23	98	17

MT	31	35	15
NE	1	2	2
NH	11	5	2
NJ	15	0	0
NM	10	14	8
NY	30	10	2
NC	15	1	1
ND	16	6	3
OH	37	35	5
OK	7	1	0
PA	49	48	9
RI	3	0	0
SC	11	1	1
TN	34	33	11
TX	22	18	5
UT	5	1	1
VT	2	0	0
VA	10	2	1
WA	9	5	4
WV	23	48	11
WI	6	4	3
PR	5	0	0
VI	2	0	0

We found that the top three States with measured ambient exceedences do indeed show up with a high expected value in the 1996 probability modeled data. Other States without 5-minute data but with suspect industry types near their 1-hour monitors had high expected values in the 1996 probability modeled data as well. However the model was very simple and based on a limited amount of 5-minute measured data.

As just alluded to, we identified industrial source categories near the 1-hour monitors, using version 3 of the 1996 NET database. The SIC codes were examined to determine whether sources

within particular industrial source categories were located within 5 km of 1-hour monitors where there is a relatively greater likelihood of 5-minute peak concentrations greater than or equal to 0.6 ppm. Table 10 displays the most common SIC codes representing the sources within 5 km of the 1-hour monitors and their description, as well as the number of sources with that source category and the number of sources for which our model had predicted at least 1 observation greater than or equal to 0.6 ppm. Appendix 2 lists the 1-hour monitors, their population, the number of expected exceedences for 1996, and the source(s) within 5 km of the monitor from the 1996 NET. Appendix 3 lists all sources with emission release points emitting 500 or more tons per year of SO₂ and other source parameters.

Table 10. Number of 500 or Greater Ton/Year Sources within 5 Kilometers of 1-Hour Monitors by SIC codes.

SIC	Description	No. of Sources within 5 Km of 1-Hour Monitor	No. of Sources with ≥ 1 expected values ≥ 0.6 ppm
2911	Petroleum refining	37	10
4911	Electric services	100	37
2621	Paper mills	14	3
3312	Steel works, blast furnaces (including coke ovens) and rolling mills	21	9
2819	Industrial inorganic chemicals	11	7
2869	Industrial organic chemicals	8	4

Although most of the predicted values greater than or equal to 0.6 ppm were associated with two SIC codes (2911 - Petroleum refining and Electric, gas, and sanitary services), there is not a consistent relationship between these categories and the probability of high short-term peak concentrations, since we also found that there were as many or more instances where sources within the same category were located near monitors that had no predicted values greater than or equal to 0.6 ppm. A third source category (3312 - Steel works, blast furnaces (including coke ovens) and rolling mills was identified with the modeled data that was not found in association with the 5-minute observed data SIC list in Table 6. Several other SICs were identified as having more than 5 source/monitor matchings, with at least three of those having at least one predicted value greater than or equal to 0.6 ppm. These are Paper mills and Industrial inorganic chemicals (2621 and 2819) although, again, most of the sources within these categories which were found near monitors had less than 1 predicted value greater than or equal to 0.6 ppm.

POPULATION NEAR MONITORS

Distribution of both 5-minute monitors and 1-hour monitors was examined with respect to nearby population, for two reasons. First, the size of the nearby population may be a surrogate for some more detailed characteristic of sources or monitor-source relationship that could affect the distribution of ratios. Disparities between the nearby population for 5-minute monitors and 1-hour monitors would be a reason for caution in applying to the second group ratios determined from the first group. Second, the number of nearby residents is itself of interest as an indicator of potential public health risks from concentrations greater than or equal to 0.6 ppm.

The distribution of monitors among population centers of different sizes is similar for the 5-minute and 1-hour monitors, as shown in Figure 15. The distribution of values greater than or equal to 0.6 ppm by population is also similar for both the 5-minute measurements and the predictions from 1-hour monitors, as shown in Figure 16. The data for both of these figures are in Tables 11 and 12 respectively. This is a weak indicator that the modeled data from the 1-hour monitors is not from population densities that are different from the 5-minute monitors. If so, they model would be less reliable.

Table 11. Distribution of Monitors By Population.

Population in (1000s) (lower end of range)	Number of 5- minute Monitors	Percentage of 5- minute Monitors	Number of 1- hour Monitors	Percentage of 1-hour Monitors
> 1000	0	0	3	.44
500	0	0	5	.73
300	2	2.44	9	1.31
200	1	1.22	15	2.18
150	6	7.32	29	4.21
100	4	4.88	83	12.05
75	4	4.88	59	8.56
50	10	12.20	93	13.5
25	15	18.29	118	17.13
15	7	8.54	59	8.56
10	7	8.54	45	6.53
5	6	7.32	75	10.89
0-5	20	24.39	96	13.93
Total	82	100	689	100

Table 12. Distribution of Values ≥ 0.6 ppm By Population.

Population in (1000s) (lower end of range)	Number of 5-minute Monitors with values ≥ 0.6	Percentage of 5-minute Monitors with values ≥ 0.6	Number of 1-hour Monitors with at least 1 expected occurrence of a 5-min peak ≥ 0.6	Percentage of 1-hour Monitors with at least 1 expected occurrence of a 5-min peak ≥ 0.6
> 1000	NA		0	0
500	NA		0	0
300	0	0	0	0
200	0	0	0	0
150	4	4.88	3	.44
100	2	2.44	5	.73
75	1	1.22	9	1.31
50	1	1.22	17	2.47
25	7	8.54	39	5.66
15	4	4.88	16	2.32
10	2	2.44	11	1.6
5	0	0	13	1.89
0-5	5	6.10	17	2.47
Total	26	31.71	130	18.87

Table 12 shows that no population of more than 200,000 is near to either an actual monitored 5-minute peak greater than or equal to 0.6 ppm or to a 1-hour monitor with even a single statistically expected number of hours with such a peak. It should be noted that the distribution of measured values greater than or equal to 0.6 ppm by population is influenced by a small number of areas. For areas with populations less than 5000, 97% of these values were recorded in Iron County, Missouri. For populations between 25,000 and 50,000, 94% were recorded in Missouri (Greene and Jefferson Counties, or 56% of population group total) and Billings, Montana (39% of population group total). For populations between 150,000 and 200,000, all of the exceedences came from Pennsylvania, in Philadelphia and Allegheny Counties.

STATE SUBMITTED DATA

As of September, 2000, in response to a request for assistance transmitted by EPA to the State

and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Offices, we received additional 5-minute monitoring data from 9 states in various formats. These formats include spreadsheets, word processing documents, and ascii or flat text files. Two states put their data into AIRS. Most of the data contains only concentration values with no indication of location, monitor type, or nearby source types. Much of this information has reportedly not been quality assured and is therefore of uncertain validity. We are attempting to further determine the validity of these data and expect to incorporate any additional data in our analyses which have been certified by the States as valid.

QUALIFICATIONS AND SOURCES OF UNCERTAINTY

- 1 Our method for estimating the probability of 5-minute concentrations from 1-hour data appears to perform well, but cannot predict with absolute certainty for any one location (i.e., actual results could be higher or lower).
- 2 While we believe 5-minute and 1-hour monitors to be distributed similarly in terms of proximate sources, terrain, etc., if they are not, then our methodology may be less reliable.
- 3 While we expect 5-minute monitoring sites to be directed toward the areas of expected highest concentrations, and our network design guidance has emphasized this, we cannot confirm this. We believe that the more common 1-hour monitors are in general not placed near large sources, so results presented here based on 1-hour monitors likely do not represent the situation near such sources very well.
- 4 5-minute concentrations as high as, or higher than, those measured may occur in the same vicinity and the monitor is not likely to record all or the worst occurrences.
- 5 Differences in air quality among sources and locations could be functions of different emissions, operating characteristics, meteorology, terrain, or all of these.
- 6 There could be sources of types other than the types we have identified which could be causing high but unmonitored 5-minute or 1-hour concentrations elsewhere.
- 7 Source locational data have not been verified, so we may have erroneously associated sources with monitors (or neglected other sources). The source listings in the appendices give states and sources an opportunity to review and comment on the location information.
- 8 Peak to mean ratio values outside of the logical range may indicate unreliability even of the ratios that were kept for analysis.

However, EPA, the Regions, and States have devoted significant effort to identifying and

characterizing emissions sources and in quality assuring ambient monitoring data over the past 2 decades and that this fact needs to be considered along with the last two of these observations.

CONCLUSIONS

- 1 For the 5-minute peak data available, 1072 hours, or 0.05% of the total, include 5-minute peak concentrations greater than or equal to 0.6 ppm.
- 2 Peaks greater than or equal to 0.6 ppm are seen to occur in 7 out of the 14 States currently monitoring 5-minute concentrations.
- 3 “Petroleum refining” and “Electric services” were associated with the most measured and statistically predicted peaks.
- 4 Within source categories more information is needed to better describe the causes associated with peaks.
- 5 The top three States with measured ambient exceedences have a high expected value in the 1996 probability modeled data.
- 6 Other States without 5-minute data but with suspect industry types had high expected values in the 1996 probability modeled data
- 7 A third source category (3312 - Steel works, blast furnaces (including coke ovens) and rolling mills) was identified with the modeled data that was not found in association with the 5-minute observed data
- 8 Several other SICs were identified as having more than 10 source/monitor matchings, with at least two of those having at least one predicted value greater than or equal to 0.6 ppm. These are Paper mills and Industrial inorganic chemicals (2621 and 2819)

Preliminary Analysis of 5-Minute Maximum Ambient SO₂ Concentrations

Appendix 1 - All sources within 5 km of 5-minute monitors by site

State	County	City	Monitor				
			Siteid	Latdd	Longdd	Pop 5 km	# => .6
DELAWARE	NEW CASTLE	NOT IN A CITY	100031008	39.5778	-75.6111	6,808	0
DISTRICT OF COLUMBIA	WASHINGTON	WASHINGTON D. C.	110010017	38.9036	-77.0517	227,325	0
DISTRICT OF COLUMBIA	WASHINGTON	NOT IN A CITY	110010041	38.8972	-76.9528	174,421	0
FLORIDA	ESCAMBIA	PENSACOLA	120330004	30.5250	-87.2042	56,843	0
FLORIDA	ESCAMBIA	PENSACOLA	120330022	30.5447	-87.2161	41,836	0
FLORIDA	HAMILTON	NOT IN A CITY	120470015	30.4111	-82.7836	3,710	1
FLORIDA	NASSAU	FERNANDINA BEACH	120890005	30.6583	-81.4633	14,421	0
FLORIDA	NASSAU	FERNANDINA BEACH	120890009	30.6864	-81.4475	13,646	0
GEORGIA	FANNIN	NOT IN A CITY	131110091	34.9856	-84.3753	4,561	0
GEORGIA	FLOYD	ROME	131150003	34.2614	-85.3242	6,921	0
GEORGIA	FULTON	ATLANTA	131210048	33.7758	-84.4008	139,064	0
LOUISIANA	WEST BATON ROUGE	PORT ALLEN	221210001	30.5019	-91.2097	29,724	9
MISSOURI	BUCHANAN	ST JOSEPH	290210009	39.7314	-94.8775	22,967	110
MISSOURI	GREENE	SPRINGFIELD	290770026	37.1231	-93.2631	47,547	1
MISSOURI	GREENE	NOT IN A CITY	290770037	37.1039	-93.2533	29,313	19
MISSOURI	IRON	NOT IN A CITY	290930005	37.6106	-91.1153	3,046	0
MISSOURI	IRON	NOT IN A CITY	290930024	37.4797	-90.6903	2,001	103
MISSOURI	IRON	NOT IN A CITY	290930030	37.4664	-90.6900	1,294	364
MISSOURI	IRON	NOT IN A CITY	290930031	37.5194	-90.7125	2,001	110
MISSOURI	JEFFERSON	NOT IN A CITY	290990014	38.2672	-90.3794	23,014	76
MISSOURI	JEFFERSON	FESTUS	290990017	38.2528	-90.3933	26,809	89
MISSOURI	MONROE	NOT IN A CITY	291370001	39.4731	-91.7892	812	0
MISSOURI	ST CHARLES	NOT IN A CITY	291830010	38.5792	-90.8411	3,849	0
MISSOURI	ST CHARLES	NOT IN A CITY	291831002	38.8725	-90.2264	13,499	0
MONTANA	YELLOWSTONE	LAUREL	301110016	45.6564	-108.7658	13,002	1
MONTANA	YELLOWSTONE	BILLINGS	301110066	45.7867	-108.4578	26,812	39
MONTANA	YELLOWSTONE	BILLINGS	301110076	45.7547	-108.5197	44,287	0
MONTANA	YELLOWSTONE	BILLINGS	301110079	45.7706	-108.5756	57,902	0
MONTANA	YELLOWSTONE	BILLINGS	301110080	45.7772	-108.4736	32,659	30
MONTANA	YELLOWSTONE	BILLINGS	301110083	45.7953	-108.4558	26,515	0
MONTANA	YELLOWSTONE	BILLINGS	301111065	45.8019	-108.4261	14,078	2

MONTANA	YELLOWSTONE	BILLINGS	301112005	45.8039	-108.4456	25,111	0
MONTANA	YELLOWSTONE	BILLINGS	301112008	45.7864	-108.5231	54,804	0
NORTH CAROLINA	FORSYTH	WINSTON-SALEM	370670022	36.1106	-80.2267	70,363	0
NORTH DAKOTA	BILLINGS	NOT IN A CITY	380070002	46.8928	-103.3731	553	0
NORTH DAKOTA	BILLINGS	NOT IN A CITY	380070003	46.9619	-103.3561	175	0
NORTH DAKOTA	BURKE	NOT IN A CITY	380130002	48.9903	-102.7811	597	0
NORTH DAKOTA	CASS	FARGO	380171003	46.9103	-96.7950	44,117	0
NORTH DAKOTA	CASS	FARGO	380171004	46.9336	-96.8544	9,702	0
NORTH DAKOTA	DUNN	NOT IN A CITY	380250003	47.3200	-102.5261	425	0
NORTH DAKOTA	MC KENZIE	NOT IN A CITY	380530002	47.6011	-103.2642	713	0
NORTH DAKOTA	MC KENZIE	NOT IN A CITY	380530104	47.5753	-103.9689	169	0
NORTH DAKOTA	MC KENZIE	NOT IN A CITY	380530111	47.6056	-104.0172	169	0
NORTH DAKOTA	MERCER	BEULAH	380570001	47.2589	-101.7825	4,887	0
NORTH DAKOTA	MERCER	NOT IN A CITY	380570004	47.2986	-101.7669	4,350	0
NORTH DAKOTA	MORTON	MANDAN	380590002	46.8414	-100.8700	22,367	0
NORTH DAKOTA	MORTON	MANDAN	380590003	46.8731	-100.9050	11,391	0
NORTH DAKOTA	OLIVER	NOT IN A CITY	380650002	47.1858	-101.4281	642	0
NORTH DAKOTA	STEELE	NOT IN A CITY	380910001	47.5997	-97.8986	231	0
OKLAHOMA	GARVIN	WYNNEWOOD	400490272	34.6575	-97.1667	6,641	0
OKLAHOMA	KAY	PONCA CITY	400710602	36.7042	-97.0875	31,882	0
OKLAHOMA	MUSKOGEE	MUSKOGEE	401010167	35.7928	-95.3019	13,928	0
OKLAHOMA	OKLAHOMA	OKLAHOMA CITY	401090018	35.4794	-97.5461	84,539	0
OKLAHOMA	TULSA	TULSA	401430135	36.1308	-96.0033	64,430	0
OKLAHOMA	TULSA	TULSA	401430175	36.1500	-96.0100	54,775	0
OKLAHOMA	TULSA	TULSA	401430235	36.1267	-101.9983	69,031	0
PENNSYLVANIA	ALLEGHENY	AVALON	420030002	40.5006	-80.0719	90,441	0
PENNSYLVANIA	ALLEGHENY	PITTSBURGH	420030021	40.4136	-79.9414	158,254	3
PENNSYLVANIA	ALLEGHENY	PITTSBURGH	420030031	40.4433	-79.9906	190,158	1
PENNSYLVANIA	ALLEGHENY	PITTSBURGH	420030032	40.4144	-79.9422	163,692	11
PENNSYLVANIA	ALLEGHENY	LIBERTY	420030064	40.3236	-79.8683	83,139	2
PENNSYLVANIA	ALLEGHENY	NOT IN A CITY	420030067	40.3819	-80.1856	20,285	0

PENNSYLVANIA	ALLEGHENY	STOWE TOWNSHIP	420030116	40.4736	-80.0772	109,109	15
PENNSYLVANIA	ALLEGHENY	NORTH BRADDOCK	420031301	40.4025	-79.8603	120,918	2
PENNSYLVANIA	ALLEGHENY	GLASSPORT	420033003	40.3181	-79.8811	70,668	6
PENNSYLVANIA	ALLEGHENY	CLAIRTON	420033004	40.3050	-79.8889	53,511	0
PENNSYLVANIA	BEAVER	NOT IN A CITY	420070002	40.5625	-80.5042	5,654	0
PENNSYLVANIA	BEAVER	NOT IN A CITY	420070005	40.6847	-80.3597	18,624	18
PENNSYLVANIA	BERKS	READING	420110009	40.3203	-75.9267	121,175	0
PENNSYLVANIA	CAMBRIA	JOHNSTOWN	420210011	40.3097	-78.9150	67,921	0
PENNSYLVANIA	ERIE	ERIE	420490003	42.1417	-80.0386	78,758	0
PENNSYLVANIA	PHILADELPHIA	PHILADELPHIA	421010022	39.9167	-75.1889	302,177	0
PENNSYLVANIA	PHILADELPHIA	PHILADELPHIA	421010048	39.9914	-75.0808	176,994	36
PENNSYLVANIA	PHILADELPHIA	PHILADELPHIA	421010136	39.9275	-75.2228	335,248	0
PENNSYLVANIA	WARREN	WARREN	421230003	41.8572	-79.1375	21,320	0
PENNSYLVANIA	WARREN	NOT IN A CITY	421230004	41.8447	-79.1697	20,763	2
PENNSYLVANIA	WASHINGTON	CHARLEROI	421250005	40.1464	-79.9022	41,745	0
PENNSYLVANIA	WASHINGTON	WASHINGTON	421250200	40.1706	-80.2614	42,956	0
PENNSYLVANIA	WASHINGTON	NOT IN A CITY	421255001	40.4453	-80.4208	7,037	0
UTAH	SALT LAKE	NOT IN A CITY	490352004	40.7347	-112.2108	1,307	16
ARKANSAS	PULASKI	NORTH LITTLE ROCK	51191002	34.8306	-92.2594	53,894	0
ARKANSAS	UNION	EL DORADO	51390006	33.2150	-92.6689	30,086	1
COLORADO	DENVER	DENVER	80310002	39.7511	-104.9872	151,079	0

	FIPSST	FIPSCNTY	PLANTID
	10	3	16
plant within 5 Km			
STAR ENTERPRISE,DELAWARE CITY			
CRIST	12	33	45
CRIST	12	33	45
WHITE SPRINGS AGRICULTURAL CHEMICALS,INC	12	47	2
 B I T MANUFACTURING INC	47	139	4 TN
INLAND-ROME INC	13	115	21
 EXXON RFRY	22	33	15
RHONE-POULENC	22	33	33
PLACID REFINING	22	121	10
LAKE ROAD	29	21	4
 DOE RUN COMPANY	29	93	9
ASARCO	29	93	8
ASARCO	29	93	8
ASARCO	29	93	8
THE DOE RUN COMPANY - SMELTING	29	99	3
THE DOE RUN COMPANY - SMELTING	29	99	3
 LABADIE	29	71	3
 J E CORETTE	30	111	15
J E CORETTE	30	111	15
 J E CORETTE	30	111	15
J E CORETTE	30	111	15
J E CORETTE	30	111	15

J E CORETTE	30	111	15
J E CORETTE	30	111	15
R. J. R. TOBACCO CO. - GROUP 90, BAILEY	37	67	405

R M HESKETT	38	59	1
R M HESKETT	38	59	1

Wynnewood Refin/Wynnewood	40	49	2782
Conoco Inc./Ponca City Re	40	71	1314
Continental Car/Ponca Cit	40	71	1333
Ft. Howard Corp/Muskogee	40	101	1643
MUSKOGEE	40	101	2952

Sun Company Inc/Refinery	40	143	2477
Sun Company Inc/Refinery	40	143	2477
Sinclair Oil Co/902 West	40	143	2458
Sinclair Oil Co/902 West	40	143	2458
Sun Company Inc/Refinery	40	143	2477
KOSMOS CEMENT COMPANY	42	3	39
SHENANGO NEVILLE ISLAND COKE WORKS	42	3	50

KOSMOS CEMENT COMPANY	42	3	39
SHENANGO NEVILLE ISLAND COKE WORKS	42	3	50
ZINC CORP AMER	42	7	32
AES BEAVER VALLEY PARTNERS INC	42	7	42
TITUS	42	11	45
INTL PAPER CO	42	49	4
GE CO	42	49	9
ERIE COKE CORP	42	49	31
SUN COMPANY, INC.	42	101	1501
SUN COMPANY, INC.	42	101	1501
UNITED REFINING CO.	42	123	3
WARREN	42	123	4
UNITED REFINING CO.	42	123	3
WARREN	42	123	4
KOPPERS INDUSTRIES	42	129	7

Preliminary Analysis of 5-Minute Maximum Ambient SO₂ Concentrations

Appendix 2 - All sources within 5 km of 1 hour monitors by site

Monitor								
State	County	Pop w/in 5K	Siteid	Expected # :	Latdd	Longdd	SO2 Source	SIC
ALABAMA	JACKSON	5941	10710020	0.158067	34.8667	-85.7167	Widows Creek	4911
	MOBILE	6715	10970028	6.8234272	30.95	-88.0167	AKZO Nobel Chem	2819
	MORGAN	18254	11030009	0	34.6167	-87.05	Solutia	2869
CALIFORNIA	CONTRA COST	40992	60132001	0	38	-122.133	Shell Martinez	2911
	LOS ANGELES	271188	60374002	0	33.8167	-118.183	ARCO Products	2911
	SAN LUIS OBIS	9812	60791005	0.5941364	35.0333	-120.567	Unocal Carbon	2999
		12390	60792004	1.0440788	35.0167	-120.567	Unocal Carbon	2999
COLORADO	SOLANO	40008	60950001	0	38.05	-122.133	Exxon Corp	2911
	ADAMS	55418	80013001	0.1748338	39.8333	-104.933	Conoco Inc Denve	2911
	EL PASO	14699	80416001	0.0251144	38.6333	-104.7	Ray D Nixon	4911
		14699	80416009	0.0035123	38.6333	-104.7	Ray D Nixon	4911
CONNECTICUT	FAIRFIELD	113139	80416011	0.0250461	38.8333	-104.817	MartinDrake	4911
		86502	80416013	0	38.8	-104.817	MartinDrake	4911
		107130	90010012	0.0669344	41.1833	-73.15	Bridgeport Harbo	4911
		129824	90091003	0.0032116	41.3	-72.9	NewHaven Harbor	4911
		153443	90091123	0.084596	41.3	-72.9167	NewHaven Harbor	4911
DELAWARE	NEW LONDON	62566	90110007	0.0024304	41.35	-72.0667	Montville	4911
	NEW CASTLE	59493	100031003	0.1728423	39.75	-75.4833	DuPont EdgeMoor	2816
		106852	100032002	0.3667014	39.75	-75.5333	DuPont EdgeMoor	2816
FLORIDA	SUSSEX	22922	100051002	0.0076871	38.6333	-75.6	DuPont Seaford	2824
	DADE	63462	120250019	0	25.8833	-80.3667	Tarmac Florida	3241
		100596	120310032	0.0306866	30.35	-81.6333	Jefferson Smurfi	2631
	DUVAL	64922	120310097	0.0260816	30.3667	-81.5833	Jefferson Smurfi	2631
		50250	120330022	0.7525377	30.5333	-87.2	Crist	4911
HAMILTON	ESCAMBIA	3710	120470015	0.0307217	30.4	-82.7833	White Springs Ag	2874
	HILLSBOROUGH	74019	120570021	1.3433471	27.9333	-82.45	F J Gannon	4911
		25183	120570095	2.028652	27.9167	-82.4	F J Gannon	4911
		12926	120570108	5.5571444	27.85	-82.3833	Cargill Fertiliz	2874
		12926	120570109	0.7069712	27.85	-82.3833	Cargill Fertiliz	2874
PINELLAS	44885	120571035	0.7071534	27.9167	-82.45	F J Gannon	4911	
	PINELLAS	65120	121030023	2.5010833	27.85	-82.6167	P L Bartow	4911
		47344	121037001	0.1654027	28.15	-82.7667	Anclote	4911

	POLK	6572	121050010	1.0543387	27.85	-82.0167	IMC-AGRICO New W	2874
		10781	121052006	0.0404419	27.8833	-81.95	Mulbery Phosphat	2874
	PUTNAM	19468	121071008	0.2976597	29.6833	-81.65	GA-Pacific P&P	2621
	SARASOTA	95905	121151002	0.1386271	34.1	-84.9	Bowen	4911
GEORGIA	CHATHAM	37638	130510019	0.0436174	32.0833	-81.15	Union Camp Corp	2621
	FANNIN	7729	131110091	0.739722	34.9833	-84.3667	BIT Manuf Inc	3331
	FLOYD	12549	131150003	0.1017514	34.25	-85.3167	Inland Rome Inc	2631
HAWAII	HONOLULU	0	150030011	0	21.3333	-158.117	KAHE	4911
		0	150031006	0	21.3333	-158.1	KAHE	4911
IDAHO	BANNOCK	24091	160050004	1.1868797	42.9	-112.5	JRSIMPLOT	2891
		27780	160050015	0.0919857	42.8667	-112.483	JRSIMPLOT	2819
ILLINOIS	ADAMS	45844	170010006	0.7085492	39.9167	-91.4	IL Veterans Home	8059
	COOK	119979	170310050	0.0225939	41.7	-87.5667	LTV Steel Co Rep	3312
		66526	170310059	0.1605421	41.6833	-87.5333	LTV Steel Co Rep	3312
		252143	170310063	0.1021369	41.8667	-87.6333	Fisk	4911
		116398	170311018	0.359809	41.7667	-87.8	Best Foods CPC I	2046
		127661	170312001	0.246144	41.65	-87.6833	Clark Oil & Refi	2911
		318047	170314002	0.1536389	41.85	-87.75	Crawford	4911
	MACON	56314	171150013	0.0620759	39.8667	-88.9167	Caterpillar Deca	3531
	MADISON	46126	171190008	1.7309584	38.8833	-90.1333	Jefferson Smurfi	2631
		52143	171190017	0.8611124	38.7	-90.1333	National Steel	3312
		20092	171191010	6.2109443	38.8167	-90.05	Shell Oil-Wood R	2911
		35810	171193007	1.6668245	38.85	-90.1	Shell Oil-Wood R	2911
		36176	171193009	8.9381571	38.85	-90.0667	Shell Oil-Wood R	2911
	PEORIA	93605	171430024	2.492766	40.6833	-89.6	ADM Corn Proc	2869
	ROCK ISLAND	81316	171610003	0.0024304	41.5	-90.5	Rock Isl Arsenal	2892
	ST CLAIR	48216	171630010	1.6247149	38.6	-90.15	Solutia-Monsanto	2869
		52736	171631010	5.5674242	38.5833	-90.15	Solutia-Monsanto	2869
		2130	171631011	1.3896467	38.2333	-89.8333	Baldwin	4911
	TAZEWELL	35133	171790004	4.9923581	40.55	-89.65	Pekin Energy	2869
	WABASH	11896	171850001	2.2908847	38.3833	-87.7667	Gibson	4911
	WILL	13379	171970013	0.1261349	41.45	-88.1667	Mobil Joliet Ref	2911
INDIANA	DEARBORN	14556	180290004	2.6702504	39.0833	-84.85	Tanners Creek	4911
	FLOYD	77308	180430007	1.8942819	38.2667	-85.8333	R Gallagher	4911
		63276	180431004	1.4977484	38.3	-85.8333	R Gallagher	4911
	JASPER	6108	180730002	0.0123409	41.1833	-87.05	R M Schahfer	4911
	JEFFERSON	17954	180770004	0.0845812	38.7667	-85.4	Clifty Creek	4911

	LAKE	59327	180891016	0.2977548	41.6	-87.3333	US Steel Co Gary	3312
		85766	180892008	0.6571063	41.6333	-87.4833	Amoco - Whiting	2911
	LA PORTE	41042	180910005	0.0075791	41.7167	-86.9	Michigan City	4911
	MARION	108379	180970029	0.1784252	39.7667	-86.1667	Perry K	4911
		56687	180970054	0.0480082	39.7167	-86.1833	Elmer Stout	4911
		65194	180970057	0.1938376	39.7333	-86.1833	Elmer Stout	4911
		121913	180970072	0.7238751	39.7667	-86.15	Perry K	4911
	MORGAN	9804	181091001	0.353284	39.5	-86.3833	H T Pritchard	4911
	PIKE	5264	181250005	1.340922	38.5167	-87.2333	Frank E Ratts	4911
	PORTER	20179	181270011	0.0488649	41.6333	-87.1	Bailly	4911
		22547	181270017	0.0657912	41.6167	-87.1	Bailly	4911
		19927	181270023	0.2914734	41.6167	-87.1333	Bailly	4911
	POSEY	6208	181291002	0.4571485	37.9	-87.7167	A B Brown	4911
	TIPPECANOE	45635	181570006	0.076412	40.4333	-86.85	AE Staley-Sagamo	2046
	VANDERBURGH	9387	181631001	0.5076709	37.9333	-87.6833	A B Brown	4911
	VIGO	58184	181670018	0.4026218	39.4833	-87.4	Indiana St U	8221
		51396	181671014	1.2866988	39.5	-87.4	Indiana St U	8221
	WARRICK	7599	181730002	5.149884	37.9333	-87.3	F B Culley	4911
		6682	181731001	10.387491	37.9333	-87.3333	F B Culley	4911
	WAYNE	40610	181770006	1.164888	39.8	-84.8833	Whitewater Valle	4911
		18027	181770007	0.5625101	39.7833	-84.8667	Whitewater Valle	4911
IOWA	CLINTON	27341	190450018	0.4999863	41.8167	-90.2	Milton L Kapp	4911
		27341	190450019	0.0188443	41.8167	-90.2	Milton L Kapp	4911
		35196	190450020	0.1444602	41.8333	-90.2	Milton L Kapp	4911
	LINN	75625	191130029	0.0013685	41.9667	-91.6667	Prairie Creek	4911
		82007	191130031	29.579866	41.9833	-91.65	Prairie Creek	4911
	MUSCATINE	19241	191390017	0.5573966	41.3833	-91.05	Muscatine	4911
		27016	191390020	10.866135	41.4	-91.05	Muscatine	4911
	SCOTT	105899	191630015	0	41.5167	-90.5833	Rock Isl Arsenal	2892
KANSAS	WYANDOTTE	73810	202090001	0.0427536	39.1	-94.6167	KAW	4911
		52908	202090020	0.6376294	39.15	-94.6167	Quindaro	4911
KENTUCKY	BOYD	38989	210190015	1.1317298	38.45	-82.6167	South Point Etha	2869
		23607	210191003	0.0438939	38.3833	-82.6	Marathon Ashland	2911
	DAVIESS	29961	210590005	0.194915	37.7667	-87.0667	Elmer Smith	4911
	HENDERSON	29778	211010013	1.0227513	37.85	-87.5667	Henderson I	4911
	JEFFERSON	70546	211110032	1.0521537	38.1667	-85.85	Cane Run	4911
		18538	211110051	0.4075273	38.05	-85.8833	Mill Creek	4911

		110191	211111041	0.3711536	38.2167	-85.8167	E I DuPont Inc	2822
	LIVINGSTON	6615	211390004	0.0942896	37.0667	-88.3333	Air Prod & Chemi	2821
	MC CRACKEN	4688	211450001	0.0268292	37.1167	-88.8	Shawnee	4911
LOUISIANA	CALCASIEU	19913	220190008	0.039184	30.25	-93.2833	Conoco Ref	2911
	EAST BATON R	103748	220330009	0.09172	30.45	-91.1667	Exxon Rfry	2911
	BERNARD	87792	220870002	1.0724097	29.9667	-89.9833	CII Carbon	2999
		52316	220870004	0.0081082	29.9333	-89.9333	Meraux Pet Ref	2911
	WEST BATON F	40433	221210001	1.1115893	30.5	-91.2	Exxon Rfry	2911
MARYLAND	ANNE ARUNDE	41049	240032002	0.3665178	39.15	-76.5	Herbert A Wagner	4911
	BALTIOMRE	329086	245100018	0.0712806	39.3	-76.6	C P Crane	4911
MASSACHUSETT	BRISTOL	102197	250050010	0.1981487	41.6833	-71.1667	Brayton Point	4911
		42579	250056001	1.5164597	41.75	-71.1833	Somerset	4911
	ESSEX	38534	250093003	0.0577335	42.5	-70.85	Salem Harbor	4911
MICHIGAN	DELTA	15732	260410902	0.0251603	45.7833	-87.0833	Mead Paper Co	2621
	KALAMAZOO	45988	260770905	0	42.2667	-85.5333	Georgia Pacific	2621
	ST CLAIR	37393	261470005	3.597762	42.95	-82.45	EB Eddy Paper	2621
	WAYNE	62574	261630005	0.1931871	42.2667	-83.1167	National Steel C	3312
		84574	261630015	1.2572297	42.3	-83.1	River Rouge	4911
		167162	261630016	0.4452694	42.35	-83.0833	Mistersky	4911
		61696	261630027	4.7608284	42.2833	-83.1	River Rouge	4911
		131397	261630033	0.2083965	42.3	-83.15	Marathon Oil Co	2911
		78761	261630062	0.494363	42.3333	-83.05	Mistersky	4911
		83799	261630092	0.3532351	42.2833	-83.1167	River Rouge	4911
MINNESOTA	DAKOTA	4419	270370020	0.2013032	44.75	-93.0167	Koch Ref-Sulfuri	2819
		7682	270370423	0.025895	44.7667	-93.05	Koch Ref-Sulfuri	2819
		6418	270370426	0.0139957	44.7667	-93.0167	Koch Ref-Sulfuri	2819
	HENNEPIN	138538	270530957	0	45.0167	-93.2667	Riverside	4911
	OLMSTED	79086	271090025	0.0466687	44.0333	-92.45	Silver Lake	4911
	SHERBURNE	7822	271410011	0.0215609	45.3833	-93.8833	Sherburne County	4911
		7822	271410012	0.0133282	45.3833	-93.8833	Sherburne County	4911
		7822	271410013	0	45.3667	-93.8833	Sherburne County	4911
	WASHINGTON	42492	271630436	0.3194937	44.8333	-92.9833	Ashland Petrol	2911
	WRIGHT	15825	271710007	1.3638409	30.4333	-89.0167	Jack Watson	4911
MISSOURI	BUCHANAN	24488	290210009	16.123312	39.7167	-94.8667	Lake Road	4911
	IRON	1294	290930024	15.345209	37.4667	-90.6833	ASARCO	2911, 2819, & 3321
		1294	290930030	3.2656554	37.45	-90.6833	ASARCO	2911, 2819, & 3321
		2001	290930031	17.3665	37.5167	-90.7	ASARCO	2911, 2819, & 3321

	JEFFERSON	14265	290990014	15.774896	38.2667	-90.3667	Doe Run Co Smelt	2819
	ST CHARLES	5366	291830010	0.1432814	38.5667	-90.8333	Labadie	4911
	ST LOUIS	72535	295100072	1.3130819	38.6167	-90.1833	Solutia - Monsan	2869
		165968	295100080	0.5651712	38.6667	-90.2333	Mallinckrodt Spe	2833
MONTANA	ROSEBUD	3793	300870700	0	45.8833	-106.617	Colstrip	4911
		3793	300870701	0	45.9	-106.633	Colstrip	4911
	YELLOWSTONE	19104	301110066	2.9765256	45.7833	-108.45	JE Corette	4911
		20991	301110080	3.9108361	45.7667	-108.467	JE Corette	4911
		52780	301112008	0.0266774	45.7833	-108.517	JE Corette	4911
NEBRASKA	DOUGLAS	50109	310550048	1.74279	41.3167	-95.9333	North Omaha	4911
NEW HAMPSHIRE	MERRIMACK	14297	330131003	1.7431835	43.1667	-71.45	Merrimack	4911
NEW JERSEY	BERGEN	886090	340030001	0	40.8	-73.9833	Exxon Co USA	7011
	HUDSON	262874	340171002	0.0123082	40.7167	-74.0667	Hudson	4911
	UNION	169315	340390003	0.0020181	40.65	-74.2	PSE & G Co	4911
		146595	340390004	0.0062844	40.6333	-74.2	PSE & G Co	4911
NEW MEXICO	DONA ANA	36535	350130017	4.2219573	31.7833	-106.55	ASARCO Inc	3331
	EDDY	14346	350151004	0.0477742	32.85	-104.4	Navajo Refin/Art	2911
NEW YORK	ALBANY	114991	360010012	0.0051723	42.6667	-73.75	Tobin Packing Co	2711
	BRONX	690826	360050073	0.3991101	40.8	-73.9	Astoria	4911
		1064404	360050080	0.7960984	40.8333	-73.9167	Center for Housi	6513
	ERIE	97848	360294002	2.2911299	42.9833	-78.9	Tonawanda Coke	3312
		77775	360298001	0.0861442	42.8167	-78.8333	Bethenergy Lack	3312
	KINGS	806248	360470011	0.0710264	40.7167	-73.9333	East River	4911
		1076754	360470076	0.0898356	40.6667	-73.9667	Hudson Avenue	4911
	MONROE	195352	360556001	2.1082047	43.15	-77.6	Rochester 3	4911
	NEW YORK	886626	360610010	0.1939261	40.7333	-73.9833	Hudson Avenue	4911
		1019704	360610056	0.4251357	40.75	-73.95	East River	4911
	NIAGARA	54957	360632006	1.1103964	43.0833	-78.9833	Carbide/Graphite	3624
	QUEENS	585598	360810004	0.0564833	40.7333	-73.8167	79 Kew Gardens	6514
	RICHMOND	199926	360850067	0.0157799	40.5833	-74.1167	Willowbrook Dev	8063
NORTH CAROLINA	BEAUFORT	2023	370130003	0.0670556	35.35	-76.7667	PCS Phosphate Co	2874
	FORSYTH	76054	370670022	0.1045267	36.1	-80.2167	RJR Tobacco Co	2111
	NEW HANOVER	28440	371290006	1.0120798	34.2667	-77.95	L V Sutton	4911
	NORTHAMPTO	17837	371310002	0	36.4833	-77.6167	Champion Int	2621
NORTH DAKOTA	MERCER	695	380570123	0.7405424	47.3833	-101.85	Antelope Valley	4911
	MORTON	22598	380590002	2.9267631	46.8333	-100.867	R M Heskett	4911
OHIO	BUTLER	80491	390170004	0.2048313	39.3833	-84.5333	ARMCO Steel Co	3312

		59605	390171004	0.0736912	39.5167	-84.3833 AK Steel Corp	3312
	CUYAHOGA	91505	390350026	0.2349888	41.4333	-81.65 LTV Steel B002	3312
		113277	390350038	1.8150299	41.4667	-81.6667 LTV Steel B002	3312
		132017	390350045	0.2265979	41.4667	-81.65 LTV Steel B002	3312
		113834	390350060	0.5327403	41.4833	-81.6667 LTV Steel B002	3312
		212922	390356001	0.8620489	41.5	-81.6167 Lake Shore	4911
	HAMILTON	109903	390612003	0.4666472	39.2167	-84.4333 Jeff Smurfit-Loc	2631
	JEFFERSON	28107	390811001	0.9884232	40.3167	-80.6 WheelingPit Stee	3312
		42064	390811012	3.8468633	40.35	-80.6167 WheelingPit Stee	3312
	LAKE	36601	390853002	3.426166	41.7167	-81.2333 Painesville	4911
	LAWRENCE	30524	390871009	0.0041965	38.4167	-82.5667 South Point Etha	2869
	LORAIN	57390	390930026	0.0443533	41.4667	-82.1333 USS/KOBE LORAIN	3312
	LUCAS	62124	390950006	0.8289712	41.6667	-83.4833 BP OIL COMPANY	2911
		43056	390950008	0.0354394	41.65	-83.4667 BP OIL COMPANY	2911
	MAHONING	110661	390990009	0.5184117	41.0833	-80.65 Youngstown Therm	4961
	MONTGOMERY	131955	391130025	0.0133877	39.75	-84.1833 DAYTN POWR LONGW	4961
	MORGAN	4678	391150003	4.8098435	39.6167	-81.6667 MUSKINGUM RIVER	4911
	SCIOTO	18443	391450013	0.0098158	38.75	-82.9167 NEW BOSTON COKE	3312
	SUMMIT	98067	391530017	1.8344899	41.05	-81.4667 GOODYEAR TIRE 11	3011
		144012	391530022	0.216439	41.0667	-81.5167 GOODYEAR TIRE 11	3011
	TUSCARAWAS	34077	391570003	0.9152126	40.5	-81.4667 DOVER	4911
OKLAHOMA	GARVIN	6641	400490272	0.1774693	34.65	-97.1667 Wynnewood Refin	2911
	KAY	33359	400710602	0.0146434	36.7	-97.0833 Conoco Ponca Cit	2911
	MUSKOGEE	14381	401010167	0.408854	35.7833	-95.3 Ft Howard Muskog	2621
	TULSA	61042	401430175	0.2721837	36.15	-96 Sinclair Oil 902	2911
		61042	401430501	0	36.15	-96 Sinclair Oil 902	2911
		69031	401430235	0	36.13	-96 Sinclair Oil 902	2911
PENNSYLVANIA	ALLEGHENY	97802	420030002	2.1815901	40.5	-80.0667 Shenango Neville	3312
		111714	420030116	5.5624543	40.4667	-80.0667 Shenango Neville	3312
	BEAVER	21819	420070005	6.2946218	40.6833	-80.35 AES BEAVER VALLE	4911
	BERKS	119676	420110009	0.7178147	40.3167	-75.9167 TITUS	4911
		131182	420110100	0.3011327	40.3333	-75.9167 TITUS	4911
	DELAWARE	85746	420450002	0.0860938	39.8333	-75.3667 BP OIL INC	2911
		67525	420450109	0.2133502	39.8167	-75.4 General Chem Cor	2819
	ERIE	77325	420490003	1.9942762	42.1333	-80.0333 ERIE COKE CORP	3312
	NORTHAMPTOI	89516	420950017	0.0433849	40.6167	-75.35 Bethlehem Struct	3312
	PHILADELPHIA	283173	421010022	0.349886	39.9167	-75.1833 Sun Co Inc	2911

		272084	421010136	0.0128571	39.9167	-75.2167	Sun Co Inc	2911
	WARREN	21320	421230003	0.4913434	41.85	-79.1333	United Refining	2911
		20763	421230004	0.2615415	41.8333	-79.1667	United Refining	2911
	WASHINGTON	39641	421250005	0.1754853	40.1333	-79.9	Koppers Indust	3312
SOUTH CAROLIN	CHARLESTON	58256	450190003	0.1552557	32.8667	-79.9667	Westvaco-Kraft	2611
TENNESSEE	GEORGETOWN	15137	450430006	0.037988	33.35	-79.2833	Int Paper GeoTwn	2611
	ANDERSON	24200	470010028	1.6786317	36.0167	-84.15	Bull Run	4911
	BRADLEY	7308	470110102	0.1617233	35.2667	-84.75	Bowaters Paper	2621
	COFFEE	6019	470310004	0	35.0333	-88.25	Packaging Corp A	2621
	HAWKINS	7770	470730002	5.4402625	36.3667	-82.9667	John Sevier	4911
	HUMPHREYS	6387	470850020	0.342401	36.05	-87.95	EI DuPont De Nem	2816
	LOUDON	9900	471050106	0.2493078	35.7333	-84.3	Viskase Corp	3089
	MC MINN	7308	471070101	0.2830573	35.2833	-84.75	Bowaters Paper	2621
	MONTGOMERY	43069	471250006	0.0291667	36.5167	-87.3833	Salvage Zn Inc	3339
		24603	471250106	0.0878563	36.5	-87.3833	Salvage Zn Inc	3339
	POLK	6569	471390003	0.6858639	35.0167	-84.3833	BIT Manufacturin	3331
		7729	471390007	0.4464766	34.9833	-84.3667	BIT Manufacturin	3331
		7729	471390008	1.9676428	34.9833	-84.3667	BIT Manufacturin	3331
		6733	471390009	0.9542369	34.9833	-84.3833	BIT Manufacturin	3331
	ROANE	14888	471450009	0.6546322	35.9333	-84.5167	Kingston	4911
	STEWART	4882	471610007	0.0247833	36.3833	-87.6333	Cumberland	4911
		5758	471610031	0.0330103	36.4	-87.6333	Cumberland	4911
	SULLIVAN	44904	471630007	4.7336378	36.5333	-82.5167	Holston Army Amm	2892
		29873	471630009	0.8096148	36.5	-82.55	Holston Army Amm	2892
TEXAS	SUMNER	10521	471651002	11.018647	36.3333	-86.3833	Gallatin	4911
	ELLIS	7616	481390015	0.0253784	32.4333	-97.0167	TXI Operations	3241
		9691	481390016	0.9541657	32.4667	-97.0167	TXI Operations	3241
	EL PASO	68144	481410027	2.2369232	31.75	-106.483	ASARCO Inc	3331
		73828	481410033	1.3152806	31.7667	-106.5	ASARCO Inc	3331
		73828	481410037	4.5645651	31.7667	-106.5	ASARCO Inc	3331
	GALVESTON	44818	481671002	4.3739231	29.3833	-94.9333	AMOCO Oil Co	2911
	HARRIS	131851	482010059	1.6475447	29.7	-95.2667	Valero Refining	2911
		76957	482011034	0.0948275	29.7667	-95.2167	ELF ATOCHEM Nort	2869
		98012	482011035	0.3233935	29.7333	-95.25	Valero Refining	2911
	JEFFERSON	30340	482450009	1.5457117	30.0333	-94.0667	OLIN Chem&Chlor	2819
		19299	482450011	0.7003139	29.8833	-93.9833	Motiva Enterpris	2911
	NUECES	31657	483550031	0	27.8	-97.4667	Citgo Ref & Chem	2911

UTAH	SALT LAKE	31067	490351001	0.002828	40.7	-112.083	Kennecott - UT	3331
VIRGINIA	CHARLES CITY	10982	510360002	0.4149158	37.3333	-77.25	AlliedSignal Inc	2869
	ALEXANDRIA	143551	515100009	0.9980864	38.85	-77.05	Potomac River	4911
WASHINGTON	PIERCE	49456	530530021	0.257062	47.2667	-122.367	Kaiser Al -Tacom	3355
		37335	530530031	0.0816952	47.25	-122.383	Kaiser Al -Tacom	3355
	SKAGIT	7635	530570012	0.378966	48.4833	-122.55	Tesoro Northwest	2911
		5243	530571003	0.2509802	48.4833	-122.533	Tesoro Northwest	2911
WEST VIRGINIA	HANCOCK	10626	540290005	2.3339367	40.3333	-80.5833	WheelingPit Stee	3312
		28986	540290007	2.6425813	40.45	-80.5667	Weirton Steel	3312
		34031	540290009	3.1445683	40.4167	-80.5833	Weirton Steel	3312
		39606	540290011	4.171034	40.3833	-80.6	Weirton Steel	3312
		35278	540290014	2.4648837	40.4333	-80.6	Weirton Steel	3312
		28625	540291004	2.8996369	40.4167	-80.5667	Weirton Steel	3312
	WAYNE	27920	540990002	0.1974818	38.3833	-82.5833	Marathon Ashland	2911
		27920	540990003	0.3369543	38.3833	-82.5833	Marathon Ashland	2911
		20986	540990004	0.7233228	38.3667	-82.5833	Marathon Ashland	2911
		20986	540990005	0.5620037	38.3667	-82.5833	Marathon Ashland	2911
WISCONSIN	WOOD	44527	541071002	3.919652	39.3167	-81.55	Degussa Corp	2895
	BROWN	62596	550090005	0.0523695	44.5167	-87.9833	Pulliam	4911
	DANE	75061	550250041	0.0289346	43.1	-89.35	Blount Street	4911
	MARATHON	13827	550730005	0.7311387	45.0167	-89.65	Wausau-Mos Broka	2621
	MILWAUKEE	235924	550790007	0.1600629	43.0333	-87.9167	Valley	4911
	ONEIDA	14328	550850996	3.0486718	45.6333	-89.4	Wausau-Mos Rhine	2621

2nd Source	SIC	3rd Source	SIC	4th Source SIC	5th Source SIC	6th Source SIC
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Cerestar		2046				
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Edge Moor	4911
Edge Moor	4911

Cargill Fertiliz 2874

The Celotex Corp 2621
State Line 4911
State Line 4911

AE Staley Manuf 2046 Archer Daniels M 2046
Wood River 4911

Clark Oil & Ref 2911 Wood River 4911
Clark Oil & Ref 2911

Big River Zinc 3339
Big River Zinc 3339

Powerton 4911

Jos Seagram & So 2085

LTV Steel Co 3312 Rhone Poulenc Ch 2819

Allison Engine 8 3724
Allison Engine 8 3724

Petersburg 4911

Wabash River 4911
Warrick 4911
Warrick 4911

Owensboro Grain 2075

Rohm & Haas KY 2821

R S Nelson 4911

Rhone-Poulenc 2819 Placid Refining 2911

River Rouge 4911

National Steel C 3312
Rouge Steel Co 3312

National Steel C 3312 Marathon Oil Co 2911
Koch Refining 2911
Koch Refining 2911
Koch Refining 2911

Big River Zinc C	3339 Anheuser-Busch	2082 Mallinckroc	2833		
Metropolitan Hos	8062 74th Street	4911			
Exxon Corp	2911				
Exxon Corp	2911				
Charles Poletti	4911				
C R Huntley	4911 Outokumpu Am Bra	3351			
Ravenswood	4911				
Zacharakos	6513 1927 Flatbush Co	6513 2015 Bedfo	6513 Kings Co H	6512 Kingsboro	8063
Univ of Rochester	8999				
Vladeck #2	6513 East River	4911 Ravenswo	4911		
Ravenswood	4911 74th Street	4911 Metropolita	8062		
Hooker EFW Plant	2819				
Koch Sulfur Prod	2819				
Hamilton	4911 Champion Int-Ham	2671			

LTV Steel B004	3312		
LTV Steel B004	3312	Cleveland Therma	4961
LTV Steel B004	3312		
LTV Steel B004	3312	Cleveland Therma	4961
Medical Center C	8082		

WheelingP-Steube	3312		
WheelingP-Steube	3312		
Eastlake	4911		

SUN REFINING & M	2911		
SUN REFINING & M	2911		

AKZO NOBEL SALT	2899	BF GOODRICH AKI	2822
UNION CAMP CHEN	2869		

Muskogee	4911		
Sun Co Inc Refin	2911		
Sun Co Inc Refin	2911		
Sun Co Inc Refin	2911		
Kosmos Cement	3241		
Kosmos Cement	3241		
ZINC CORP AMER	3339		

EDDYSTONE	4911		
SUN CO INC	2911	Congoleum Corp	3996
INTL PAPER CO	2621	GE CO	BP Oil Inc
			2911
			3743

Warren 4911

TVA Johnsonville 4911 Johnsonville
AE Staley Manuf 2046 4911

Valero Ref-TX 2911 Marathon Ashland
Lyondell-CITGO R 2911 AES Deepwater 4911

Lyondell-CITGO R 2911 AES Deepwater 4911
Mobil Oil Corp 2911
Clark Refining & 2911
Coastal Ref & Ma 2911

Stone Container 2631 Phillip Morris U 2141

Texaco Ref & Mar 2911
Texaco Ref & Mar 2911
WheelingP-Steube 3312

WheelingPit Stee 3312

Green Bay Packag 2631 Ft James Corp 2621

Preliminary Analysis of 5-Minute Maximum Ambient SO₂ Concentrations

Appendix 3 - All source/stack combinations with 500 tons/year SO₂

FIPSST	FIPSCNTY	PLANTID	POINTID	STACKID	PLANT	STKHGT	STKDIAM	STKTEMP	STKFLOW	STKVEL
1	1	1	10		1 UNION CAMP CORPORATION	205	10.5	350	4147.68	47.9
1	23	1	25		9 FORT JAMES-PENNINGTON INC	132	6.5	411	1174.68	35.4
1	23	1	26		10 FORT JAMES-PENNINGTON INC	132	6.5	387	1032	31.1
1	23	1	27		11 FORT JAMES-PENNINGTON INC	126	6.5	361	1579.52	47.6
1	23	2	1		11 PRUET PRODUCTION COMPANY	135	2	675	1.57	0.5
1	23	3	1		1 PRUET PRODUCTION COMPANY	50	4.4	1800	3.04	0.2
1	33	10	1		2 COLBERT	634	26.25	295	52495.4	97
1	33	10	2		2 COLBERT	634	26.25	295	52495.4	97
1	33	10	3		2 COLBERT	634	26.25	295	52495.4	97
1	33	10	4		2 COLBERT	634	26.25	295	52495.4	97
1	33	10	5		1 COLBERT	500	20.99	310	33565.07	97
1	47	3	1		888 INTERNATIONAL PAPER CO RIVE	174	5.54	204	1219.48	50.59
1	47	3	13		7 INTERNATIONAL PAPER CO RIVE	200	12	361	4863.2	43
1	53	5	1		1 VINTAGE PETROLEUM INC	250	6.3	850	1334.18	42.8
1	53	7	13		13 EXXON COMPANY USA	280	5.3	360	1208.99	54.8
1	53	7	14		14 EXXON COMPANY USA	280	5.3	360	1233.26	55.9
1	55	2	1		1 GADSDEN	300	15.01	315	10086.19	57
1	55	2	2		1 GADSDEN	300	15.01	315	10086.19	57
1	55	8	22		6 GULF STATES STEEL INC	52	2.5	90	31.91	6.5
1	63	1	1		1 GREENE COUNTY	500	24.25	285	34177.96	74
1	63	1	2		1 GREENE COUNTY	500	24.25	285	34177.96	74
1	71	7	1		1 TENNESSEE ALLOYS CORPORAT	83	14.8	350	5917.97	34.4
1	71	8	1		3 WIDOWS CREEK	1000	27.01	298	56152.12	98
1	71	8	2		3 WIDOWS CREEK	1000	27.01	298	56152.12	98
1	71	8	3		3 WIDOWS CREEK	1000	27.01	298	56152.12	98
1	71	8	4		3 WIDOWS CREEK	1000	27.01	298	56152.12	98
1	71	8	5		3 WIDOWS CREEK	1000	27.01	298	56152.12	98
1	71	8	6		3 WIDOWS CREEK	1000	27.01	298	56152.12	98
1	71	8	7		1 WIDOWS CREEK	500	20.75	170	27391.27	81
1	71	8	8		2 WIDOWS CREEK	500	24.25	175	37411.01	81
1	73	1	7		0 DRUMMOND COMPANY, INC.	204	8.18	298	1374.26	26.15
1	73	11	1		1 JAMES H MILLER JR	700	25	270	37306.5	76

1	73	11	2	2 JAMES H MILLER JR	700	25	300	37306.5	76
1	73	11	3	1 JAMES H MILLER JR	700	25	270	37306.5	76
1	73	11	4	1 JAMES H MILLER JR	700	25	270	37306.5	76
1	73	355	29	0 SLOSS INDUSTRIES CORPORATI	134	6.94	480	1202.16	31.78
1	73	355	30	0 SLOSS INDUSTRIES CORPORATI	134	6.94	480	1202.16	31.78
1	73	355	31	0 SLOSS INDUSTRIES CORPORATI	134	6.94	480	1202.16	31.78
1	73	355	32	0 SLOSS INDUSTRIES CORPORATI	134	6.94	480	1202.16	31.78
1	79	1	1	1 CHAMPION INTERNATIONAL	261	7.5	335	4457.64	100.9
1	79	1	6	6 CHAMPION INTERNATIONAL	261	11	300	7089.49	74.6
1	91	1	8	9 GULF STATES PAPER CORPORA	296	11.5	350	5557	53.5
1	97	14	1	1 MOBIL OIL EXPLORATION & PRO	213	4.3	450	871.32	60
1	97	14	5	5 MOBIL OIL EXPLORATION & PRO	194	1.5	1800	1148.65	650
1	97	1001	1	1 BARRY	505	25.66	295	32062.39	62
1	97	1001	2	1 BARRY	505	25.66	295	32062.39	62
1	97	1001	3	1 BARRY	505	25.66	295	32062.39	62
1	97	1001	4	2 BARRY	600	17.98	280	23359.21	92
1	97	1001	5	3 BARRY	600	25	295	41724.38	85
1	97	2005	10	9 INTERNATIONAL PAPER SIEBERT	239	8.8	317	3430.33	56.4
1	97	2005	11	10 INTERNATIONAL PAPER SIEBERT	239	8.8	313	3083.64	50.7
1	97	2005	12	11 INTERNATIONAL PAPER SIEBERT	239	10	344	6024.02	76.7
1	97	2021	3	888 MOBILE ENERGY SERVICES COM	102	4.76	380	614.65	34.54
1	97	5009	3	3 AKZO NOBEL CHEMICALS INC	150	6.5	1000	962.31	29
1	97	5009	4	5 AKZO NOBEL CHEMICALS INC	201	6	190	791.68	28
1	99	10	1	888 ALABAMA RIVER PULP CO INC	174	5.54	204	1219.48	50.59
1	99	10	7	888 ALABAMA RIVER PULP CO INC	174	5.54	204	1219.48	50.59
1	103	10	9	3 SOLUTIA INC	190	8	301	2734.45	54.4
1	103	10	13	888 SOLUTIA INC	165	7.08	387	1385.01	35.18
1	103	10	14	888 SOLUTIA INC	165	7.08	387	1385.01	35.18
1	103	10	15	888 SOLUTIA INC	165	7.08	387	1385.01	35.18
1	103	10	16	888 SOLUTIA INC	165	7.08	387	1385.01	35.18
1	103	10	17	888 SOLUTIA INC	165	7.08	387	1385.01	35.18
1	103	39	20	18 CERESTAR USA DECATUR INC	140	7	160	1285.39	33.4
1	109	5	3	2 SANDERS LEAD CO	180	4	168	1413.72	112.5
1	109	5	4	3 SANDERS LEAD CO	180	4	173	1446.39	115.1
1	117	4	1	1 BLUE CIRCLE CEMENT INC	100	6.3	350	832.31	26.7
1	117	4	2	2 BLUE CIRCLE CEMENT INC	100	6.3	350	832.31	26.7
1	117	5	1	1 E C GASTON	750	23.51	263	36464.93	84

1	117	5	2	1 E C GASTON	750	23.51	263	36464.93	84
1	117	5	3	1 E C GASTON	750	23.51	263	36464.93	84
1	117	5	4	1 E C GASTON	750	23.51	263	36464.93	84
1	117	5	5	2 E C GASTON	750	29.98	290	45178.74	64
1	117	8	5	6 CHEMICAL LIME CO OF ALABAMA	80	6	500	2233.68	79
1	117	8	10	10 CHEMICAL LIME CO OF ALABAMA	80	6	500	2233.68	79
1	121	6	7	6 U S ALLIANCE COOSA PINES COF	150	8	450	2332.32	46.4
1	121	6	8	7 U S ALLIANCE COOSA PINES COF	150	8	450	2332.32	46.4
1	121	6	9	8 U S ALLIANCE COOSA PINES COF	150	8	450	2332.32	46.4
1	121	6	10	9 U S ALLIANCE COOSA PINES COF	150	8	450	2332.32	46.4
1	125	6	1	1 EMPIRE COKE CO	150	8.3	460	649.27	12
1	125	7	25	25 HUNT REFINING COMPANY	111	2.5	1200	201.26	41
1	125	7	25	26 HUNT REFINING COMPANY	111	2.3	970	234.33	56.4
1	127	1	10	2 GORGAS	750	32.99	290	63253.89	74
1	127	1	6	1 GORGAS	350	23.99	290	24408.73	54
1	127	1	7	1 GORGAS	350	23.99	290	24408.73	54
1	127	1	8	2 GORGAS	750	32.99	290	63253.89	74
1	127	1	9	2 GORGAS	750	32.99	290	63253.89	74
1	129	1	1	1 CHARLES R LOWMAN	250	8.52	284	2907.64	51
1	129	1	2	2 CHARLES R LOWMAN	399	16.51	170	12416.9	58
1	129	1	3	2 CHARLES R LOWMAN	399	16.51	170	12416.9	58
1	129	8	3	3 OLIN CHEMICAL CORPORATION	150	5.1	312	1434.06	70.2
1	129	9	1	1 PHILLIPS PETROLEUM CORP	250	3.2	1000	764.04	95
1	131	1	3	888 MACMILLAN BLOEDEL PACKAGIN	174	5.54	204	1219.48	50.59
2	90	8	1	1 GVEA NORTH POLE	50	10	700	5457.74	69.49
4	1	3 U1B		1 CORONADO	500	19.02	225	25003.14	88
4	1	3 U2B		1 CORONADO	500	19.02	225	25003.14	88
4	1	4	1	1 SPRINGERVILLE	500	20.34	166	27294.31	84
4	1	4	2	1 SPRINGERVILLE	500	20.34	166	27294.31	84
4	1	59	2	2 SALT RIVER PROJECT (SRP)	500	19	233	22172	78.2
4	3	2	2	2 APACHE STATION	400	15.96	212	10803.15	54
4	3	2	3	2 APACHE STATION	400	15.96	212	10803.15	54
4	5	4	1	1 NAVAJO	775	25	275	53996.25	110
4	5	4	2	1 NAVAJO	775	25	275	53996.25	110
4	5	4	3	1 NAVAJO	775	25	275	53996.25	110
4	7	615	1	1 AMERICAN SMELTING AND REFIN	1000	17	250	43126.31	190
4	7	615	2	0 AMERICAN SMELTING AND REFIN	261	9.25	184	1850.04	27.53

4	7	615	2	2 AMERICAN SMELTING AND REFIN	920	23.45	135	14684.38	34
4	7	615	2	6 AMERICAN SMELTING AND REFIN	261	9.25	184	1850.04	27.53
4	7	898	1	0 CYPRUS MIAMI MINING CORPOR/	44	2.87	244	127.38	19.69
4	7	898	1	1 CYPRUS MIAMI MINING CORPOR/	200	6	122	2233.68	79
4	7	898	1	2 CYPRUS MIAMI MINING CORPOR/	250	22	97	4941.74	13
4	17	1	1	1 CHOLLA	250	12.77	157	7044.26	55
4	17	1	2	2 CHOLLA	550	14.67	159	19944.96	118
4	17	1	3	3 CHOLLA	550	17.52	300	20491.7	85
4	17	1	4	4 CHOLLA	550	19.18	235	29759.48	103
4	17	397	2	2 ARIZONA PUBLIC SERVICE COMP	550	14.67	178	17967.36	106.3
4	17	397	3	3 ARIZONA PUBLIC SERVICE COMP	550	17.5	316	21743.8	90.4
4	17	397	4	4 ARIZONA PUBLIC SERVICE COMP	550	19.17	255	20405.84	70.7
4	17	424	1	2 STONE CONTAINER CORPORATION	214	12	225	6808.48	60.2
4	19	40	55	55 CYPRUS SIERRITA CORPORATIO	125	7.08	109	748.02	19
4	19	82	4	4 IRVINGTON	248	10.28	287	6556.99	79
4	19	310	11	36 ARIZONA PORTLAND CEMENT CO	75	10	475	4178.33	53.2
4	21	102	3	1 MAGMA COPPER CO.	250	9.5	160	4961.76	70
4	21	102	3	5 MAGMA COPPER CO.	509	20.8	120	3058.16	9
4	21	102	3	15 MAGMA COPPER CO.	550	20	180	5623.46	17.9
4	21	102	4	4 MAGMA COPPER CO.	550	20	180	5623.46	17.9
4	21	102	4	14 MAGMA COPPER CO.	106	13	150	5309.3	40
4	25	698	402	4 CHEMICAL LIME CO., AKA: CHEM	140	7.5	336	2535.86	57.4
4	25	698	403	5 CHEMICAL LIME CO., AKA: CHEM	168	6	463	1484.41	52.5
5	3	13	26	19 GEORGIA-PACIFIC PAPER	241	13	365	6714.94	50.59
5	7	107	1	1 FLINT CREEK	540	19.99	264	28559.98	91
5	27	28	3	0 ETHYL CORPORATION	94	7.89	790	1277.57	26.13
5	63	36	1	75 ARKANSAS EASTMAN COMPANY	200	9	300	2238.06	35.18
5	63	42	1	1 INDEPENDENCE	1000	26.51	321	62923.84	114
5	63	42	2	1 INDEPENDENCE	1000	26.51	321	62923.84	114
5	69	16	4	4 INTERNATIONAL PAPER	275	8.5	303	2993.31	52.75
5	69	110	1	1 WHITE BLUFF	1000	25.68	262	46614.76	90
5	69	110	2	1 WHITE BLUFF	1000	25.68	262	46614.76	90
5	73	5	3	3 MKP OPERATING CO	100	1	670	38.88	49.5
5	81	2	5	5 GEORGIA PACIFIC	235	12	125	3978.77	35.18
6	13	7130310	4285	133 CHEVRON PRODUCTS COMPANY	150	7.9	625	31860.93	650
6	13	7130311	1426	9999 SHELL MARTINEZ REFINING COM	129	6.5	428	2006.25	60.46
6	13	7130313	802	9999 TOSCO CORP, AVON REFINERY	129	6.5	428	2006.25	60.46

6	13	7130313	806	6 TOSCO CORP, AVON REFINERY	250	12	440	73513.44	650
6	13	7130322	1	5 UNION CHEMICALS	250	5.5	400	15442.93	650
6	13	7130322	2	6 UNION CHEMICALS	250	5.5	400	15442.93	650
6	37	1.91E+11	9147	9999 ARCO PRODUCTS CO	28	50	149	10524.36	5.36
6	37	1.91E+11	9632	9999 CHEVRON U.S.A. INC	28	50	149	10524.36	5.36
6	37	1.91E+11	9030	9999 UNION OIL CO OF CAL (NSR USE	28	50	149	10524.36	5.36
6	53	25 7-1		1 MOSS LANDING	500	17.66	250	27923.97	114
6	71	3.61E+13	21025	1025 MITSUBISHI CEMENT	47	19.9	335	202167.1	650
6	79	4011314	4	4 UNOCAL CARBON PLANT	110	5.3	450	14340.23	650
6	95	48130315	5	1 EXXON CORPORATION	465	15.5	634	122650	650
6	95	48130315	6	9999 EXXON CORPORATION	91	5.5	305	832.49	35.04
8	1	1	1	2 CHEROKEE	300	16	200	16286.05	81
8	1	1	2	1 CHEROKEE	300	16	200	16084.99	80
8	1	1	3	3 CHEROKEE	300	19.51	272	11958.19	40
8	1	1	4	4 CHEROKEE	400	22	175	23188.15	61
8	1	3	25	25 CONOCO INC DENVER REFINERY	195	4.5	412	425.44	26.75
8	1	3	53	53 CONOCO INC DENVER REFINERY	150	3.7	1200	127.84	11.89
8	1	3	74	74 CONOCO INC DENVER REFINERY	107	5.28	70	490.24	22.39
8	13	1	5	1 VALMONT	251	17	200	12483.93	55
8	31	8	1	1 ARAPAHOE	250	13.01	315	8375.02	63
8	31	8	2	1 ARAPAHOE	250	13.01	315	8375.02	63
8	31	8	3	2 ARAPAHOE	250	13.01	320	11565.51	87
8	31	8	4	2 ARAPAHOE	250	13.01	320	11565.51	87
8	41	4	6	3 MARTIN DRAKE	200	12.57	320	6825.34	55
8	41	4	7	4 MARTIN DRAKE	250	15.01	310	10617.04	60
8	41	30	1	1 RAY D NIXON	460	17.52	270	15429.05	64
8	43	1	5	5 HOLNAM INC PORTLAND PLT	175	8	460	2513.28	50
8	43	1	7	7 HOLNAM INC PORTLAND PLT	175	8	460	2513.28	50
8	43	1	48	48 HOLNAM INC PORTLAND PLT	175	12.5	400	4601.95	37.5
8	43	3	59	1 W N CLARK	494	18.32	270	20600.17	78.15
8	59	820	4	4 TRIGEN - COLORADO ENERGY C	130	8	300	2915.4	58
8	59	820	6	6 TRIGEN - COLORADO ENERGY C	200	13	300	3981.98	30
8	69	53	101	1 RAWHIDE	505	17.48	160	19918.28	83
8	77	2	1	2 CAMEO	494	18.32	270	20600.17	78.15
8	77	2	2	2 CAMEO	494	18.32	270	20600.17	78.15
8	81	18 C1		1 CRAIG	600	17.3	164	35494.42	151
8	81	18 C2		1 CRAIG	600	17.3	164	35494.42	151

8	81	18 C3		2 CRAIG	600	17.3	167	35494.42	151
8	85	1	1	1 NUCLA	215	11.99	243	7188.93	63.67
8	87	11	1	1 PAWNEE	550	23.51	336	22573.53	52
8	101	3	1	1 COMANCHE	500	24.75	261	27423.08	57
8	101	3	2	2 COMANCHE	500	24.75	266	30790.82	64
8	107	1 H1		1 HAYDEN	250	16.23	314	13240.61	64
8	107	1 H2		2 HAYDEN	395	16.96	265	29142.87	129
9	1	195 BHB1		1 BRIDGEPORT HARBOR	203	7.48	292	3867.02	88
9	1	195 BHB2		2 BRIDGEPORT HARBOR	251	10.46	256	7304.21	85
9	1	195 BHB3		3 BRIDGEPORT HARBOR	498	14	300	20473.81	133
9	1	4214	1	1 NORWALK HARBOR	350	16	300	20910.49	104
9	1	4214	2	1 NORWALK HARBOR	350	16	300	20910.49	104
9	7	874	3	3 MIDDLETOWN	266	11.99	298	10952.19	97
9	7	874	4	4 MIDDLETOWN	498	17.98	600	25390.44	100
9	9	2514	8	1 DEVON	340	13.01	280	13027.81	98
9	9	3851 NHB1		1 NEW HAVEN HARBOR	389	18.51	312	19105.66	71
9	11	1505	5	1 MONTVILLE	249	11.28	300	5995.98	60
9	11	1505	6	2 MONTVILLE	390	18.02	580	27543.82	108
10	1	2	3	2 MCKEE RUN	200	10.52	298	5736.76	66
10	1	7	1	1 KRAFT GENERAL FOODS	213	3.28	300	693.38	82.06
10	3	7	3	2 EDGE MOOR	220	11.99	300	4177.64	37
10	3	7	4	1 EDGE MOOR	220	11.99	251	8129.46	72
10	3	7	5	3 EDGE MOOR	275	19.02	282	18468.23	65
10	3	10	9	9 DUPONT EDGE MOOR	154	3.28	86	804.32	95.19
10	3	16	2	1 STAR ENTERPRISE,DELAWARE C	249	13.12	556	10207.17	75.5
10	3	16	11	11 STAR ENTERPRISE,DELAWARE C	350	15	850	22266.09	126
10	3	16	12	12 STAR ENTERPRISE,DELAWARE C	351	16.4	851	26350.23	124.74
10	3	32	11	11 GENERAL CHEMICAL CORPORAT	200	7	180	1308.48	34
10	5	1	1	3 INDIAN RIVER	500	10.52	289	7909.77	91
10	5	1	2	3 INDIAN RIVER	500	10.52	289	7909.77	91
10	5	1	3	1 INDIAN RIVER	385	13.49	280	9004.41	63
10	5	1	4	2 INDIAN RIVER	400	23.99	315	30284.9	67
10	5	2	1	1 DUPONT SEAFORD	249	13.12	350	3106.77	22.98
10	5	2	2	2 DUPONT SEAFORD	249	13.12	350	3106.77	22.98
10	5	2	3	3 DUPONT SEAFORD	249	13.12	350	3106.77	22.98
12	1	6 B2		2 DEERHAVEN	350	18.51	336	16683.82	62
12	5	9	1	1 STONE CONTAINER CORPORATI	230	9.1	325	5001.5	76.9

12	5	9	16	16 STONE CONTAINER CORPORATI	206	7.8	125	3918.27	82
12	5	9	19	19 STONE CONTAINER CORPORATI	230	9.1	325	4942.96	76
12	5	643	1	1 SMITH	200	18.02	263	16577.3	65
12	5	643	2	1 SMITH	200	18.02	263	16577.3	65
12	9	6 PCC1		2 CAPE CANAVERAL	397	18.58	275	15996.84	59
12	9	6 PCC2		1 CAPE CANAVERAL	397	18.09	275	15421.24	60
12	9	8	2	2 INDIAN RIVER	300	14	220	12007.2	78
12	9	8	3	1 INDIAN RIVER	300	14	215	14162.33	92
12	11	36 PPE1		2 PORT EVERGLADES	344	14	290	9236.3	60
12	11	36 PPE2		2 PORT EVERGLADES	344	14	290	9236.3	60
12	11	36 PPE3		1 PORT EVERGLADES	343	18.09	275	16192.3	63
12	11	36 PPE4		1 PORT EVERGLADES	343	18.09	275	16192.3	63
12	17	4	1	1 CRYSTAL RIVER	499	15.01	292	23534.44	133
12	17	4	2	2 CRYSTAL RIVER	503	16	300	32169.98	160
12	17	4	4	3 CRYSTAL RIVER	600	25.53	253	35321.7	69
12	17	4	5	3 CRYSTAL RIVER	600	25.53	253	35321.7	69
12	25	3 PTP1		1 TURKEY POINT	400	18.09	275	16192.3	63
12	25	3 PTP2		1 TURKEY POINT	400	18.09	275	16192.3	63
12	25	14	8	8 RINKER MATERIALS CORP.-CEME	137	15	260	4417.88	25
12	25	20	6	6 TARMAC FLORIDA	200	14	408	5541.78	36
12	31	1	1	1 ST JOHNS RIVER POWER	640	22.51	140	35816.6	90
12	31	1	2	1 ST JOHNS RIVER POWER	640	22.51	140	35816.6	90
12	31	3	5	5 JEFFERSON SMURFIT CORP (U.S	175	10.5	278	6494.28	75
12	31	45	1	1 NORTHSIDE	240	16.51	262	14129.57	66
12	31	45	3	2 NORTHSIDE	340	22.99	330	26152.27	63
12	33	45	4	1 CRIST	450	17.98	289	13456.93	53
12	33	45	5	1 CRIST	450	17.98	289	13456.93	53
12	33	45	6	2 CRIST	450	23.15	268	40828.61	97
12	33	45	7	2 CRIST	450	23.15	268	40828.61	97
12	45	5	25	25 FLORIDA COAST PAPER COMPAN	170	14	158	5079.97	33
12	47	2	21	21 WHITE SPRINGS AGRICULTURAL	150	9	175	1844.9	29
12	47	2	22	22 WHITE SPRINGS AGRICULTURAL	150	9	175	1844.9	29
12	47	5	3	3 WHITE SPRINGS AGRICULTURAL	200	9.5	156	2126.47	30
12	47	5	4	4 WHITE SPRINGS AGRICULTURAL	200	9.5	156	2055.59	29
12	51	1	2	2 EVERGLADES SUGAR REFINERY	72	3.5	400	317.5	33
12	53	10	3	3 SOUTHDOWN, INC.	150	13	285	4512.91	34
12	53	32	14	14 CENTRAL POWER & LIME, INC.	320	16	250	13993.94	69.6

12	57	5	2	2 CF INDUSTRIES, INC., PLANT CIT'	110	5	110	1256.64	64
12	57	5	3	3 CF INDUSTRIES, INC., PLANT CIT'	110	5	110	1256.64	64
12	57	5	7	7 CF INDUSTRIES, INC., PLANT CIT'	199	8	175	2664.08	53
12	57	8	4	4 CARGILL FERTILIZER, INC.	150	7.5	153	1943.87	44
12	57	8	5	5 CARGILL FERTILIZER, INC.	150	8	152	1709.03	34
12	57	8	6	6 CARGILL FERTILIZER, INC.	150	9	170	2646.48	41.6
12	57	39 BB01		3 BIG BEND	490	23.99	300	42489.27	94
12	57	39 BB02		3 BIG BEND	490	23.99	300	42489.27	94
12	57	39 BB03		2 BIG BEND	490	23.99	292	21244.63	47
12	57	39 BB04		1 BIG BEND	490	23.99	156	29380.88	65
12	57	40 GB01		2 F J GANNON	306	10.4	309	6710.96	79
12	57	40 GB02		2 F J GANNON	306	10.4	309	6710.96	79
12	57	40 GB03		4 F J GANNON	306	11	300	9408.31	99
12	57	40 GB04		1 F J GANNON	306	10.03	329	5688.86	72
12	57	40 GB05		3 F J GANNON	306	10.82	288	11309.69	123
12	57	40 GB06		5 F J GANNON	306	17.48	292	18478.4	77
12	57	57	1	1 GULF COAST RECYCLING, INC.	150	3	160	387.36	54.8
12	63	14	1	1 SCHOLZ	494	18.32	270	20600.17	78.15
12	63	14	2	1 SCHOLZ	494	18.32	270	20600.17	78.15
12	71	2 PFM1		1 FORT MYERS	302	9.51	300	6961.1	98
12	71	2 PFM2		2 FORT MYERS	407	18.05	275	16120.77	63
12	81	10 PMT1		1 MANATEE	499	26.17	307	30122.18	56
12	81	10 PMT2		1 MANATEE	499	26.17	307	30122.18	56
12	85	1 PMR1		1 MARTIN	499	26.17	298	30122.18	56
12	85	1 PMR2		1 MARTIN	499	26.17	298	30122.18	56
12	89	3	6	6 JEFFERSON SMURFIT CORPORA	257	11	358	4751.67	50
12	89	3	7	7 JEFFERSON SMURFIT CORPORA	265	11.5	428	6336.02	61
12	89	3	11	11 JEFFERSON SMURFIT CORPORA	289	12.7	411	7853.98	62
12	89	3	15	15 JEFFERSON SMURFIT CORPORA	340	14.8	335	7225.43	42
12	89	4	6	6 RAYONIER INC.	264	7.33	126	2666.96	63.2
12	95	137	1	1 STANTON ENERGY	550	19.02	127	23582.51	83
12	95	137	2	1 STANTON ENERGY	550	19.02	127	23582.51	83
12	99	26	4	4 SUGAR CANE GROWERS CO-OP	110	9.5	148	1913.82	27
12	99	42 PRV3		2 RIVIERA	298	16	275	12465.87	62
12	99	42 PRV4		1 RIVIERA	275	16	275	12465.87	62
12	101	17	1	1 ANCLOTE	499	23.99	285	47009.4	104
12	101	17	2	1 ANCLOTE	499	23.99	285	47009.4	104

12	103	11	1	1 P L BARTOW	300	9.03	300	5891.88	92
12	103	11	2	1 P L BARTOW	300	9.03	300	5891.88	92
12	103	11	3	2 P L BARTOW	300	11	300	10453.67	110
12	105	4	1	1 C D MCINTOSH JR	150	9.03	280	4931.25	77
12	105	4	3	3 C D MCINTOSH JR	250	16	170	17693.49	88
12	105	46	12	12 CARGILL FERTILIZER, INC.	200	6.8	180	2215.33	61
12	105	46	32	32 CARGILL FERTILIZER, INC.	200	6.8	180	2215.33	61
12	105	46	33	33 CARGILL FERTILIZER, INC.	200	6.8	180	2215.33	61
12	105	48	2	2 MULBERRY PHOSPHATES, INC.	200	7	200	1231.51	32
12	105	51	16	16 U.S. AGRI-CHEMICALS CORPORA	175	8.5	180	1815.84	32
12	105	51	17	17 U.S. AGRI-CHEMICALS CORPORA	175	8.5	180	1815.84	32
12	105	53	3	3 FARMLAND HYDRO, L.P.	100	7.5	170	1237.01	28
12	105	53	4	4 FARMLAND HYDRO, L.P.	100	7.5	174	1369.54	31
12	105	53	5	5 FARMLAND HYDRO, L.P.	150	8	180	1910.09	38
12	105	55	4	4 IMC-AGRICO CO.	150	5.1	170	2614.82	128
12	105	55	5	5 IMC-AGRICO CO.	150	5.1	170	2614.82	128
12	105	59	2	2 IMC-AGRICO CO.(NEW WALES)	200	8.5	170	2837.26	50
12	105	59	3	3 IMC-AGRICO CO.(NEW WALES)	200	8.5	170	2837.26	50
12	105	59	4	4 IMC-AGRICO CO.(NEW WALES)	200	8.5	170	2837.26	50
12	105	59	42	42 IMC-AGRICO CO.(NEW WALES)	199	8.5	170	2837.26	50
12	105	59	44	44 IMC-AGRICO CO.(NEW WALES)	199	8.5	170	2837.26	50
12	107	5	14	14 GEORGIA-PACIFIC CORP. PULP	122	4	395	590.62	47
12	107	5	15	15 GEORGIA-PACIFIC CORP. PULP	237	9	445	3817.04	60
12	107	5	16	16 GEORGIA-PACIFIC CORP. PULP	237	7.1	440	3602.87	91
12	107	5	32	32 GEORGIA-PACIFIC CORP. PULP	250	3.2	500	683.61	85
12	107	25	1	1 SEMINOLE	675	35.98	125	35586.17	35
12	107	25	2	1 SEMINOLE	675	35.98	125	35586.17	35
12	113	5	1	1 EXXON CO., USA (A DIV. OF EXXC	250	2.5	1040	476.15	97
12	113	5	4	4 EXXON CO., USA (A DIV. OF EXXC	250	2.5	1060	436.88	89
12	121	3	1	1 SUWANNEE RIVER	110	6.96	315	1978.39	52
12	121	3	2	2 SUWANNEE RIVER	110	6.96	330	1978.39	52
12	121	3	3	3 SUWANNEE RIVER	135	7.65	310	4458.47	97
12	123	1	4	4 BUCKEYE FLORIDA, LIMITED PAR	225	13	190	7963.96	60
12	123	1	11	11 BUCKEYE FLORIDA, LIMITED PAR	225	9.5	438	5528.82	78
12	127	9 PSN3		1 SANFORD	302	9.51	275	6961.1	98
12	127	9 PSN4		2 SANFORD	400	19.18	275	16179.91	56
12	127	9 PSN5		2 SANFORD	400	19.18	275	16179.91	56

13	15	8	4	2 CHEMICAL PRODUCTS CORP	195	5	400	452.98	23.07
13	15	11 1BLR		1 BOWEN	1000	24.98	266	33326.11	68
13	15	11 2BLR		1 BOWEN	1000	24.98	266	33326.11	68
13	15	11 3BLR		2 BOWEN	1000	24.98	278	43618	89
13	15	11 4BLR		2 BOWEN	1000	24.98	278	43618	89
13	21	1	12	6 RIVERWOOD INTERNATIONAL	300	10	130	2763.04	35.18
13	21	1	13	6 RIVERWOOD INTERNATIONAL	300	10	130	2763.04	35.18
13	21	2	1	1 ARKWRIGHT	586	19.99	357	17889.22	57
13	21	2	2	1 ARKWRIGHT	586	19.99	357	17889.22	57
13	21	2	3	1 ARKWRIGHT	586	19.99	357	17889.22	57
13	21	2	4	1 ARKWRIGHT	586	19.99	357	17889.22	57
13	39	1	3	1 GILMAN PAPER CO ST MARYS KF	275	7	400	1159.54	30.13
13	39	1	8	5 GILMAN PAPER CO ST MARYS KF	250	8.5	360	2870.74	50.59
13	39	1	10	7 GILMAN PAPER CO ST MARYS KF	100	5	168	993.33	50.59
13	51	6	1	1 KRAFT	275	22	285	17486.15	46
13	51	6	2	1 KRAFT	275	22	285	17486.15	46
13	51	6	3	1 KRAFT	275	22	285	17486.15	46
13	51	6	4	1 KRAFT	275	22	285	17486.15	46
13	51	7	14	6 UNION CAMP CORP	306	12.7	270	6408.6	50.59
13	51	7	21	13 UNION CAMP CORP	350	11.5	320	3654.12	35.18
13	51	10	5	1 STONE CONTAINER CORP	250	15	300	6216.83	35.18
13	51	10	7	1 STONE CONTAINER CORP	250	15	300	6216.83	35.18
13	51	10	11	4 STONE CONTAINER CORP	317	13.8	330	7566.83	50.59
13	67	3 MB1		1 JACK McDONOUGH	836	24.46	270	35242.37	75
13	67	3 MB2		1 JACK McDONOUGH	836	24.46	270	35242.37	75
13	67	22	1	1 CARAUSTAR INDUSTRIES INC	141	5.58	275	1490.99	60.97
13	77	1 Y2BR		4 YATES	830	16.43	260	15265.06	72
13	77	1 Y3BR		4 YATES	830	16.43	260	15265.06	72
13	77	1 Y4BR		3 YATES	830	14.58	285	11353.11	68
13	77	1 Y5BR		3 YATES	830	14.58	285	11353.11	68
13	77	1 Y6BR		2 YATES	805	16.35	279	17636.23	84
13	77	1 Y7BR		1 YATES	805	15.8	279	16469.65	84
13	95	2	3	1 MITCHELL	500	20.99	300	11073.01	32
13	99	1	1	1 GREAT SOUTHERN PAPER WOOL	200	12	272	5721.61	50.59
13	99	1	2	2 GREAT SOUTHERN PAPER WOOL	200	12	312	5721.61	50.59
13	99	1	9	7 GREAT SOUTHERN PAPER WOOL	200	12	390	3978.77	35.18
13	99	1	10	8 GREAT SOUTHERN PAPER WOOL	200	12	390	3978.77	35.18

13	99	1	11	9 GREAT SOUTHERN PAPER WOO	248	19	350	14343.75	50.59
13	103	3	1	1 MCINTOSH	400	11.51	307	8219.94	79
13	115	3	1	1 HAMMOND	750	20.99	297	19723.8	57
13	115	3	2	1 HAMMOND	750	20.99	297	19723.8	57
13	115	3	3	1 HAMMOND	750	20.99	297	19723.8	57
13	115	3	4	2 HAMMOND	750	22	314	31551.09	83
13	115	21	1	1 INLAND-ROME INC	211	14.1	300	7899.39	50.59
13	115	21	2	2 INLAND-ROME INC	220	9	300	3218.4	50.59
13	115	21	7	7 INLAND-ROME INC	227	8.5	337	2870.74	50.59
13	115	21	20	10 INLAND-ROME INC	180	12	380	3978.77	35.18
13	121	401	1	1 BLUE CIRCLE CEMENT INC	80	5.4	270	1096.1	47.86
13	121	401	2	2 BLUE CIRCLE CEMENT INC	80	5	270	822.9	41.91
13	121	401	2	4 BLUE CIRCLE CEMENT INC	79	7.22	269	1611.05	39.35
13	127	3	1	1 BRUNSWICK PULP & PAPER CO	278	12	275	5721.61	50.59
13	127	3	2	2 BRUNSWICK PULP & PAPER CO	278	18.3	400	13306.31	50.59
13	127	3	14	8 BRUNSWICK PULP & PAPER CO	181	12	350	3407.63	30.13
13	127	4	1	1 MCMANUS	185	9.1	300	260.16	4
13	127	4	2	1 MCMANUS	185	9.1	300	260.16	4
13	149	1	1	2 WANSLEY	1000	25	315	32888.63	67
13	149	1	2	1 WANSLEY	1000	25	315	32397.75	66
13	153	3	6	4 MEDUSA CEMENT CO	209	7	230	1841.87	47.86
13	175	4	1	1 SOUTHEAST PAPER MANUFACTL	155	10	280	2763.04	35.18
13	185	1	13	9 TENNECO PACKAGING INC	112	5	350	591.6	30.13
13	193	8	1	1 C-E MINERALS PLT 5	100	8	230	722.32	14.37
13	207	8	1	2 SCHERER	1000	26.99	278	43482.07	76
13	207	8	2	2 SCHERER	1000	26.99	278	43482.07	76
13	207	8	3	1 SCHERER	1000	26.99	262	45198.47	79
13	207	8	4	1 SCHERER	1000	26.99	262	45198.47	79
13	237	8	1	1 HARLLEE BRANCH	1000	22.51	250	32632.91	82
13	237	8	2	1 HARLLEE BRANCH	1000	22.51	250	32632.91	82
13	237	8	3	2 HARLLEE BRANCH	1000	29.01	260	50895.23	77
13	237	8	4	2 HARLLEE BRANCH	1000	29.01	260	50895.23	77
13	245	5	20	20 THERMAL CERAMICS INC	178	11	150	1871.21	19.69
13	245	5	25	20 THERMAL CERAMICS INC	178	11	150	1871.21	19.69
13	245	5	26	20 THERMAL CERAMICS INC	178	11	150	1871.21	19.69
13	245	6	7	7 INTERNATIONAL PAPER CO	199	17.5	385	7247.13	30.13
13	245	6	8	7 INTERNATIONAL PAPER CO	199	17.5	385	7247.13	30.13

13	245	62	2	2 AUGUSTA NEWSPRINT CO	140	10	154	2366.41	30.13
13	305	1	17	13 ITT RAYONIER INC	258	8	450	1514.5	30.13
13	305	1	22	16 ITT RAYONIER INC	260	18	380	12873.62	50.59
15	1	22	1	1 HILO COAST PROCESSNG	29	3.45	86	517.24	55.33
15	1	7130	1	1 PUNA	241	13.88	310	9456.92	62.5
15	1	772	5	1 W H HILL	241	13.88	310	9456.92	62.5
15	1	772	6	1 W H HILL	241	13.88	310	9456.92	62.5
15	3	100	1	0 KALAELOA COGENERATION FACI	32	2.26	552	346.88	86.47
15	3	100	1	1 KALAELOA COGENERATION FACI	10	0.5	552	16.98	86.47
15	3	100	2	0 KALAELOA COGENERATION FACI	32	2.26	552	346.88	86.47
15	3	100	2	2 KALAELOA COGENERATION FACI	10	0.5	552	16.98	86.47
15	3	503	18	18 CHEVRON USA (REFINERY)	94	6.96	480	2269.45	59.65
15	3	765	1	2 KAHE	300	10.52	260	3563.74	41
15	3	765	2	2 KAHE	300	10.52	260	3563.74	41
15	3	765	3	1 KAHE	300	10.52	254	3476.82	40
15	3	765	4	1 KAHE	300	10.52	254	3476.82	40
15	3	765	5	3 KAHE	304	16.16	259	5537.8	27
15	3	765	6	4 KAHE	450	16.51	259	5566.19	26
15	3	766	7	3 WAIAU	138	10.34	254	3358.86	40
15	3	766	8	3 WAIAU	138	10.34	254	3358.86	40
15	9	1	1	1 HAWAIIAN COMMERCIAL & SUGA	150	5.18	413	634.96	30.13
15	9	1	3	2 HAWAIIAN COMMERCIAL & SUGA	128	5.18	413	634.96	30.13
15	9	6056 K3		1 KAHULUI	241	13.88	310	9456.92	62.5
15	9	6056 K4		1 KAHULUI	241	13.88	310	9456.92	62.5
16	27	10	3.1E+08	3.1E+08 AMALGAMATED SUGAR BX250 N/A	100	7	310	1691.78	43.96
16	29	1	2.3E+08	2.3E+08 MONSANTO BOX816 SODASPRIN	100	20	140	5500.94	17.51
16	29	3	7.3E+08	7.3E+08 BEKER INDUSTRIES BX37 CONDA	105	8	180	1517.02	30.18
16	29	3	8.3E+08	8.3E+08 BEKER INDUSTRIES BX37 CONDA	105	8	170	1327.51	26.41
16	69	1	1.33E+09	1.33E+09 POTLATCH CORP BX1010 LEWIST	325	9	372	2357.02	37.05
16	77	5	1.31E+08	1.31E+08 FMC CORP BX411 POCATELLO ID	101	7	130	2802.83	72.83
16	77	5	2.31E+08	2.31E+08 FMC CORP BX411 POCATELLO ID	101	7	130	2493.8	64.8
16	77	5	6.31E+08	6.31E+08 FMC CORP BX411 POCATELLO ID	101	7	130	2551.53	66.3
16	77	5	7.31E+08	7.31E+08 FMC CORP BX411 POCATELLO ID	101	7	130	2590.4	67.31
16	77	6	2.83E+09	2.83E+09 JRSIMPLLOT BOX912 POCATELLO	106	6	110	83.41	2.95
16	77	6	2.93E+09	2.93E+09 JRSIMPLLOT BOX912 POCATELLO	202	6	145	85.39	3.02
17	1	8	1	1 ILLINOIS VETERANS HOME	155	8.5	350	1129.23	19.9
17	1	9	1	1 THE CELOTEX CORPORATION	126	5.9	398	642.48	23.5

17	1	9	2	2 THE CELOTEX CORPORATION	126	5.9	398	642.48	23.5
17	19	118	3	3 VILLAGE OF RANTOUL- CHANUTE	150	7	400	1816.47	47.2
17	19	118	4	3 VILLAGE OF RANTOUL- CHANUTE	150	7	400	1816.47	47.2
17	21	48	1	1 KINCAID	615	29.58	315	82464.78	120
17	21	48	2	1 KINCAID	615	29.58	315	82464.78	120
17	31	78	41	44 BEST FOODS - DIV. OF C P C INT'L	249	11	350	2347.32	24.7
17	31	78	42	44 BEST FOODS - DIV. OF C P C INT'L	249	11	350	2347.32	24.7
17	31	78	45	46 BEST FOODS - DIV. OF C P C INT'L	249	11	350	1938.68	20.4
17	31	603	1	1 VULCAN MATLS-LIME PLANT #540	70	6.3	450	997.52	32
17	31	823	23	0 ACME STEEL COMPANY	68	4.27	396	390.51	27.27
17	31	823	71	57 ACME STEEL COMPANY	200	6	430	4747.27	167.9
17	31	823	94	68 ACME STEEL COMPANY	250	7	483	1181.48	30.7
17	31	823	155	126 ACME STEEL COMPANY	131	3	400	1205.9	170.6
17	31	823	157	128 ACME STEEL COMPANY	131	3	400	1205.9	170.6
17	31	823	159	130 ACME STEEL COMPANY	131	3	400	1205.9	170.6
17	31	823	161	132 ACME STEEL COMPANY	131	3	400	1205.9	170.6
17	31	823	163	134 ACME STEEL COMPANY	131	3	400	1205.9	170.6
17	31	1216	7	2 CRAWFORD	388	10.28	289	11619.97	140
17	31	1216	8	1 CRAWFORD	378	11.83	300	15827.88	144
17	31	1221	94	74 LTV STEEL COMPANY, INC. (REPL	69	12	400	2499.46	22.1
17	31	1223	19	1 FISK	446	14	340	17702.92	115
17	31	2448	23	30 CLARK OIL & REFINING CORPOR	77	3.5	100	1029.46	107
17	31	2448	26	33 CLARK OIL & REFINING CORPOR	77	3.5	100	724.47	75.3
17	31	2448	41	22 CLARK OIL & REFINING CORPOR	186	4.5	675	1905.02	119.78
17	33	15	5	1 HUTSONVILLE	197	10.82	300	5057.18	55
17	33	15	6	1 HUTSONVILLE	197	10.82	300	5057.18	55
17	33	26	2	2 MARATHON OIL CO ILLINOIS REF	190	12.3	200	5251.98	44.2
17	33	26	54	48 MARATHON OIL CO ILLINOIS REF	160	4	1200	1133.49	90.2
17	41	28	109	47 MILLENNIUM PETROCHEMICAL	190	16	381	9992.8	49.7
17	41	28	110	47 MILLENNIUM PETROCHEMICAL	190	16	381	9992.8	49.7
17	57	35	1	1 DUCK CREEK	500	18.98	125	19805.3	70
17	63	36	3	2 COLLINS	400	28.01	288	93045.22	151
17	63	36	4	1 COLLINS	400	23.99	291	59665.78	132
17	63	36	5	1 COLLINS	400	23.99	291	59665.78	132
17	77	28	1	1 SOUTHERN ILLINOIS UNIVERSITY	175	10	399	1665.05	21.2
17	77	28	2	1 SOUTHERN ILLINOIS UNIVERSITY	175	10	399	1665.05	21.2
17	77	28	3	1 SOUTHERN ILLINOIS UNIVERSITY	175	10	399	1665.05	21.2

17	77	28	4	1 SOUTHERN ILLINOIS UNIVERSITY	175	10	399	1665.05	21.2
17	77	39	7	1 GRAND TOWER	200	8.29	325	2482.89	46
17	77	39	8	1 GRAND TOWER	200	8.29	325	2482.89	46
17	77	39	9	2 GRAND TOWER	251	11.45	268	6281.04	61
17	79	11	1	2 NEWTON	530	20.99	325	38063.48	110
17	79	11	2	1 NEWTON	530	19.99	325	41113.82	131
17	97	102	17	1 WAUKEGAN	330	11.51	350	7179.44	69
17	97	102	7	3 WAUKEGAN	450	14.09	300	18554.95	119
17	97	102	8	2 WAUKEGAN	450	13.49	300	17437.11	122
17	99	13	7	7 ILLINOIS CEMENT CO	48	8.3	263	4252.75	78.6
17	101	15	15	10 AMERICAN WESTERN REFINING I	90	10	350	1484.41	18.9
17	101	15	16	11 AMERICAN WESTERN REFINING I	90	10	350	1484.41	18.9
17	101	15	17	12 AMERICAN WESTERN REFINING I	90	10	350	1484.41	18.9
17	101	15	22	17 AMERICAN WESTERN REFINING I	200	13	300	4247.44	32
17	101	15	72	47 AMERICAN WESTERN REFINING I	112	11	705	2706.55	28.48
17	103	31	16	12 DIXON-MARQUETTE CEMENT INC	300	9	500	3594.38	56.5
17	107	39	4	4 LOGAN CORRECTION CENTER	60	3	525	394.43	55.8
17	109	18	16	17 WESTERN ILLINOIS UNIVERSITY	163	3	570	234.68	33.2
17	115	5	81	77 ARCHER DANIELS MIDLAND CO E	324	15.5	320	2509.61	13.3
17	115	7	3	3 CATERPILLAR, INC. - DECATUR P	135	5.1	332	1805.86	88.4
17	115	18	299	292 A E STALEY MANUFACTURING CO	300	8	280	2834.98	56.4
17	119	5	1	1 JEFFERSON SMURFIT CORPORA	192	8.8	376	3193.12	52.5
17	119	5	2	2 JEFFERSON SMURFIT CORPORA	192	4.6	428	1442.53	86.8
17	119	16	4	1 WOOD RIVER	250	17	300	5447.53	24
17	119	16	5	2 WOOD RIVER	350	15.05	292	18323.19	103
17	119	69	43	35 CLARK OIL & REFINING CORP	194	3.8	600	2068.63	182.4
17	119	69	45	37 CLARK OIL & REFINING CORP	180	8.5	550	1651.28	29.1
17	119	104	4	4 SHELL OIL CO WOOD RIVER MFG	350	15	390	8252.59	46.7
17	119	104	5	4 SHELL OIL CO WOOD RIVER MFG	350	15	390	8252.59	46.7
17	119	104	14	8 SHELL OIL CO WOOD RIVER MFG	350	15	750	8252.59	46.7
17	119	104	17	11 SHELL OIL CO WOOD RIVER MFG	100	7	1050	1250.75	32.5
17	119	104	18	12 SHELL OIL CO WOOD RIVER MFG	150	7.1	800	1041.27	26.3
17	119	104	24	18 SHELL OIL CO WOOD RIVER MFG	150	6.2	320	1092.91	36.2
17	119	104	25	19 SHELL OIL CO WOOD RIVER MFG	185	7.7	319	1746.24	37.5
17	119	104	28	22 SHELL OIL CO WOOD RIVER MFG	312	14	390	6111.35	39.7
17	119	104	29	22 SHELL OIL CO WOOD RIVER MFG	312	14	390	6111.35	39.7
17	119	104	30	22 SHELL OIL CO WOOD RIVER MFG	312	14	390	6111.35	39.7

17	119	104	31	22 SHELL OIL CO WOOD RIVER MFG	312	14	390	6111.35	39.7
17	119	104	34	25 SHELL OIL CO WOOD RIVER MFG	150	5.7	710	747.67	29.3
17	119	104	36	27 SHELL OIL CO WOOD RIVER MFG	85	7.2	800	899.8	22.1
17	119	104	39	30 SHELL OIL CO WOOD RIVER MFG	185	6.8	675	1078.61	29.7
17	119	104	43	34 SHELL OIL CO WOOD RIVER MFG	200	10.5	500	3584.84	41.4
17	119	104	47	37 SHELL OIL CO WOOD RIVER MFG	200	10.5	500	3584.84	41.4
17	119	104	79	67 SHELL OIL CO WOOD RIVER MFG	207	10	450	1704.32	21.7
17	119	104	80	68 SHELL OIL CO WOOD RIVER MFG	132	6.8	425	1659.68	45.7
17	119	104	81	69 SHELL OIL CO WOOD RIVER MFG	132	6.8	425	1659.68	45.7
17	119	104	82	70 SHELL OIL CO WOOD RIVER MFG	150	10.8	317	4094.92	44.7
17	119	104	88	76 SHELL OIL CO WOOD RIVER MFG	149	5.5	900	829.17	34.9
17	119	104	91	79 SHELL OIL CO WOOD RIVER MFG	150	7.8	800	1371.39	28.7
17	119	104	92	80 SHELL OIL CO WOOD RIVER MFG	150	7.8	750	1285.38	26.9
17	119	104	93	81 SHELL OIL CO WOOD RIVER MFG	150	5.8	750	668.45	25.3
17	119	104	95	83 SHELL OIL CO WOOD RIVER MFG	154	5	1050	1229.15	62.6
17	119	104	126	103 SHELL OIL CO WOOD RIVER MFG	125	7.2	966	1881.04	46.2
17	119	153	57	71 NATIONAL STEEL CORP - GRANIT	250	9	396	1043.33	16.4
17	119	153	79	92 NATIONAL STEEL CORP - GRANIT	250	9	396	1036.96	16.3
17	123	18	16	15 B F GOODRICH CHEMICAL CO	45	2.04	184	75.4	23.07
17	125	24	9	1 HAVANA	500	19.99	331	25421.52	81
17	127	12	15	19 LAFARGE CORPORATION	85	7.4	590	2042.9	47.5
17	127	12	20	29 LAFARGE CORPORATION	150	12	623	4263.78	37.7
17	127	14	1	1 JOPPA STEAM	550	17.98	320	22343.59	88
17	127	14	2	1 JOPPA STEAM	550	17.98	320	22343.59	88
17	127	14	3	1 JOPPA STEAM	550	17.98	320	22343.59	88
17	127	14	4	1 JOPPA STEAM	550	17.98	320	22343.59	88
17	127	14	5	1 JOPPA STEAM	550	17.98	320	22343.59	88
17	127	14	6	1 JOPPA STEAM	550	17.98	320	22343.59	88
17	135	38	1	1 COFFEEN	500	29.01	320	60809.88	92
17	135	38	2	1 COFFEEN	500	29.01	320	60809.88	92
17	137	32	1	3 MEREDOSIA	525	14	390	10467.81	68
17	137	32	2	3 MEREDOSIA	525	14	390	10467.81	68
17	137	32	3	3 MEREDOSIA	525	14	390	10467.81	68
17	137	32	4	3 MEREDOSIA	525	14	390	10467.81	68
17	137	32	5	2 MEREDOSIA	300	11.99	290	15242.74	135
17	143	41	16	15 ARCHER DANIELS MIDLAND - COI	232	12.2	360	1098.85	9.4
17	143	41	17	15 ARCHER DANIELS MIDLAND - COI	232	12.2	360	1098.85	9.4

17	143	126	1	0 SHEREX CHEMICAL COMPANY	165	7.08	387	1385.01	35.18
17	143	130	1	1 E D EDWARDS	503	20.99	300	16955.55	49
17	143	130	2	1 E D EDWARDS	503	20.99	300	16955.55	49
17	143	130	3	2 E D EDWARDS	503	25	285	20125.88	41
17	149	29 1A		1 PEARL STATION	494	18.32	270	20600.17	78.15
17	155	2	1	1 HENNEPIN	275	14.49	288	14676.34	89
17	155	2	2	1 HENNEPIN	275	14.49	288	14676.34	89
17	155	10	2	2 EXOLON-ESK COMPANY	53	4.7	883	988.92	57
17	155	10	3	3 EXOLON-ESK COMPANY	53	4.7	883	988.92	57
17	155	10	4	4 EXOLON-ESK COMPANY	53	4.7	883	988.92	57
17	157	33	1	3 BALDWIN	605	19.58	300	28905.97	96
17	157	33	2	2 BALDWIN	605	19.51	300	28699.65	96
17	157	33	3	1 BALDWIN	605	19.51	268	31988.16	107
17	157	36	1	1 MENARD CORRECTIONAL CENTE	180	9.5	500	262.26	3.7
17	161	6	18	15 DEERE & CO - HARVESTER WORI	105	9	475	2970.93	46.7
17	161	58	49	22 ROCK ISLAND ARSENAL	120	6	300	715.34	25.3
17	163	95	9	9 SOUTIA - MONSANTO	130	10	338	2238.39	28.5
17	163	100	2	2 BIG RIVER ZINC CORPORATION	150	5	180	628.32	32
17	167	11	31	2 DALLMAN	451	10.03	320	5925.9	75
17	167	11	32	2 DALLMAN	451	10.03	320	5925.9	75
17	167	11	33	3 DALLMAN	500	14.97	140	11440.58	65
17	167	11	7	1 LAKESIDE	438	15.31	286	15533.91	84.38
17	167	11	8	1 LAKESIDE	438	15.31	286	15533.91	84.38
17	179	44	19	37 PEKIN ENERGY COMPANY	200	6	603	2587.11	91.5
17	179	44	20	20 PEKIN ENERGY COMPANY	200	10	324	1971.35	25.1
17	179	44	21	20 PEKIN ENERGY COMPANY	200	10	324	1971.35	25.1
17	179	53	51	1 POWERTON	500	34	300	100779.4	111
17	179	53	52	1 POWERTON	500	34	300	100779.4	111
17	179	53	61	1 POWERTON	500	34	300	100779.4	111
17	179	53	62	1 POWERTON	500	34	300	100779.4	111
17	181	8	1	1 CLYDE L. CHOATE MENTAL HEAL	70	3	520	184.49	26.1
17	183	10	144	143 LAUHOFF GRAIN COMPANY	247	6.2	275	1560.86	51.7
17	197	77	3	3 CITGO PETROLEUM CORPORATI	245	7.9	450	1475.41	30.1
17	197	77	4	4 CITGO PETROLEUM CORPORATI	245	7.9	450	1475.41	30.1
17	197	77	7	6 CITGO PETROLEUM CORPORATI	200	10.5	450	6277.8	72.5
17	197	77	22	14 CITGO PETROLEUM CORPORATI	250	2.2	1000	246.71	64.9
17	197	77	38	24 CITGO PETROLEUM CORPORATI	134	6.94	480	1202.16	31.78

17	197	89	4	4 MOBIL JOLIET REFINING CORP	112	11	705	2706.55	28.48
17	197	89	13	9 MOBIL JOLIET REFINING CORP	250	6	1200	1275.18	45.1
17	197	89	15	10 MOBIL JOLIET REFINING CORP	200	12.7	335	6270.52	49.5
17	197	89	18	13 MOBIL JOLIET REFINING CORP	175	10.3	345	2116.41	25.4
17	197	116	1	1 UNOCAL DIVERSIFIED BUSINESS	100	8	490	2081	41.4
17	197	143	5	1 JOLIET 9	450	14	300	19858.05	129
17	197	160	71	1 JOLIET 29	550	17.41	291	28567.33	120
17	197	160	72	1 JOLIET 29	550	17.41	291	28567.33	120
17	197	160	81	1 JOLIET 29	550	17.41	291	28567.33	120
17	197	160	82	1 JOLIET 29	550	17.41	291	28567.33	120
17	197	166	1	1 WILL COUNTY	349	13.01	342	12894.88	97
17	197	166	2	1 WILL COUNTY	349	13.01	342	12894.88	97
17	197	166	3	2 WILL COUNTY	448	14.84	300	16604.66	96
17	197	166	4	3 WILL COUNTY	500	16.51	290	25904.21	121
17	199	20	1	2 MARION	210	13.49	300	5860.01	41
17	199	20	2	2 MARION	210	13.49	300	5860.01	41
17	199	20	3	1 MARION	210	13.49	300	3001.47	21
17	199	20	4	3 MARION	400	15.01	129	11501.8	65
18	1	5	30	11 CENTRAL SOYA COMPANY INC	184	10	340	589.05	7.5
18	17	5	401	1 ESSROC LOGANSPORT CORP.DI'	200	15.6	460	2450.35	12.82
18	17	5	413	1 ESSROC LOGANSPORT CORP.DI'	200	15.6	460	2450.35	12.82
18	17	6	5	1 LOGANSPORT	494	18.32	270	20600.17	78.15
18	17	6	6	1 LOGANSPORT	494	18.32	270	20600.17	78.15
18	19	8	11	14 ESSROC MATERIALS	120	8	350	3668.38	72.98
18	19	8	12	15 ESSROC MATERIALS	110	9.04	205	4001.88	62.35
18	23	20	4	3 FRITO-LAY, INC.	96	2	378	505.92	161.04
18	29	2 U1		1 TANNERS CREEK	400	23.43	340	37079.5	86
18	29	2 U2		1 TANNERS CREEK	400	23.43	340	37079.5	86
18	29	2 U3		1 TANNERS CREEK	400	23.43	340	37079.5	86
18	29	2 U4		2 TANNERS CREEK	400	23.43	340	38372.98	89
18	29	5	9	0 JOSEPH SEAGRAM & SONS	153	6.79	394	921.91	25.46
18	35	2	1	1 BALL STATE UNIV	200	12	550	1294.97	11.45
18	35	2	1	2 BALL STATE UNIV	180	12	550	1294.97	11.45
18	37	2	1	2 JASPER 2	494	18.32	270	20600.17	78.15
18	43	4	1	2 R GALLAGHER	550	13.59	263	20887.78	144
18	43	4	2	2 R GALLAGHER	550	13.59	263	20887.78	144
18	43	4	3	1 R GALLAGHER	550	12.26	263	19478.51	165

18	43	4	4	1 R GALLAGHER	550	12.26	263	19478.51	165
18	51	13	1	2 GIBSON	500	32	288	76403.71	95
18	51	13	2	2 GIBSON	500	32	288	76403.71	95
18	51	13	3	2 GIBSON	500	32	288	76403.71	95
18	51	13	4	2 GIBSON	500	32	288	76403.71	95
18	51	13	5	1 GIBSON	500	23.51	145	30387.45	70
18	55	8	2	2 GRIFFIN INDUSTRIES, INC. - NEW	69	3.83	346	316.83	27.5
18	57	4	1	1 NOBLESVILLE	225	6.96	280	2130.58	56
18	57	4	2	1 NOBLESVILLE	225	6.96	280	2130.58	56
18	57	4	3	1 NOBLESVILLE	225	6.96	280	2130.58	56
18	73	8	14	3 R M SCHAHFER	500	20.99	307	31834.91	92
18	73	8	15	2 R M SCHAHFER	500	20.99	300	35295.22	102
18	73	8	17	1 R M SCHAHFER	496	17.98	160	26406.06	104
18	73	8	18	1 R M SCHAHFER	496	17.98	160	26406.06	104
18	77	1	1	1 CLIFTY CREEK	983	22.79	350	44871.67	110
18	77	1	2	1 CLIFTY CREEK	983	22.79	350	44871.67	110
18	77	1	3	1 CLIFTY CREEK	983	22.79	350	44871.67	110
18	77	1	4	1 CLIFTY CREEK	983	22.79	350	44871.67	110
18	77	1	5	1 CLIFTY CREEK	983	22.79	350	44871.67	110
18	77	1	6	1 CLIFTY CREEK	983	22.79	350	44871.67	110
18	83	3 7-1		1 EDWARDSPORT	183	8.37	322	2971.23	54
18	83	3 7-2		2 EDWARDSPORT	183	8.37	322	3246.34	59
18	83	3 8-1		2 EDWARDSPORT	183	8.37	322	3246.34	59
18	89	3	3	3 AMOCO OIL COMPANY, WHITING	250	9	550	7156.96	112.5
18	89	3	7	5 AMOCO OIL COMPANY, WHITING	195	20.8	685	11271.02	33.17
18	89	3	16	12 AMOCO OIL COMPANY, WHITING	300	4.9	1200	273.62	14.51
18	89	3	17	13 AMOCO OIL COMPANY, WHITING	160	8	675	3318.53	66.02
18	89	117	11	1 DEAN H MITCHELL	236	8.44	290	7384.99	132
18	89	117	4	2 DEAN H MITCHELL	236	11.28	290	13690.83	137
18	89	117	5	2 DEAN H MITCHELL	236	11.28	290	13690.83	137
18	89	117	6	1 DEAN H MITCHELL	236	8.44	290	7384.99	132
18	89	121	3	7 U S STEEL CO GARY WORKS	204	8.18	500	1374.26	26.15
18	89	121	4	0 U S STEEL CO GARY WORKS	204	8.18	298	1374.26	26.15
18	89	121	5	0 U S STEEL CO GARY WORKS	204	8.18	298	1374.26	26.15
18	89	121	6	0 U S STEEL CO GARY WORKS	204	8.18	298	1374.26	26.15
18	89	121	28	0 U S STEEL CO GARY WORKS	134	6.94	480	1202.16	31.78
18	89	121	101	0 U S STEEL CO GARY WORKS	150	7.4	459	1217.57	28.31

18	89	121	301	0 U S STEEL CO GARY WORKS	134	6.94	480	1202.16	31.78
18	89	121	405	0 U S STEEL CO GARY WORKS	134	6.94	480	1202.16	31.78
18	89	121	701	0 U S STEEL CO GARY WORKS	134	6.94	480	1202.16	31.78
18	89	121	714	0 U S STEEL CO GARY WORKS	68	4.27	396	390.51	27.27
18	89	210	3	1 STATE LINE	400	16.51	330	10918.3	51
18	89	210	4	2 STATE LINE	450	14.49	300	15995.56	97
18	89	242	3	0 RHONE-POULENC BASIC CHEMIC	140	4.9	145	943.82	50.05
18	89	316	131	27 INLAND STEEL COMPANY	19	8	106	3664.36	72.9
18	89	316	320	136 INLAND STEEL COMPANY	225	9	325	6724.36	105.7
18	89	316	321	137 INLAND STEEL COMPANY	225	9	325	6724.36	105.7
18	89	316	322	138 INLAND STEEL COMPANY	225	10	325	4838.06	61.6
18	89	318	69	20 LTV STEEL COMPANY	93	0.25	77	31.91	650
18	91	21	12	2 MICHIGAN CITY	505	20.99	325	30104.75	87
18	93	2	15	15 LEHIGH PORTLAND CEMENT CO	100	5.5	388	945.11	39.78
18	93	2	16	16 LEHIGH PORTLAND CEMENT CO	100	5.5	388	945.11	39.78
18	93	2	17	17 LEHIGH PORTLAND CEMENT CO	100	5.5	388	945.11	39.78
18	97	33	50	2 ELMER W STOUT	262	5.97	312	6998.09	250
18	97	33	60	2 ELMER W STOUT	262	5.97	312	6998.09	250
18	97	33	70	4 ELMER W STOUT	565	19.99	274	24479.98	78
18	97	34	11	3 PERRY K	494	18.32	270	20600.17	78.15
18	97	34	12	3 PERRY K	494	18.32	270	20600.17	78.15
18	97	34	13	3 PERRY K	494	18.32	270	20600.17	78.15
18	97	34	14	3 PERRY K	494	18.32	270	20600.17	78.15
18	97	34	15	3 PERRY K	494	18.32	270	20600.17	78.15
18	97	70	2	1 ALLISON ENGINE CO. INC. PLANT	60	4	500	269.3	21.43
18	105	5	1	1 INDIANA UNIVERSITY	148	8	475	784.65	15.61
18	105	5	4	2 INDIANA UNIVERSITY	148	8	328	831.9	16.55
18	105	5	6	3 INDIANA UNIVERSITY	192	12	343	1341.34	11.86
18	109	2	2	2 GENERAL SHALE PRODUCTS	30	4	400	230.09	18.31
18	109	4	3	4 H T PRITCHARD	281	15.01	400	9024.49	51
18	109	4	4	2 H T PRITCHARD	281	15.01	400	9024.49	51
18	109	4	5	5 H T PRITCHARD	281	17.98	274	14472.55	57
18	109	4	6	5 H T PRITCHARD	281	17.98	274	14472.55	57
18	125	1 1SG1		1 FRANK E RATTS	300	13.01	282	4253.98	32
18	125	1 2SG1		1 FRANK E RATTS	300	13.01	282	4253.98	32
18	125	2	1	1 PETERSBURG	553	25	307	43197	88
18	125	2	2	3 PETERSBURG	612	15.22	125	16556.24	91

18	125	2	3	6 PETERSBURG	615	22	166	34212.02	90
18	125	2	4	4 PETERSBURG	615	22	150	37633.23	99
18	127	2	7	1 BAILLY	400	15.26	290	23410.46	128
18	127	2	8	1 BAILLY	400	15.26	290	23410.46	128
18	129	2	107	1 GENERAL ELECTRIC CO	250	9	300	14135.79	222.2
18	129	2	108	1 GENERAL ELECTRIC CO	250	9	300	14135.79	222.2
18	129	2	111	2 GENERAL ELECTRIC CO	250	9	300	14135.79	222.2
18	129	2	114	2 GENERAL ELECTRIC CO	250	9	300	14135.79	222.2
18	129	3	1	1 COUNTRYMARK COOPERATIVE, I	99	6.4	350	215.54	6.7
18	129	3	10	10 COUNTRYMARK COOPERATIVE, I	165	3	575	485.26	68.65
18	129	10	1	1 A B BROWN	496	14	130	15393.84	100
18	129	10	2	2 A B BROWN	496	14	130	15393.84	100
18	133	2	2	2 LONE STAR INDUSTRIES, INC	225	11.5	365	5436.51	52.34
18	141	13	2	1 UNIV OF NOTRE DAME	191	8	400	263.89	5.25
18	141	13	3	1 UNIV OF NOTRE DAME	191	8	400	263.89	5.25
18	141	13	4	2 UNIV OF NOTRE DAME	160	4	325	867.08	69
18	147	20	MB1	1 ROCKPORT	1038	42.51	306	185927.8	131
18	147	20	MB2	1 ROCKPORT	1038	42.51	306	185927.8	131
18	153	5	1SG1	1 MEROM	704	19.02	177	29265.04	103
18	153	5	2SG1	1 MEROM	704	19.02	177	29265.04	103
18	157	3	102	202 A.E. STALEY SAGAMORE OPERA	200	5.5	326	1465.89	61.7
18	157	6	6	6 ELI LILLY & COMPANY-TIPPECANOE	115	6	531	681.41	24.1
18	157	6	7	7 ELI LILLY & COMPANY-TIPPECANOE	115	6	534	723.82	25.6
18	157	6	8	8 ELI LILLY & COMPANY-TIPPECANOE	115	6	538	754.93	26.7
18	157	12	1	1 PURDUE UNIVERSITY -WADE UTILITY	200	6	350	1894.38	67
18	157	12	2	2 PURDUE UNIVERSITY -WADE UTILITY	200	6	350	1894.38	67
18	157	33	40	4 A.E. STALEY MAN. CO. SOUTH PL	250	12	170	8561.49	75.7
18	165	1	1	1 CAYUGA	500	19.51	290	26905.93	90
18	165	1	2	1 CAYUGA	500	19.51	290	26905.93	90
18	165	9	2	2 ELI LILLY & COMPANY-CLINTON L	180	6	290	1070.47	37.86
18	167	10	2	1 INDIANA STATE UNIV	254	8	325	667.02	13.27
18	167	21	1	1 WABASH RIVER	450	25	280	54978	112
18	167	21	2	1 WABASH RIVER	450	25	280	54978	112
18	167	21	3	1 WABASH RIVER	450	25	280	54978	112
18	167	21	4	1 WABASH RIVER	450	25	280	54978	112
18	167	21	5	1 WABASH RIVER	450	25	280	54978	112
18	167	21	6	1 WABASH RIVER	450	25	280	54978	112

18	167	22	1	1 WESTON PAPER & MFG	162	8	425	2084.51	41.47
18	167	22	2	1 WESTON PAPER & MFG	162	8	425	2084.51	41.47
18	169	2	1	1 JEFFERSON SMURFIT CORPORA	170	9.85	400	2426.25	31.84
18	171	2	2	1 FLEXEL INDIANA, INC.	225	4	347	500.14	39.8
18	173	1	1	1 F B CULLEY	249	9.97	321	2810.5	36
18	173	1	2	2 F B CULLEY	276	13.11	340	6074.48	45
18	173	1	3	3 F B CULLEY	499	14.49	300	16820.07	102
18	173	2	1	1 WARRICK	400	15.31	305	12886.63	70
18	173	2	2	1 WARRICK	400	15.31	305	12886.63	70
18	173	2	3	2 WARRICK	400	15.31	305	12886.63	70
18	173	2	4	3 WARRICK	500	14.49	333	23251.28	141
18	177	9	1	2 WHITEWATER VALLEY	494	18.32	270	20600.17	78.15
18	177	9	2	1 WHITEWATER VALLEY	447	17.53	274	19069.39	79.01
19	5	5	3	1 LANSING	159	5.64	306	2273.48	91
19	5	5	4	3 LANSING	499	15.35	265	14989.69	81
19	13	10	7	2 STREETER STATION	494	18.32	270	20600.17	78.15
19	13	80	71	32307 JOHN DEERE COMPONENT WOR	157	13	367	8112.62	61.12
19	13	80	72	32307 JOHN DEERE COMPONENT WOR	157	13	367	8112.62	61.12
19	13	130	1	32309 UNIV. OF NORTHERN IA 23RD & C	192	9	257	741.14	11.65
19	13	130	7	32309 UNIV. OF NORTHERN IA 23RD & C	195	7	335	1114.9	28.97
19	33	35	31	32314 LEHIGH PORTLAND CEMENT CO	237	7	218	2470.71	64.2
19	33	35	31	32315 LEHIGH PORTLAND CEMENT CO	237	7	218	2470.71	64.2
19	41	10	1	2 EARL F WISDOM	494	18.32	270	20600.17	78.15
19	45	30	4	32330 ADM-CLINTON CORN PROCESSIN	200	10	380	1911.66	24.34
19	45	30	5	32330 ADM-CLINTON CORN PROCESSIN	200	10	380	1911.66	24.34
19	45	30	6	32330 ADM-CLINTON CORN PROCESSIN	200	7	330	2250.19	58.47
19	45	30	7	32330 ADM-CLINTON CORN PROCESSIN	200	7.5	330	2398.91	54.3
19	45	75	2	2 MILTON L KAPP	245	13.01	289	10502.01	79
19	57	25	1	1 BURLINGTON	306	11.73	261	10590.42	98
19	61	60	1	2 DUBUQUE	494	18.32	270	20600.17	78.15
19	61	60	5	2 DUBUQUE	494	18.32	270	20600.17	78.15
19	61	65 BL		32357 JOHN DEERE DUBUQUE WORKS,	200	8.5	360	596.39	10.51
19	61	65 BM		32357 JOHN DEERE DUBUQUE WORKS,	200	8.5	360	596.39	10.51
19	61	65 BN		32357 JOHN DEERE DUBUQUE WORKS,	200	8.5	360	596.39	10.51
19	61	65 BO		32357 JOHN DEERE DUBUQUE WORKS,	200	8.5	360	1374.93	24.23
19	103	60	1	32369 UNIV. OF IOWA IOWA CITY IA	205	9.5	396	1499.87	21.16
19	103	60	2	32369 UNIV. OF IOWA IOWA CITY IA	205	9.5	396	1499.87	21.16

19	103	60	6	32369 UNIV. OF IOWA IOWA CITY IA	198	6.5	350	1999.95	60.27
19	111	65	12	32387 THE HUBINGER COMPANY KEOKI	74	5.6	380	1299.98	52.78
19	111	65	13	32387 THE HUBINGER COMPANY KEOKI	104	5.7	430	1499.93	58.78
19	113	20	72	32392 CARGILL 1710 16TH ST SE	225	6	300	1499.96	53.05
19	113	120	4	2 SIXTH STREET	511	18.99	288	22856.74	80.7
19	113	120	5	2 SIXTH STREET	511	18.99	288	22856.74	80.7
19	113	125	2	2 PRAIRIE CREEK	180	16	344	3217	16
19	113	125	3	1 PRAIRIE CREEK	180	12.41	313	3023.95	25
19	113	125	4	3 PRAIRIE CREEK	200	13.01	284	7444.47	56
19	113	270	5	32414 CEDAR RAPIDS MEATS, 16TH AVE	55	6	550	1053.22	37.25
19	115	5	101	1 LOUISA	610	30	300	51600.78	73
19	127	90	1	1 SUTHERLAND	248	9.51	325	2273.01	32
19	127	90	2	1 SUTHERLAND	248	9.51	325	2273.01	32
19	127	90	3	2 SUTHERLAND	248	9.51	335	4546.03	64
19	135	25	1	32436 CARGILL, INC.; COUNTY RD T-61,	227	8.8	248	2661.54	43.76
19	135	25	2	32436 CARGILL, INC.; COUNTY RD T-61,	227	8.8	248	2661.54	43.76
19	139	20	1	2 FAIR STATION	494	18.32	270	20600.17	78.15
19	139	20	2	2 FAIR STATION	494	18.32	270	20600.17	78.15
19	139	25	1	32441 GRAIN PROCESSING CORPORAT	220	13	380	1833.04	13.81
19	139	25	2	32441 GRAIN PROCESSING CORPORAT	220	13	380	1833.04	13.81
19	139	25	3	32441 GRAIN PROCESSING CORPORAT	220	13	390	749.94	5.65
19	139	25	4	32441 GRAIN PROCESSING CORPORAT	220	13	390	749.94	5.65
19	139	25	6	32441 GRAIN PROCESSING CORPORAT	220	13	460	1833.04	13.81
19	139	25	7	32441 GRAIN PROCESSING CORPORAT	220	13	400	1667.12	12.56
19	139	45	51	32448 MONSANTO CHEMICAL CO. WIG	150	4.5	350	910.05	57.22
19	139	55	8	1 MUSCATINE	220	8.52	325	3705.81	65
19	139	55	9	3 MUSCATINE	300	11.51	176	7803.74	75
19	155	115	1	2 COUNCIL BLUFFS	250	11.51	317	3017.45	29
19	155	115	2	1 COUNCIL BLUFFS	250	11.51	289	4682.24	45
19	155	115	3	3 COUNCIL BLUFFS	550	25	274	37306.5	76
19	163	90	6	1 RIVERSIDE	144	8.52	375	1710.38	30
19	163	90	7	2 RIVERSIDE	346	13.35	297	10918.12	78
19	163	90	8	2 RIVERSIDE	346	13.35	297	10918.12	78
19	163	90	9	2 RIVERSIDE	346	13.35	297	10918.12	78
19	163	210	60	32502 DAVENPORT CEMENT CO BUFFA	290	9	500	3033.28	47.68
19	163	210	60	32503 DAVENPORT CEMENT CO BUFFA	290	9	500	3033.28	47.68
19	163	210	61	32502 DAVENPORT CEMENT CO BUFFA	290	9	500	1716.4	26.98

19	169	15	8	2 AMES		207	11	313	5131.8	54
19	169	80	1	32507 IOWA STATE UNIVERSITY PHYSIC		195	12	400	632.22	5.59
19	169	80	3	32507 IOWA STATE UNIVERSITY PHYSIC		195	12	400	1204.49	10.65
19	169	80	4	32507 IOWA STATE UNIVERSITY PHYSIC		195	12	400	1290.44	11.41
19	169	80	5	32507 IOWA STATE UNIVERSITY PHYSIC		195	12	400	1161.51	10.27
19	169	80	6	32507 IOWA STATE UNIVERSITY PHYSIC		195	12	400	632.22	5.59
19	179	27	1	1 OTTUMWA		600	25	274	44669.63	91
19	193	190	1	1 GEORGE NEAL NORTH		250	9.03	320	11399.52	178
19	193	190	2	2 GEORGE NEAL NORTH		300	15.26	290	18106.53	99
19	193	190	3	3 GEORGE NEAL NORTH		400	19.99	325	34523.05	110
19	193	190	4	4 GEORGE NEAL SOUTH		469	25.76	237	32833.95	63
20	15	4	1	1 EQUILON ENTERPRISES L.L.C. (E		130	6.9	656	24305.38	650
20	15	4	12	3 EQUILON ENTERPRISES L.L.C. (E		131	6.89	600	2568.91	68.9
20	15	4	73	0 EQUILON ENTERPRISES L.L.C. (E		43	9.87	82	39.02	0.51
20	21	2	39	4 RIVERTON		511	18.99	288	22856.74	80.7
20	21	2	40	3 RIVERTON		503	19.68	262	28359.38	93.23
20	35	4	1	1 ULTRAMAR DIAMOND SHAMROCI		85	6	560	8340.95	295
20	35	4	64	0 ULTRAMAR DIAMOND SHAMROCI		31	8.79	255	1346.56	22.19
20	45	14	3	1 LAWRENCE		139	9.17	270	3104.04	47
20	45	14	4	2 LAWRENCE		170	7.98	170	3000.88	60
20	45	14	5	3 LAWRENCE		355	18.09	166	9766.78	38
20	55	23 SGU1		1 HOLCOMB		483	16.35	180	24774.7	118
20	91	13	1	0 KOCH SULFUR PRODUCTS COMF		140	4.9	145	943.82	50.05
20	107	5	1	1 LA CYGNE		698	22.99	175	37360.39	90
20	107	5	2	2 LA CYGNE		700	23.99	300	45201.35	100
20	113	3	85	0 NATIONAL COOPERATIVE REFINE		129	6.5	428	2006.25	60.46
20	125	15	6	1 HEARTLAND CEMENT CO.		50	14	425	2923.29	18.99
20	133	1	5	2 ASH GROVE CEMENT COMPANY		300	11.85	405	4466.66	40.5
20	133	1	6	3 ASH GROVE CEMENT COMPANY		200	20	400	125664	400
20	149	1	1	1 JEFFREY ENERGY CENTE		600	25.51	170	39355.24	77
20	149	1	2	1 JEFFREY ENERGY CENTE		600	25.51	170	39355.24	77
20	149	1	3	1 JEFFREY ENERGY CENTE		600	25.51	170	39355.24	77
20	177	30	10	4 TECUMSEH		225	11.62	278	8908.05	84
20	177	30	9	3 TECUMSEH		225	11.51	271	4786.29	46
20	209	8 N1		1 NEARMAN CREEK		400	19.99	280	13809.22	44
20	209	48	1	1 QUINDARO		350	8.37	330	4126.7	75
20	209	48	2	2 QUINDARO		350	11	326	7887.77	83

20	209	49	3	2 KAW		200	11.99	330	3048.55	27
21	13	1	3	1 PINEVILLE		494	18.32	270	20600.17	78.15
21	15	29	2	1 EAST BEND		650	23.51	173	47751.7	110
21	19	4	64	0 MARATHON ASHLAND PETROLEL		129	6.5	428	2006.25	60.46
21	19	4 08C		0 MARATHON ASHLAND PETROLEL		129	6.5	428	2006.25	60.46
21	19	4 0QR		0 MARATHON ASHLAND PETROLEL		112	11	705	2706.55	28.48
21	19	5 0B1		0 AK STEEL CORP.		155	6.43	640	1677.19	51.65
21	19	5 0BA		0 AK STEEL CORP.		155	6.43	640	1677.19	51.65
21	41	10	1	1 GHENT		663	30	283	67151.7	95
21	41	10	2	1 GHENT		663	30	283	67151.7	95
21	41	10	3	2 GHENT		663	30	300	81288.9	115
21	41	10	4	2 GHENT		663	30	300	81288.9	115
21	47	25	2	0 SUPERIOR GRAPHITE CO, DESUL		41	1.05	176	42.78	49.4
21	49	3	1	2 DALE		150	11.99	320	3500.18	31
21	49	3	2	3 DALE		150	11.99	340	4855.09	43
21	49	3	3	1 DALE		150	11.99	310	4968	44
21	49	3	4	1 DALE		150	11.99	310	4968	44
21	59	27	1	1 ELMER SMITH		650	18.75	312	22089.38	80
21	59	27	2	1 ELMER SMITH		650	18.75	312	22089.38	80
21	59	39	32	0 OWENSBORO GRAIN COMPANY		165	7.08	387	1385.01	35.18
21	89	1	1	0 E I DUPONT INC		140	4.9	145	943.82	50.05
21	91	3 C1		1 COLEMAN		350	14	293	9698.12	63
21	91	3 C2		1 COLEMAN		350	14	293	9698.12	63
21	91	3 C3		2 COLEMAN		350	14	294	8312.67	54
21	91	4	24	0 NATL SOUTHWIRE ALUMINUM		56	4.53	140	771.2	47.85
21	101	1 H1		1 HMP&L STATION 2		350	15.01	315	12563.5	71
21	101	1 H2		1 HMP&L STATION 2		350	15.01	315	12563.5	71
21	101	12	6	1 HENDERSON I		220	9.03	325	2433.6	38
21	101	29	0	0 ALCAN INGOT & RECYCLING		56	4.53	140	771.2	47.85
21	101	29	0	0 ALCAN INGOT & RECYCLING		56	4.53	140	771.2	47.85
21	111	62	1	10799 E I DUPONT INC		450	2	500	2.42	0.77
21	111	126	4	1 CANE RUN		257	13.49	120	9719.05	68
21	111	126	5	2 CANE RUN		257	15.51	120	10958.28	58
21	111	126	6	3 CANE RUN		518	19.02	120	14490.46	51
21	111	127	1	1 MILL CREEK		600	15.51	175	16626.36	88
21	111	127	2	1 MILL CREEK		600	15.51	175	16626.36	88
21	111	127	3	2 MILL CREEK		600	17.98	175	22597.49	89

21	111	127	4	3 MILL CREEK	600	19.51	175	26009.06	87
21	111	129	1	10832 DEPT OF SAN MUNICIP INCIN (CL	600	5	160	5.3	0.27
21	111	189	1	10867 ROHM & HAAS KENTUCKY INC	610	4	332	2.76	0.22
21	111	870	1	10980 G E APPLIANCES BOILER PLANT	470	4	365	0.63	0.05
21	127	3 BSU1		1 BIG SANDY	826	17	285	15888.64	70
21	127	3 BSU2		2 BIG SANDY	826	18.71	310	19245.82	70
21	145	6	1	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	10	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	2	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	3	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	4	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	5	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	6	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	7	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	8	1 SHAWNEE	800	28.01	282	49295.48	80
21	145	6	9	1 SHAWNEE	800	28.01	282	49295.48	80
21	157	9 0AA		0 AIR PRODUCTS & CHEMICALS	165	7.08	387	1385.01	35.18
21	157	9 0AB		0 AIR PRODUCTS & CHEMICALS	165	7.08	387	1385.01	35.18
21	161	9	1	1 H L SPURLOCK	805	15.01	291	16633.37	94
21	161	9	2	2 H L SPURLOCK	805	22	285	29270.29	77
21	167	1	1	1 E W BROWN	345	12.77	296	7172.34	56
21	167	1	2	2 E W BROWN	564	18.51	300	31483.98	117
21	167	1	3	2 E W BROWN	564	18.51	300	31483.98	117
21	177	1	4	2 GREEN RIVER	198	11.99	325	3838.91	34
21	177	1	5	3 GREEN RIVER	247	11	325	7222.54	76
21	177	6	1	1 PARADISE	600	26	175	33979.55	64
21	177	6	2	1 PARADISE	600	26	175	33979.55	64
21	177	6	3	2 PARADISE	800	27.01	292	60162.98	105
21	183	69 W1		1 D B WILSON	600	22	130	20527.21	54
21	199	5	1	1 COOPER	260	17.98	310	18788.93	74
21	199	5	2	1 COOPER	260	17.98	310	18788.93	74
21	223	6071	1	1 TRIMBLE COUNTY	760	17.98	125	30468.53	120
21	233	1 R1		1 ROBERT REID	494	18.32	270	20600.17	78.15
21	233	52 G1		1 R D GREEN	350	15.01	130	12917.4	73
21	233	52 G2		1 R D GREEN	350	15.01	130	12917.4	73
21	239	1	5	2 TYRONE	180	11.99	310	4516.37	40
22	5	7	1	0 E. I. DUPONT	140	4.9	145	943.82	50.05

22	5	28	1	0 PCS NITR FERT	140	4.9	145	943.82	50.05
22	11	2	1	0 BOISE CASCADE	68	4.27	396	390.51	27.27
22	17	3	7	0 OLIN CORP	140	4.9	145	943.82	50.05
22	19	5	31	0 CONOCO REFIN	112	11	705	2706.55	28.48
22	19	5	41	0 CONOCO REFIN	129	6.5	428	2006.25	60.46
22	19	11	1	0 LAKE CHRLES CARBON CO	45	2.04	184	75.4	23.07
22	19	14	6	4 R S NELSON	500	22.51	277	39398.26	99
22	19	16	13	0 CITGO CORP	129	6.5	428	2006.25	60.46
22	19	16	14	0 CITGO CORP	129	6.5	428	2006.25	60.46
22	19	16	15	0 CITGO CORP	129	6.5	428	2006.25	60.46
22	19	16	16	0 CITGO CORP	129	6.5	428	2006.25	60.46
22	19	16	17	0 CITGO CORP	129	6.5	428	2006.25	60.46
22	19	16	18	0 CITGO CORP	129	6.5	428	2006.25	60.46
22	19	69	4	0 LKE CHAS CALC.PLANT	57	8.24	258	1652.6	30.99
22	19	142	14	0 LA PIGMENT CO, L P	93	2.35	146	124.05	28.6
22	31	51	1	1 DOLET HILLS	525	25	158	41724.38	85
22	33	4	1	0 SCHUYLKILL METALS	69	2.45	208	188.01	39.88
22	33	4	4	0 SCHUYLKILL METALS	69	2.45	208	188.01	39.88
22	33	10	1	0 GEORGIA PACI	68	4.27	396	390.51	27.27
22	33	10	2	0 GEORGIA PACI	68	4.27	396	390.51	27.27
22	33	10	3	0 GEORGIA PACI	68	4.27	396	390.51	27.27
22	33	10	4	0 GEORGIA PACI	68	4.27	396	390.51	27.27
22	33	15	71	0 EXXON RFRY	129	6.5	428	2006.25	60.46
22	33	15	72	0 EXXON RFRY	129	6.5	428	2006.25	60.46
22	33	21	1	0 REYNOLDS METALS	45	2.04	184	75.4	23.07
22	33	21	2	0 REYNOLDS METALS	45	2.04	184	75.4	23.07
22	33	21	3	0 REYNOLDS METALS	45	2.04	184	75.4	23.07
22	33	21	4	0 REYNOLDS METALS	45	2.04	184	75.4	23.07
22	33	33	2	0 RHONE-POULENC	140	4.9	145	943.82	50.05
22	33	33	3	0 RHONE-POULENC	140	4.9	145	943.82	50.05
22	49	1	9	0 STONE CONTAINER CORP	102	4.76	380	614.65	34.54
22	51	4	57	0 CYTEC IND.	140	4.9	145	943.82	50.05
22	67	1	2	0 INT. PAPER	174	5.54	204	1219.48	50.59
22	69	4	4	0 RED RIVER MILL	174	5.54	204	1219.48	50.59
22	73	1	9	0 PLANT #31	68	4.27	396	390.51	27.27
22	73	1	10	0 PLANT #31	68	4.27	396	390.51	27.27
22	75	15	2	0 ALLIANCE REFINERY	107	5.28	577	490.24	22.39

22	75	15	10	0 ALLIANCE REFINERY	107	5.28	577	490.24	22.39
22	75	15	11	0 ALLIANCE REFINERY	107	5.28	577	490.24	22.39
22	75	15	23	0 ALLIANCE REFINERY	94	7.89	790	1277.57	26.13
22	75	15 000		0 ALLIANCE REFINERY	31	8.79	255	1346.56	22.19
22	77	5 2B1		2 BIG CAJUN 2	600	26.51	296	22078.54	40
22	77	5 2B2		2 BIG CAJUN 2	600	26.51	296	22078.54	40
22	77	5 2B3		1 BIG CAJUN 2	600	26.51	280	23182.47	42
22	79	1	1	0 I.P. CO	68	4.27	396	390.51	27.27
22	79	10	2	2 RODEMACHER	265	17.98	296	23867.02	94
22	87	1	28	0 MERAUX PET REF	129	6.5	428	2006.25	60.46
22	87	6	81	0 CII CARBON	194	8.13	361	1790.98	34.5
22	89	2	59	53 SHELL OIL/NORCO-EAST	200	11	360	4903.72	51.6
22	89	2	60	54 SHELL OIL/NORCO-EAST	200	11	360	4903.72	51.6
22	89	2	61	55 SHELL OIL/NORCO-EAST	200	11.3	260	3159.06	31.5
22	89	2 0A6		94 SHELL OIL/NORCO-EAST	211	16	139	4966.24	24.7
22	89	3	1	1 CALCINER INDUSTRIES	163	10	2200	4052.66	51.6
22	93	1	16	0 STAR ENTERPRISE	31	8.79	255	1346.56	22.19
22	93	1	16	15 STAR ENTERPRISE	230	6.5	450	4811.56	145
22	93	4	5	0 AGRICO/UNCLE SAM PLT	140	4.9	145	943.82	50.05
22	93	4	5	5 AGRICO/UNCLE SAM PLT	200	5	190	37.31	1.9
22	93	4	6	6 AGRICO/UNCLE SAM PLT	200	5	190	1924.23	98
22	93	4	7	7 AGRICO/UNCLE SAM PLT	200	5	190	1924.23	98
22	93	15	1	0 CALCINER IND	194	8.13	361	1790.98	34.5
22	93	15	1	1 CALCINER IND	111	8	370	3116.47	62
22	97	5	51	0 PHIBRO ENERGY	129	6.5	428	2006.25	60.46
22	97	5	51	48 PHIBRO ENERGY	167	3.9	483	1409.62	118
22	101	5	24	0 COLUMBIAN CHEM CO	78	2.81	464	279.07	45
22	101	5	24	14 COLUMBIAN CHEM CO	200	6.4	760	643.4	20
22	117	1	19	0 GAYLORD/PAPER MILL	174	5.54	204	1219.48	50.59
22	117	1	22	0 GAYLORD/PAPER MILL	174	5.54	204	1219.48	50.59
22	121	6	1	0 ADDIS PLANT	78	2.81	464	279.07	45
22	121	6	2	0 ADDIS PLANT	78	2.81	464	279.07	45
22	121	6	3	0 ADDIS PLANT	78	2.81	464	279.07	45
22	121	10	42	0 PLACID REFINING	129	6.5	428	2006.25	60.46
23	5	135	3	2 WILLIAM F WYMAN	320	10.16	350	6648.02	82
23	5	135	4	3 WILLIAM F WYMAN	425	24.64	308	30040.89	63
23	5	138	1	1 S D WARREN COMPANY	360	10.5	400	8191.45	94.6

23	9	4	4	2 CHAMPION INTERNATIONAL COR	362	10.5	350	5169.44	59.7
23	17	45	13	1 MEAD PUBLISHING PAPER DIVISI	411	11.5	325	11114	107
23	19	20	1	1 EASTERN FINE PAPER INC	150	10	400	3047.35	38.8
23	19	20	2	1 EASTERN FINE PAPER INC	150	10	400	3047.35	38.8
23	19	56	1	1 GREAT NORTHERN PAPER INC/M	348	18	329	10942.19	43
23	19	56	2	1 GREAT NORTHERN PAPER INC/M	348	18	329	10942.19	43
23	19	56	4	1 GREAT NORTHERN PAPER INC/M	348	18	329	10942.19	43
23	19	58	1	1 GREAT NORTHERN PAPER INC/E	169	9	325	2035.76	32
23	19	58	2	2 GREAT NORTHERN PAPER INC/E	169	9	325	2035.76	32
23	25	20	3	1 MADISON PAPER INDUSTRIES	250	3.7	380	2413.85	224.5
23	25	20	4	1 MADISON PAPER INDUSTRIES	250	3.7	380	2413.85	224.5
23	25	27	1	1 S D WARREN CO - SOMERSET PL	275	14.25	375	14353.68	90
24	1	11	14	14 WESTVACO CORP, FINE PAPERS	220	8.58	300	2890.92	50
24	3	14	2	1 HERBERT A WAGNER	287	10.16	278	6080.5	75
24	3	14	3	2 HERBERT A WAGNER	346	13.82	294	14100.51	94
24	3	14	4	3 HERBERT A WAGNER	350	17.52	600	27724.07	115
24	3	468	1	2 BRANDON SHORES	695	22	268	29650.42	78
24	3	468	2	2 BRANDON SHORES	695	22	268	29650.42	78
24	5	147	36	36 BETHLEHEM STEEL CORP	161	4.17	1200	409.72	30
24	17	14	1	1 MORGANTOWN	700	19.51	250	23916.38	80
24	17	14	2	1 MORGANTOWN	700	19.51	250	23916.38	80
24	17	40	93	93 NAVAL SURFACE WARFARE CNT	105	5	400	196.35	10
24	19	13	8	1 VIENNA	160	12.51	625	11308.2	92
24	21	3	3	3 LEHIGH PORTLAND CEMENT	89	4.42	400	567.72	37
24	21	3	4	4 LEHIGH PORTLAND CEMENT	89	4.42	400	567.72	37
24	21	5	3	3 EASTALCO ALUMINUM CO.	80	5	200	1079.93	55
24	21	5	4	4 EASTALCO ALUMINUM CO.	80	1.25	200	62.59	51
24	21	131	29	29 FORT DETRICK	10	2.5	800	490.88	100
24	21	131	30	30 FORT DETRICK	10	2.5	800	490.88	100
24	31	19	1	1 DICKERSON	703	25	175	24052.88	49
24	31	19	2	1 DICKERSON	703	25	175	24052.88	49
24	33	14	1	1 CHALK POINT	700	31.51	244	28073.09	36
24	33	14	2	1 CHALK POINT	700	31.51	244	28073.09	36
24	33	14	3	2 CHALK POINT	712	25	271	27489	56
24	33	14	4	2 CHALK POINT	712	25	271	27489	56
24	43	5	11	2 R P SMITH	283	9.97	305	5855.21	75
24	510	79	1	2 C P CRANE	253	10.94	310	9211.95	98

24	510	79	2	1 C P CRANE	253	10.94	310	8929.95	95
25	1	54	1	1 CANAL	498	17.98	260	24628.73	97
25	1	54	2	2 CANAL	498	17.98	322	26152.16	103
25	5	60	8	1 SOMERSET	310	13.01	310	7710.34	58
25	5	61	1	1 BRAYTON POINT	352	14	255	12007.2	78
25	5	61	2	1 BRAYTON POINT	352	14	255	12007.2	78
25	5	61	3	2 BRAYTON POINT	352	19.51	255	26009.06	87
25	5	61	4	3 BRAYTON POINT	500	19.99	300	24479.98	78
25	9	194	1	1 SALEM HARBOR	435	9.03	300	5763.8	90
25	9	194	2	1 SALEM HARBOR	435	9.03	300	5763.8	90
25	9	194	3	2 SALEM HARBOR	435	12.51	300	11062.37	90
25	9	194	4	3 SALEM HARBOR	500	22.99	343	30718.54	74
25	13	40	1	2 MOUNT TOM	370	10.03	278	7111.08	90
25	17	128	4	1 MYSTIC	335	10.52	340	6779.8	78
25	17	128	6	1 MYSTIC	335	10.52	340	6779.8	78
25	17	128	7	2 MYSTIC	500	17.98	370	22851.4	90
26	3	1	1	1 KIMBERLY CLARK CORP	135	7.17	350	1110.36	27.5
26	7	10	2	2 LAFARGE CORP	220	13	350	2495.37	18.8
26	7	10	27	27 LAFARGE CORP	292	24	350	6288.23	13.9
26	17	33	1	1 DAN E KARN	350	17.98	290	15234.27	60
26	17	33	2	1 DAN E KARN	350	17.98	290	15234.27	60
26	17	33	3	2 DAN E KARN	450	34.5	600	69176.85	74
26	17	33	4	2 DAN E KARN	450	34.5	600	69176.85	74
26	17	34	7	1 J C WEADOCK	498	17	275	19974.29	88
26	17	34	8	1 J C WEADOCK	498	17	275	19974.29	88
26	29	7	10	210 MEDUSA PORTLAND CEMENT CC	325	11	232	7726.22	81.3
26	29	8	3	1 ADVANCE	494	18.32	270	20600.17	78.15
26	41	2	340	340 MEAD PAPER CO	330	10	387	2763.04	35.18
26	41	9	1	1 ESCANABA	494	18.32	270	20600.17	78.15
26	41	9	2	1 ESCANABA	494	18.32	270	20600.17	78.15
26	45	13	1	1 ERICKSON	475	17	285	8171.3	36
26	57	9	7	7 TOTAL PETROLEUM INC	200	7.17	425	1647.36	40.8
26	57	9	7	7 TOTAL PETROLEUM INC	129	6.5	428	2006.25	60.46
26	63	13	1	1 HARBOR BEACH	300	9.51	300	7742.45	109
26	65	189	53	1 MICHIGAN STATE UNIVERSITY	275	11	325	4428.56	46.6
26	65	189	54	1 MICHIGAN STATE UNIVERSITY	275	11	325	4428.56	46.6
26	65	189	55	2 MICHIGAN STATE UNIVERSITY	275	13	325	5242.94	39.5

26	65	1831	4	2 ECKERT STATION	619	7.98	290	5301.55	106
26	65	1831	5	2 ECKERT STATION	619	7.98	290	5301.55	106
26	65	1831	6	2 ECKERT STATION	619	7.98	290	5301.55	106
26	77	57	5	5 GEORGIA PACIFIC CORP	150	6.67	340	2037.09	58.3
26	79	5	1	1 HAWKINS OIL & GAS INC	125	1	150	18.02	22.95
26	101	4	3	2 MARTIN MARIETTA MAGNESIA SF	165	3.5	569	771.62	80.2
26	101	7	1	2 MORTON INTL INC	160	6.5	310	965.63	29.1
26	103	10	3	2 PRESQUE ISLE	400	11	337	12259.31	129
26	103	10	4	2 PRESQUE ISLE	400	11	337	12259.31	129
26	103	10	5	1 PRESQUE ISLE	400	9.03	290	4803.17	75
26	103	10	6	1 PRESQUE ISLE	400	9.03	290	4803.17	75
26	103	10	7	3 PRESQUE ISLE	410	9.51	290	5256.34	74
26	103	10	8	3 PRESQUE ISLE	410	9.51	290	5256.34	74
26	103	10	9	3 PRESQUE ISLE	410	9.51	290	5256.34	74
26	115	10	3	1 HOLNAM INC DUNDEE CEMENT	350	15	318	9224.52	52.2
26	115	10	3	1 HOLNAM INC DUNDEE CEMENT	105	5.05	167	791.17	39.5
26	115	20	1	1 MONROE	805	28.01	270	87499.48	142
26	115	20	2	1 MONROE	805	28.01	270	87499.48	142
26	115	20	3	1 MONROE	805	28.01	270	87499.48	142
26	115	20	4	1 MONROE	805	28.01	270	87499.48	142
26	115	22	1	1 J R WHITING	297	10.65	286	4899.51	55
26	115	22	2	2 J R WHITING	297	10.65	291	5166.76	58
26	115	22	3	3 J R WHITING	297	11.45	308	6178.07	60
26	121	6	3	7 S D WARREN CO	275	12	340	3494.72	30.9
26	121	6	11	11 S D WARREN CO	68	4.27	396	390.51	27.27
26	121	6	3	7 S D WARREN CO	95	5.18	413	634.96	30.13
26	121	6	4	8 S D WARREN CO	174	5.54	204	1219.48	50.59
26	121	66	4	1 B C COBB	650	27.5	295	36231.48	61
26	121	66	5	1 B C COBB	650	27.5	295	36231.48	61
26	125	182	902	902 GENERAL MOTORS CORP	137	6.5	120	1330.64	40.1
26	131	1	1	1 STONE CONTAINER CORP	195	9.92	400	3331.13	43.1
26	131	1	1	1 STONE CONTAINER CORP	165	7.08	387	1385.01	35.18
26	131	2	2	2 BHP WHITE PINE REFINERY INC	150	8	121	1080.71	21.5
26	139	55	4	2 JAMES DE YOUNG	494	18.32	270	20600.17	78.15
26	139	55	5	4 JAMES DE YOUNG	603	21.62	302	32390.57	88.23
26	139	60	1	1 J H CAMPBELL	400	19.02	265	44607.88	157
26	139	60	2	1 J H CAMPBELL	400	19.02	265	44607.88	157

26	139	60	3	2 J H CAMPBELL	647	27.29	275	47963.61	82
26	147	9	1	1 CARGILL SALT INC	165	6.75	425	1535.17	42.9
26	147	24	1	2 ST CLAIR	599	13.3	300	11670.07	84
26	147	24	2	2 ST CLAIR	599	13.3	300	11670.07	84
26	147	24	3	2 ST CLAIR	599	13.3	300	11670.07	84
26	147	24	4	2 ST CLAIR	599	13.3	300	11670.07	84
26	147	24	6	1 ST CLAIR	425	13.3	300	21672.99	156
26	147	24	7	3 ST CLAIR	600	16	300	26339.17	131
26	147	29	1	1 BELLE RIVER	665	25.51	290	45999.63	90
26	147	29	2	1 BELLE RIVER	665	25.51	290	45999.63	90
26	147	37	8	5 E B EDDY PAPER INC	135	4.92	340	1154.01	60.7
26	163	92	19	30 NATIONAL STEEL CORP	102	14	400	815.87	5.3
26	163	92	111	213 NATIONAL STEEL CORP	315	16.5	400	3378.44	15.8
26	163	92	19	30 NATIONAL STEEL CORP	119	9.52	455	1720.45	24.17
26	163	92	201	201 NATIONAL STEEL CORP	68	5.5	550	1786.63	75.2
26	163	92	208	208 NATIONAL STEEL CORP	88	9.75	550	4875.43	65.3
26	163	92	216	0 NATIONAL STEEL CORP	155	6.43	640	1677.19	51.65
26	163	92	216 E1	NATIONAL STEEL CORP	155	6.43	640	1677.19	51.65
26	163	188	221	0 ROUGE STEEL CO	150	7.4	459	1217.57	28.31
26	163	188	221 E1	ROUGE STEEL CO	150	7.4	459	1217.57	28.31
26	163	188	222	0 ROUGE STEEL CO	150	7.4	459	1217.57	28.31
26	163	188	222 E1	ROUGE STEEL CO	150	7.4	459	1217.57	28.31
26	163	188	446	446 ROUGE STEEL CO	208	14	1200	2201.32	14.3
26	163	188	447	447 ROUGE STEEL CO	208	14	1200	2201.32	14.3
26	163	188	448	448 ROUGE STEEL CO	208	14	1200	2201.32	14.3
26	163	247	7	0 MARATHON OIL COMPANY	129	6.5	428	2006.25	60.46
26	163	247	14	12 MARATHON OIL COMPANY	199	9.83	465	4212.02	55.5
26	163	270	7	3 WYANDOTTE	494	18.32	270	20600.17	78.15
26	163	289	5	1 MISTERSKY	195	11.99	305	2145.27	19
26	163	312	2	1 RIVER ROUGE	385	12.62	285	18762.94	150
26	163	312	3	2 RIVER ROUGE	425	12.82	290	17813.37	138
26	163	313	16	1 TRENTON CHANNEL	559	14.49	310	17809.49	108
26	163	313	17	1 TRENTON CHANNEL	559	14.49	310	17809.49	108
26	163	313	18	1 TRENTON CHANNEL	559	14.49	310	17809.49	108
26	163	313	19	1 TRENTON CHANNEL	559	14.49	310	17809.49	108
26	163	313 9A		2 TRENTON CHANNEL	562	16	280	25534.92	127
27	17	2	4	0 POTLATCH - CLOQUET	174	5.54	204	1219.48	50.59

27	31	1	1	0 LTV STEEL MINING - TACONITE H	165	7.08	387	1385.01	35.18
27	31	1	2	0 LTV STEEL MINING - TACONITE H	165	7.08	387	1385.01	35.18
27	31	1	3	0 LTV STEEL MINING - TACONITE H	165	7.08	387	1385.01	35.18
27	37	3	3	1 BLACK DOG	600	22.51	315	31041.06	78
27	37	3	4	1 BLACK DOG	600	22.51	315	31041.06	78
27	37	6	1	0 KOCH REFINING - SULFURIC ACID	140	4.9	145	943.82	50.05
27	37	11	1	0 KOCH REFINING	129	6.5	428	2006.25	60.46
27	37	11	7	0 KOCH REFINING	107	5.28	577	490.24	22.39
27	37	16	10	0 GOPHER SMELTING & REFINING	69	2.45	208	188.01	39.88
27	53	15	6	1 RIVERSIDE	243	11.99	300	4968	44
27	53	15	7	1 RIVERSIDE	243	11.99	300	4968	44
27	53	15	8	2 RIVERSIDE	475	16	300	14275.43	71
27	61	4	1	1 CLAY BOSWELL	250	9.51	341	7529.36	106
27	61	4	3	3 CLAY BOSWELL	700	29.01	190	31726.9	48
27	61	4	4	2 CLAY BOSWELL	600	19.99	158	31698.44	101
27	75	3	2	0 NORTHSORE MINING CO	165	7.08	387	1385.01	35.18
27	91	7	3	1 FOX LAKE	142	7.98	254	3551.04	71
27	99	1 NEPP		2 NORTHEAST STATION	494	18.32	270	20600.17	78.15
27	109	11	4	2 SILVER LAKE	494	18.32	270	20600.17	78.15
27	111	2	2	2 HOOT LAKE	225	13.35	314	12177.91	87
27	111	2	3	2 HOOT LAKE	225	13.35	314	12177.91	87
27	123	12	5	1 HIGH BRIDGE	570	20.99	330	18339.68	53
27	123	12	6	1 HIGH BRIDGE	570	20.99	330	18339.68	53
27	129	14	1	0 SOUTHERN MN SUGAR COOP	165	7.08	387	1385.01	35.18
27	137	13	1	1 SYL LASKIN	300	10.52	136	8257.45	95
27	137	13	2	1 SYL LASKIN	300	10.52	136	8257.45	95
27	137	28	9	2 VIRGINIA	511	18.99	288	22856.74	80.7
27	141	4	1	2 SHERBURNE COUNTY	650	32.51	175	87159.38	105
27	141	4	2	2 SHERBURNE COUNTY	650	32.51	175	87159.38	105
27	141	4	3	1 SHERBURNE COUNTY	650	25.98	175	44529.57	84
27	163	3	3	0 ASHLAND PETROLEUM - ST PAUL	129	6.5	428	2006.25	60.46
27	163	5	1	1 ALLEN S KING	785	18.51	365	29600.32	110
27	163	15	3	0 3M - COTTAGE GROVE BOILERS	165	7.08	387	1385.01	35.18
28	1	10	1	53111 INTERNATIONAL PAPER NATCHE	250	8	270	2419.79	48.14
28	1	10	2	53111 INTERNATIONAL PAPER NATCHE	350	14	310	6045.16	39.27
28	1	10	3	53111 INTERNATIONAL PAPER NATCHE	350	14	310	6045.16	39.27
28	23	24	1	53136 SHELL WESTERN E&P GOODWAT	120	2	1000	226.67	72.15

28	47	55	4	4 JACK WATSON	350	16	270	12465.87	62
28	47	55	5	5 JACK WATSON	400	22.99	267	24906.92	60
28	47	115	2	53164 DUPONT E.I. NEMOURS & CO. DE	150	10	275	1331.25	16.95
28	47	115	3	53164 DUPONT E.I. NEMOURS & CO. DE	150	10	275	1331.25	16.95
28	59	34	1	53177 INT'L PAPER CO. 2019 GRIERSON	207	10	320	1576.3	20.07
28	59	34	2	53177 INT'L PAPER CO. 2019 GRIERSON	225	9	280	1066.86	16.77
28	59	58	1	7 CHEVRON	189	3.67	872	618.42	58.46
28	59	58	2	7 CHEVRON	189	3.67	872	618.42	58.46
28	59	58	4	4 CHEVRON	129	6.5	428	2006.25	60.46
28	59	90	1	1 VICTOR J DANIEL JR.	350	34	278	29961.44	33
28	59	90	2	1 VICTOR J DANIEL JR.	350	34	278	29961.44	33
28	73	1	1	53211 AMERADA HESS CORP PURVIS,	50	4.5	450	954.26	60
28	73	1	2	53211 AMERADA HESS CORP PURVIS,	86	4.5	450	954.26	60
28	73	1	6	53213 AMERADA HESS CORP PURVIS,	100	3	950	568.03	80.36
28	73	1	8	53208 AMERADA HESS CORP PURVIS,	300	5	1000	1074.03	54.7
28	73	1	9	53210 AMERADA HESS CORP PURVIS,	200	8	410	1809.56	36
28	73	6	1	53216 KAISER ALUM & CHEM BOX 365 F	114	8.7	413	1554.54	26.15
28	73	21	1	1 R D MORROW	405	16.74	250	10344.27	47
28	73	21	2	1 R D MORROW	405	16.74	250	10344.27	47
28	87	25	1	53252 UNITED CEMENT COMPANY	175	12	430	3800.08	33.6
28	87	25	1	53253 UNITED CEMENT COMPANY	175	12	430	3800.08	33.6
28	87	44	1	53257 WEYERHAEUSER COMPANY	250	12	344	6828.83	60.38
28	111	5	3	53279 LEAF RIVER FOREST PRODUCTS	300	14	330	3283.51	21.33
28	121	36	1	53284 SHELL WESTERN E&P - THOMA	300	9.8	725	4500.14	59.66
28	151	48	1	1 GERALD ANDRUS	499	22.99	243	24076.69	58
29	19	2	6	1 COLUMBIA	220	9.03	325	2433.6	38
29	21	4	4	3 LAKE ROAD	150	5.97	327	1875.49	67
29	21	4	5	4 LAKE ROAD	150	6.96	314	2130.58	56
29	21	4	6	5 LAKE ROAD	225	10.03	338	5451.82	69
29	31	21	48	20 LONE STAR INDUSTRIES INC	210	11	270	7000.16	73.66
29	71	3	1	1 LABADIE	700	20.5	300	36637.14	111
29	71	3	2	1 LABADIE	700	20.5	300	36637.14	111
29	71	3	3	1 LABADIE	700	20.5	300	36637.14	111
29	71	3	4	1 LABADIE	700	20.5	300	36637.14	111
29	77	5	3	2 JAMES RIVER	200	11.99	310	3274.37	29
29	77	5	4	3 JAMES RIVER	200	11.99	310	3726	33
29	77	5	5	5 JAMES RIVER	350	8.29	320	5289.64	98

29	77	39	1	3 SOUTHWEST	385	11	131	8553.01	90
29	83	1	1	1 MONROSE	450	10.28	290	9793.98	118
29	83	1	2	2 MONTROSE	450	15.01	290	21234.08	120
29	83	1	3	2 MONTROSE	450	15.01	290	21234.08	120
29	93	8	1	1 ASARCO	610	12	199	4065.86	35.95
29	93	8	18	3 ASARCO	78	5	75	791.88	40.33
29	93	8	19	4 ASARCO	375	7.5	159	2595.94	58.76
29	93	9	1	1 DOE RUN COMPANY	200	16	190	7079.41	35.21
29	95	22	5	1 HAWTHORN	600	16	293	26942.36	134
29	95	30	7	7 LAFARGE CORPORATION	204	12	500	5412.85	47.86
29	95	30	8	7 LAFARGE CORPORATION	204	12	500	5412.85	47.86
29	95	31	1	1 SIBLEY	700	13.49	300	17437.11	122
29	95	31	2	1 SIBLEY	700	13.49	300	17437.11	122
29	95	31	3	1 SIBLEY	700	13.49	300	17437.11	122
29	95	50	1	1 BLUE VALLEY	150	5.41	300	1172.35	51
29	95	50	2	1 BLUE VALLEY	150	5.41	300	1172.35	51
29	95	50	3	2 BLUE VALLEY	250	6.77	311	2339.82	65
29	97	1	1	1 ASBURY	400	13.01	292	10236.14	77
29	99	3	2	2 THE DOE RUN COMPANY - SMEL-	350	20	361	10838.52	34.5
29	99	16	1	1 RUSH ISLAND	700	20.75	260	33816.38	100
29	99	16	2	1 RUSH ISLAND	700	20.75	260	33816.38	100
29	117	2	6	1 CHILLICOTHE	494	18.32	270	20600.17	78.15
29	127	1	54	15 AMERICAN CYANAMID CO	145	8.75	300	1333.13	22.17
29	127	1	55	15 AMERICAN CYANAMID CO	145	8.75	300	1333.13	22.17
29	143	4	1	1 NEW MADRID	800	19.99	350	36719.97	117
29	143	4	2	1 NEW MADRID	800	19.99	350	36719.97	117
29	143	8	61	58 NORANDA ALUMINUM INC	295	26	173	18269.32	34.41
29	143	8	62	59 NORANDA ALUMINUM INC	124	14.3	180	6032.38	37.56
29	143	8	63	60 NORANDA ALUMINUM INC	124	14.3	175	5855.71	36.46
29	151	2	1	2 CHAMOIS	494	18.32	270	20600.17	78.15
29	151	2	2	1 CHAMOIS	470	18.03	317	24066.33	94.26
29	163	1	15	1 HOLNAM INC	250	21	346	10834.18	31.28
29	163	1	17	1 HOLNAM INC	250	21	346	10834.18	31.28
29	165	7	1	1 IATAN	700	23.99	300	45201.35	100
29	173	1	30	56386 CONTINENTAL CEMENT COMPAN	105	5.05	167	791.17	39.5
29	175	1 MB1		2 THOMAS HILL	411	16	340	12063.74	60
29	175	1 MB2		1 THOMAS HILL	400	16	340	12063.74	60

29	175	1 MB3		3 THOMAS HILL	620	29.01	290	33048.85	50
29	183	1	1	1 SIOUX	600	18.75	350	33410.18	121
29	183	1	2	1 SIOUX	600	18.75	350	33410.18	121
29	183	76	46	78 GENERAL MOTORS WENTZVILLE	250	10	365	1033.59	13.16
29	195	10	5	2 MARSHALL	494	18.32	270	20600.17	78.15
29	201	17	1	1 SIKESTON	450	16.08	280	12590.84	62
29	510	3	1	2 ANHEUSER BUSCH, INC., ST.LOU	225	10	330	1666.62	21.22
29	510	3	2	3 ANHEUSER BUSCH, INC., ST.LOU	225	10	370	1504.83	19.16
29	510	10	1	1 MERAMEC	250	10.94	325	10057.95	107
29	510	10	2	1 MERAMEC	250	10.94	325	10057.95	107
29	510	10	3	2 MERAMEC	350	14	355	19396.24	126
29	510	10	4	3 MERAMEC	350	15.51	360	24183.8	128
29	510	17	391	186 MALLINCKRODT SPECIALTY CHE	110	5	581	733.37	37.35
30	31	5	21	9 HOLNAM, INC.	130	10	300	2668	33.97
30	49	1	6	6 ASARCO INCORPORATED	397	8.3	214	3949.75	73
30	49	1	7	7 ASARCO INCORPORATED	209	5.5	177	1187.92	50
30	49	1	14	14 ASARCO INCORPORATED	427	9	122	5661.95	89
30	83	3 B1		2 LEWIS & CLARK	484	22.37	241	38724.99	98.53
30	87	8	1	1 COLSTRIP	500	16.51	200	21408.44	100
30	87	8	2	1 COLSTRIP	500	16.51	200	21408.44	100
30	87	8	3	2 COLSTRIP	692	23.99	194	47461.42	105
30	87	8	4	2 COLSTRIP	692	23.99	194	47461.42	105
30	111	12	9	8 CENEX	200	6.8	450	1427.25	39.3
30	111	12	28	27 CENEX	200	4.3	500	790	54.4
30	111	12	29	28 CENEX	200	4.3	500	790	54.4
30	111	12	36	30 CENEX	200	2.66	932	229.51	41.3
30	111	13	1	1 EXXON CO USA	208	9.67	435	3077.22	41.9
30	111	13	4	4 EXXON CO USA	210	6.71	435	2447.05	69.2
30	111	14	2	7 MONTANA SULFUR & CHEMICAL	328	3.5	650	305.95	31.8
30	111	15	2	1 J E CORETTE	350	11.51	315	10404.99	100
31	1	42	1	1 HASTINGS ENERGY CENT	503	19.68	262	28359.38	93.23
31	25	2	129	0 ASH GROVE CEMENT CO	86	3.99	167	598.42	47.86
31	25	2	138	0 ASH GROVE CEMENT CO	86	3.99	167	598.42	47.86
31	53	1	8	3 LON WRIGHT	196	10.03	300	3160.48	40
31	55	2	1	3 NORTH OMAHA	204	14.49	293	19788.32	120
31	55	2	2	3 NORTH OMAHA	204	14.49	293	19788.32	120
31	55	2	3	3 NORTH OMAHA	204	14.49	293	19788.32	120

31	55	2	4	1 NORTH OMAHA	204	9.57	276	8703.62	121
31	55	2	5	2 NORTH OMAHA	204	11.51	274	12485.98	120
31	55	5	2	0 GREAT LAKES CHEMICAL	70	2.61	148	139.11	26
31	79	606	1	1 PLATTE	412	11.99	250	6097.1	54
31	109	5	1	1 SHELDON	176	11.99	290	6774.55	60
31	109	5	2	2 SHELDON	176	11.99	323	8016.55	71
31	111	19	1	2 GERALD GENTLEMAN	550	28.01	246	34506.84	56
31	111	19	2	1 GERALD GENTLEMAN	550	28.01	242	34506.84	56
31	131	36	1	1 NEBRASKA CITY	700	23.67	288	43123.45	98
32	3	3	3	0 CHEMICAL LIME COMPANY - APE:	34	4.44	230	785.15	50.71
32	3 P001		1	2 MOHAVE	500	32.51	260	74708.04	90
32	3 P001		2	1 MOHAVE	500	32.51	260	74708.04	90
32	3 P002		1	1 REID GARDNER	200	12.51	207	6022.84	49
32	3 P002		2	2 REID GARDNER	240	9.51	207	6037.69	85
32	3 P002		3	3 REID GARDNER	270	9.51	201	6676.98	94
32	3 P002		4	4 REID GARDNER	500	17	153	17477.51	77
32	13	5001	1	2 NORTH VALMY	500	19.02	269	19036.48	67
32	13	5001	2	1 NORTH VALMY	455	17	266	17477.51	77
33	7	1	1	123 CROWN VANTAGE CORPORATIO	213	10.5	409	3619.48	41.8
33	7	1	2	123 CROWN VANTAGE CORPORATIO	213	10.5	409	3619.48	41.8
33	13	26	1	1 MERRIMACK	225	8.52	245	5701.25	100
33	13	26	2	2 MERRIMACK	317	14.49	300	15006.14	91
33	15	12	4	1 SCHILLER	226	7.98	390	3701.08	74
33	15	12	5	3 SCHILLER	226	7.98	400	3751.09	75
33	15	12	6	2 SCHILLER	226	7.98	390	3751.09	75
33	15	54	1	2 NEWINGTON	410	20.75	550	33140.05	98
34	1	70011	2	59531 SCOTT PAPER COMPANY	32	2.05	375	8.94	2.71
34	1	70011	3	59532 SCOTT PAPER COMPANY	43	1.72	495	10.08	4.34
34	1	70011	4	59533 SCOTT PAPER COMPANY	43	2.26	495	11.75	2.93
34	3	14	1	59632 GARDEN STATE PAPER CO., INC.	151	5.49	385	33.38	1.41
34	3	14	4	59630 GARDEN STATE PAPER CO., INC.	54	2.05	225	0.79	0.24
34	9	1	1	2 B L ENGLAND	475	13.59	290	9863.67	68
34	9	1	2	3 B L ENGLAND	475	13.82	290	12600.46	84
34	9	1	3	1 B L ENGLAND	475	13.01	300	9970.27	75
34	15	55004	129	60869 COASTAL EAGLE POINT OIL COM	54	2.05	225	0.79	0.24
34	15	55006	32	60967 MOBIL OIL CORPORATION	54	2.05	225	0.79	0.24
34	17	21	2	2 HUDSON	498	17.52	279	27482.99	114

34	17	10635	228	61546 EXXON COMPANY U S A	65	4.52	342	11.71	0.73
34	21	1	1	2 MERCER	326	17.55	269	21771.46	90
34	21	1	2	1 MERCER	325	17.55	269	21771.46	90
34	21	60248	1	61776 STONY BROOK REGIONAL SEWE	54	2.05	225	0.79	0.24
34	21	60248	2	61776 STONY BROOK REGIONAL SEWE	54	2.05	225	0.79	0.24
34	23	15007	13	61801 JERSEY CENTRAL POWER & LIGH	40	7.75	800	760.9	16.13
34	23	15007	14	61796 JERSEY CENTRAL POWER & LIGH	11	0.43	95	10.09	69.49
34	23	15007	17	61801 JERSEY CENTRAL POWER & LIGH	40	7.75	800	760.9	16.13
34	23	15007	18	61801 JERSEY CENTRAL POWER & LIGH	40	7.75	800	760.9	16.13
34	23	15007	19	61801 JERSEY CENTRAL POWER & LIGH	40	7.75	800	760.9	16.13
34	23	15008	10	61808 PSE & G CO. ATTN ENVIRONMET,	43	0.32	1025	5.59	69.49
34	23	15008	11	61808 PSE & G CO. ATTN ENVIRONMET,	43	0.32	1025	5.59	69.49
34	23	15008	12	61808 PSE & G CO. ATTN ENVIRONMET,	43	0.32	1025	5.59	69.49
34	23	15008	13	61808 PSE & G CO. ATTN ENVIRONMET,	43	0.32	1025	5.59	69.49
34	23	15008	8	61808 PSE & G CO. ATTN ENVIRONMET,	43	0.32	1025	5.59	69.49
34	23	15008	9	61808 PSE & G CO. ATTN ENVIRONMET,	43	0.32	1025	5.59	69.49
34	23	15017	21	61904 HERCULES INCORPORATED	161	6.67	157	100.63	2.88
34	23	15017	22	61904 HERCULES INCORPORATED	161	6.67	157	100.63	2.88
34	33	1	8	3 DEEPWATER	223	10.65	290	3652.36	41
34	33	65075	10	63329 DUPONT DE NEMOURS, E.I., & CC	65	3.01	715	3.98	0.56
34	39	40003	1	63593 EXXON CORPORATION	54	2.05	225	0.79	0.24
34	39	40009	5	63735 MERCK & CO., INC.	97	10.01	300	94.44	1.2
34	39	40009	6	63735 MERCK & CO., INC.	97	10.01	300	94.44	1.2
34	39	40011	1	63750 PSE & G CO. ATTN ENVIRONMET,	97	4.96	385	434.55	22.49
34	39	40011	2	63750 PSE & G CO. ATTN ENVIRONMET,	97	4.96	385	434.55	22.49
34	39	40011	3	63751 PSE & G CO. ATTN ENVIRONMET,	97	4.96	385	435.13	22.52
34	39	40011	4	63748 PSE & G CO. ATTN ENVIRONMET,	97	4.96	350	427.98	22.15
34	39	40011	5	63747 PSE & G CO. ATTN ENVIRONMET,	54	2.05	225	0.79	0.24
34	39	40011	6	63749 PSE & G CO. ATTN ENVIRONMET,	97	4.96	375	530.97	27.48
35	15	2	23	23 ARCO PERMIAN/EMPIRE ABO GA	140	4	1100	138.23	11
35	15	6	1	1 GPM GAS/INDIAN HILLS AMINE PL	150	1	1832	47.12	60
35	15	8	1	1 MARATHON OIL/INDIAN BSN GAS	122	3	880	424.12	60
35	15	10	21	21 NAVAJO REFINING/ARTESIA REFI	150	3	600	531.56	75.2
35	15	10	41	41 NAVAJO REFINING/ARTESIA REFI	150	2	1350	229.65	73.1
35	15	11	24	24 GPM GAS/ARTESIA GAS PLANT	100	4	1000	339.29	27
35	15	24	7	7 AGAVE ENERGY/YATES PLANT	50	1	1350	1.73	2.2
35	17	1	1	1 PHELPS DODGE/CHINO MINES	625	20	125	5466.38	17.4

35	17	1	4	4 PHELPS DODGE/CHINO MINES__	10	1	72	10.3	13.12
35	17	1	15	1 PHELPS DODGE/CHINO MINES__	625	20	125	5466.38	17.4
35	23	3	1	1 PHELPS DODGE/HIDALGO SMELT	250	6	175	1999	70.7
35	23	3	2	2 PHELPS DODGE/HIDALGO SMELT	600	17	185	6514.34	28.7
35	23	3	4	4 PHELPS DODGE/HIDALGO SMELT	200	6	175	1501.37	53.1
35	25	4	12	12 CONOCO/MALJAMAR GAS PLANT	150	1	1800	47.12	60
35	25	8	25	25 SID RICHARDSON GASOLINE/JAL	125	3	450	103.2	14.6
35	25	44	15	15 GPM GAS/EUNICE GAS PLANT __	160	5	1200	170.82	8.7
35	25	46	1	1 GPM GAS/LEE GAS PLANT _____	100	2	650	18.85	6
35	25	51	33	33 TEXACO/EUNICE SOUTH GAS PL/	150	1	1400	32.44	41.3
35	25	52	54	54 TEXACO/EUNICE NORTH GAS PL/	150	2	1400	191.64	61
35	25	55	17	17 TEXACO/BUCKEYE GASOLINE PL	141	1	2250	51.52	65.6
35	25	60	24	24 WARREN PETROLEUM/EUNICE G	165	1	1800	51.84	66
35	25	61	38	38 WARREN PETROLEUM/MONUME	100	6	1140	565.49	20
35	25	63	1	1 WARREN PETROLEUM/SAUNDER	157	1	1832	51.84	66
35	25	64	1	1 WARREN PETROLEUM/VADA GAS	180	4	1832	834.41	66.4
35	31	8	4	4 GIANT REFINING/CINIZA REFINER	120	8	550	251.33	5
35	31	82	1	1 ESCALANTE	450	19.99	126	15692.3	50
35	45	2	1	2 FOUR CORNERS	250	19.41	125	26630.82	90
35	45	2	2	2 FOUR CORNERS	250	19.41	125	26630.82	90
35	45	2	3	1 FOUR CORNERS	250	14.97	130	17072.86	97
35	45	2	4	3 FOUR CORNERS	380	28.5	145	51035.29	80
35	45	2	5	3 FOUR CORNERS	380	28.5	145	51035.29	80
35	45	247	9	9 WESTERN GAS RESOURCES/SAN	290	2	800	41.22	13.12
35	45	902	1	1 SAN JUAN	400	18.02	175	22443.12	88
35	45	902	2	2 SAN JUAN	400	18.02	175	22698.15	89
35	45	902	3	3 SAN JUAN	400	25	175	47124	96
35	45	902	4	3 SAN JUAN	400	25	175	47124	96
36	1	261	1	1 TOBIN PACKING CO INC	249	3.28	449	254.59	30.13
36	1	366	2	1 ALBANY	336	13.01	336	6779.78	51
36	5 X3FS		1	1 CENTER FOR HOUSING PARTNE	66	3.28	449	55.43	6.56
36	7	259 00G		7 ANITEC IMAGE CORPORATION	200	9.84	343	998.49	13.13
36	7	292	11	1 GOUDHEY	282	15.01	270	9201.44	52
36	7	292	12	1 GOUDHEY	282	15.01	270	9201.44	52
36	7	292	13	1 GOUDHEY	282	15.01	270	9201.44	52
36	13	325	1	2 DUNKIRK	312	13.49	320	7860.99	55
36	13	325	2	2 DUNKIRK	312	13.49	320	7860.99	55

36	13	325	3	1 DUNKIRK		310	17.98	290	21581.88	85
36	13	325	4	1 DUNKIRK		310	17.98	290	21581.88	85
36	13	340	10	1 S A CARLSON		494	18.32	270	20600.17	78.15
36	13	340	12	1 S A CARLSON		494	18.32	270	20600.17	78.15
36	13	340	9	1 S A CARLSON		494	18.32	270	20600.17	78.15
36	17	83	1	1 JENNISON		220	9.03	325	2433.6	38
36	17	83	2	1 JENNISON		220	9.03	325	2433.6	38
36	17	83	3	1 JENNISON		220	9.03	325	2433.6	38
36	17	83	4	1 JENNISON		220	9.03	325	2433.6	38
36	29	161	1	1 BETHENERGY LACK COKE		226	9.84	556	1498.12	19.7
36	29	161	2	2 BETHENERGY LACK COKE		249	9.84	550	1498.12	19.7
36	29	161	3	3 BETHENERGY LACK COKE		249	13.12	550	3993.64	29.54
36	29	161	18	18 BETHENERGY LACK COKE		125	9.84	500	2073.8	27.27
36	29	1280	8	8 TONAWANDA COKE CORP		180	9.84	390	1498.12	19.7
36	29	1381	7	7 OUTOKUMPU AMERICAN BRASS		125	6.56	340	554.63	16.41
36	29	1700	63	1 C R HUNTLEY		350	17.73	320	15060.46	61
36	29	1700	64	1 C R HUNTLEY		350	17.73	320	15060.46	61
36	29	1700	65	1 C R HUNTLEY		350	17.73	320	15060.46	61
36	29	1700	66	1 C R HUNTLEY		350	17.73	320	15060.46	61
36	29	1700	67	2 C R HUNTLEY		350	18.54	290	20787.44	77
36	29	1700	68	2 C R HUNTLEY		350	18.54	290	20787.44	77
36	31	105	16	16 TICONDEROGA MILL	TIC	200	9.84	431	3993.98	52.52
36	45	78	7	7 CHAMPION INTERNATIONAL COR		121	6.56	127	1109.61	32.83
36	45	78	8	8 CHAMPION INTERNATIONAL COR		121	6.56	127	1109.61	32.83
36	47 CE01	100		1 HUDSON AVENUE		356	15.22	300	11643.95	64
36	47 TNGT	1		1 THE NARROWS GENERATION ST.		56	19.69	930	8985.69	29.51
36	47 X02B	1		1 KINGS COUNTY HOSPITAL		249	9.84	376	749.06	9.85
36	47 X0NP	3		3 MARVIN GOLD MGMT.		220	3.28	151	257.29	30.45
36	47 X33J	1		1 1927 FLATBUSH CO % DAVID MAI		72	4.13	367	407.92	30.45
36	47 X4CO	1		1 2015 BEDFORD AVE. REALTY COI		69	4.13	383	407.92	30.45
36	47 X6QA	3		3 ZACHARAKOS, JAMES		69	3.28	151	257.29	30.45
36	47 Y003	1		1 KINGSBORO PSYCH CTR		154	5.19	475	544.12	25.72
36	53	111	1	1 COLGATE UNIVERSITY	HA	151	6.56	500	110.86	3.28
36	55	258	1	1 KODAK PARK DIV	ROCF	367	9.84	390	2746.05	36.11
36	55	258	2	2 KODAK PARK DIV	ROCF	367	13.12	300	8875.51	65.65
36	55	258	3	3 KODAK PARK DIV	ROCF	407	13.12	305	6213.53	45.96
36	55	258	4	4 KODAK PARK DIV	ROCF	407	16.4	300	9013.66	42.67

36	55	1152	12	1 ROCHESTER 3	447	17.53	274	19069.39	79.01	
36	55	1357	9	9 UNIVERSITY OF ROCHESTER	138	3.28	511	610.23	72.22	
36	55	1357 00A		1 UNIVERSITY OF ROCHESTER	138	3.28	493	582.43	68.93	
36	55	1752	1	2 ROCHESTER 7	250	15.76	300	7803.03	40	
36	55	1752	2	2 ROCHESTER 7	250	15.76	300	7803.03	40	
36	55	1752	3	1 ROCHESTER 7	250	15.76	290	8778.41	45	
36	55	1752	4	1 ROCHESTER 7	250	15.76	290	8778.41	45	
36	61 CE02		120	1 74TH STREET	494	16	363	20307.3	101	
36	61 CE04		60	2 EAST RIVER	370	21.23	325	23363.33	66	
36	61 HA62		1	1 VLADECK #2	105	3.28	417	217.32	25.72	
36	61 HH07		2	2 METROPOLITAN HOSPITAL	236	6.56	500	869.3	25.72	
36	63	20	1	1 LOCKPORT PAPER BOARD CORP	161	9.84	440	749.06	9.85	
36	63	337 0ZZ		998 CARBIDE/GRAFITE GROUP	36	8.24	100	1652.6	30.99	
36	63	383 00D		4 HOOKER EFW PLANT	NI	226	9.84	314	3244.92	42.67
36	63	383 0D1		2 HOOKER EFW PLANT	NI	165	7.08	387	1385.01	35.18
36	63	430	1	1 KINTIGH	613	26.68	125	39134.57	70	
36	65	427	2	2 ROME MFG CO DIV	RON	66	3.28	725	83.23	9.85
36	71	370	3	2 DANSKAMMER		240	9.44	302	6299.08	90
36	71	370	4	3 DANSKAMMER		240	12.57	304	11168.73	90
36	71	475	1	1 ROSETON		260	22.99	280	24906.92	60
36	71	475	2	1 ROSETON		260	22.99	280	24906.92	60
36	75	115	6	1 OSWEGO		700	23.99	315	40681.21	90
36	75	154 00L		12 MILLER EASTERN BREWERY		226	6.56	327	1109.61	32.83
36	81 CE01		40	2 ASTORIA		299	14.09	280	11226.53	72
36	81 CE01		50	3 ASTORIA		299	14.09	280	11538.37	74
36	81 CE03		30	3 RAVENSWOOD		499	23.18	270	48108.59	114
36	81 PANY		1	3 CHARLES POLETTI		300	15.01	298	21234.08	120
36	81 XA0L		1	0 79 KEW GARDENS ASSOCIATES		60	4.13	383	407.92	30.45
36	83	261	1	1 FORT ORANGE PAPER CO., INC.		112	6.56	368	776.69	22.98
36	85 DMH1		1	1 WILLOWBROOK DEV CTR		190	5.19	581	544.12	25.72
36	87	720	4	2 LOVETT		475	11	249	11023.87	116
36	87	720	5	3 LOVETT		475	11	285	10358.64	109
36	91	145	7	7 HUDSON RIVER MILL		112	9.84	359	2246.42	29.54
36	91	160	1	0 SARATOGA NATIONAL HIST PARK		60	4.13	383	407.92	30.45
36	97	6 00F		6 AKZO SALT -WATKINS GLEN REF		226	9.84	350	1498.12	19.7
36	97	15	1	1 CARGILL SALT DIVISION		125	9.84	300	749.06	9.85
36	101	110	3	1 HICKLING		220	9.03	325	2433.6	38

36	101	110	4	1 HICKLING	220	9.03	325	2433.6	38
36	103	1922	1	1 NORTHPORT	600	16.74	295	17167.08	78
36	103	1922	2	1 NORTHPORT	600	16.74	295	17167.08	78
36	103	1922	3	1 NORTHPORT	600	16.74	295	17167.08	78
36	103	1922	4	1 NORTHPORT	600	16.74	295	17167.08	78
36	103	3228	3	1 PORT JEFFERSON	425	10.28	280	10706.98	129
36	103	3228	4	2 PORT JEFFERSON	425	10.28	330	10706.98	129
36	109	1	4	4 CU CENTRAL HEATING PLANT	226	9.84	390	1247.93	16.41
36	109	120	1	1 MILLIKEN	374	11	120	6082.14	64
36	109	120	2	1 MILLIKEN	374	11	120	6082.14	64
36	117	43	24	24 GARLOCK INC	89	6.56	340	1331.33	39.39
36	119	1564 OZZ		998 WESTCHESTER MED CENTER (C	128	6.56	32	110.86	3.28
36	121	35	0	5 MORTON SALT COMPANY	125	9.84	390	1247.93	16.41
36	121	99	1	1 IONDECK SILVER SPRINGS ENER	135	13.12	219	6656.97	49.24
36	121	99	4	4 IONDECK SILVER SPRINGS ENER	112	3.28	280	251.8	29.8
36	123	28	4	2 GREENIDGE	250	13.01	300	7045.65	53
36	123	28	5	2 GREENIDGE	250	13.01	300	7045.65	53
36	123	28	6	1 GREENIDGE	227	13.01	235	8773.83	66
37	13	71	11	101 PCS PHOSPHATE COMPANY, INC	110	5.5	180	1582.78	66.62
37	13	71	12	102 PCS PHOSPHATE COMPANY, INC	110	5.5	180	1582.78	66.62
37	13	71	13	103 PCS PHOSPHATE COMPANY, INC	145	10.5	180	2620.22	30.26
37	13	71	14	104 PCS PHOSPHATE COMPANY, INC	164	9.7	180	2480.03	33.56
37	17	9	1	1 E I DU PONT - FAYETTEVILLE WO	100	5.6	32	886.69	36
37	17	43	1	1 COGENTRIX LEASING CORP - ELI	150	7	325	2031.99	52.8
37	19	13	2	62 E.I.DUPONT DE NEMOURS & CO.,	175	19.6	380	14331.67	47.5
37	19	13	2	63 E.I.DUPONT DE NEMOURS & CO.,	175	19.6	380	14331.67	47.5
37	19	13	2	64 E.I.DUPONT DE NEMOURS & CO.,	175	19.6	380	14331.67	47.5
37	21	628	1	1 ASHEVILLE	392	10.82	250	11677.48	127
37	21	628	2	2 ASHEVILLE	392	10.82	280	11585.53	126
37	21	724	1	1 BASF-ENKA PLANT	250	13.5	240	1467.18	10.25
37	21	724	3	2 BASF-ENKA PLANT	250	13.5	235	1467.18	10.25
37	25	113	2	2 KANNAPOLIS ENERGY PARTNER	200	12	200	2013.14	17.8
37	25	113	3	3 KANNAPOLIS ENERGY PARTNER	128	8	122	1427.54	28.4
37	35	73	1	1 MARSHALL	281	15.26	258	15911.8	87
37	35	73	2	1 MARSHALL	281	15.26	258	15911.8	87
37	35	73	3	2 MARSHALL	281	19.51	256	26905.93	90
37	35	73	4	2 MARSHALL	281	19.51	256	26905.93	90

37	37	63	5	1 CAPE FEAR	201	11.99	280	8581.1	76
37	37	63	6	2 CAPE FEAR	201	15.01	234	10086.19	57
37	45	28	1	1 CLIFFSIDE	154	10.52	360	3563.74	41
37	45	28	2	1 CLIFFSIDE	154	10.52	360	3563.74	41
37	45	28	3	2 CLIFFSIDE	159	10.52	310	5041.39	58
37	45	28	4	2 CLIFFSIDE	159	10.52	310	5041.39	58
37	45	28	5	3 CLIFFSIDE	500	20.84	270	29676.01	87
37	49	104	55	133 WEYERHAEUSER COMPANY	241	10	390	4374.68	55.7
37	51	106	1	1 MONSANTO AGRICULTURAL PRC	150	10	600	5497.8	70
37	67	405	1	1 R. J. R. TOBACCO CO. - GROUP 9	230	12.5	500	4172.44	34
37	67	732	1	1 CORN PRODUCTS	150	6	360	2389.19	84.5
37	67	745	2	2 R. J. REYNOLDS TOBACCO - TVIL	260	5.5	325	1358.98	57.2
37	71	39	1	1 G G ALLEN	252	11	309	9693.41	102
37	71	39	2	1 G G ALLEN	252	11	309	9693.41	102
37	71	39	3	2 G G ALLEN	252	13.49	271	19152.24	134
37	71	39	4	2 G G ALLEN	252	13.49	271	19152.24	134
37	71	39	5	3 G G ALLEN	252	13.49	273	17008.33	119
37	71	40	10	2 RIVERBEND	227	6.38	280	3676.46	115
37	71	40	7	1 RIVERBEND	227	5.97	285	2855.22	102
37	71	40	8	1 RIVERBEND	227	5.97	285	2855.22	102
37	71	40	9	2 RIVERBEND	227	6.38	280	3676.46	115
37	71	78	1	0 FMC CORP LITHIUM DIV	45	2.04	184	75.4	23.07
37	71	78	16	14 FMC CORP LITHIUM DIV	100	5.5	350	1259.19	53
37	81	863	3	3 CONE MILLS CORP-WHITE OAK P	175	12	385	983.95	8.7
37	83	7	1	1 CHAMPION INTERNATIONAL COR	213	10.32	150	2802.17	33.5
37	83	7	2	2 CHAMPION INTERNATIONAL COR	213	5	427	1452.99	74
37	83	174	1	1 ROANOKE VALLEY PROJECT	375	12	165	7916.83	70
37	85	10	1	1 SWIFT TEXTILES, INC. - MAIN PLA	32	4.25	340	780.25	55
37	87	159	1	1 CHAMPION INT CORP	230	15.3	486	3085.07	16.78
37	87	159	2	1 CHAMPION INT CORP	230	15.3	486	3085.07	16.78
37	87	159	3	2 CHAMPION INT CORP	146	8.7	400	2835.02	47.69
37	87	159	4	3 CHAMPION INT CORP	133	7.8	387	2401.13	50.25
37	87	159	12	9 CHAMPION INT CORP	275	7.5	360	2943.19	66.62
37	107	39	1	1 E I DUPONT CO INC	100	4	352	666.02	53
37	117	69	20	32 WEYERHAEUSER COMPANY	250	18	328	6361.74	25
37	117	69	21	33 WEYERHAEUSER COMPANY	250	9	350	6425.36	101
37	117	69	23	35 WEYERHAEUSER COMPANY	175	9	107	3562.57	56

37	127	225	1	1 AMERICAN ROCKWOOL INCORPC	109	6	180	678.59	24
37	129	36	1	3 L V SUTTON	550	17.98	300	17519.41	69
37	129	36	2	1 L V SUTTON	494	18.32	270	20600.17	78.15
37	129	36	3	4 L V SUTTON	552	16.51	298	21622.53	101
37	129	55	1	1 OCCIDENTAL CHEMICAL CORPOI	175	14	277	4448.82	28.9
37	129	83	1	0 ARTEVA SPECIALTIES SARL	41	4.35	162	279.85	18.83
37	129	118	1	0 KOCH SULFUR PRODUCTS - SULI	41	4.35	162	279.85	18.83
37	133	11	2	3 CAMP LEJEUNE MARINE CORP B/	148	6.5	350	471.2	14.2
37	145	29	1	1 ROXBORO	400	12.67	245	17146.8	136
37	145	29	2	2 ROXBORO	400	18.98	247	29142.08	103
37	145	29 3A		3 ROXBORO	800	23.99	253	36161.08	80
37	145	29 4A		4 ROXBORO	800	23.99	268	36161.08	80
37	145	45 1A		1 MAYO	800	23.99	240	42037.25	93
37	145	56	1	1 COGENTRIX OF NORTH CAROLIN	197	15.02	315	10627.65	59.98
37	155	147	1	1 W H WEATHERSPOON	200	12.51	294	6268.67	51
37	155	147	2	1 W H WEATHERSPOON	200	12.51	294	6268.67	51
37	155	147	3	2 W H WEATHERSPOON	200	16	278	4021.25	20
37	155	166	1	1 COGENTRIX LEASING CORP - LUI	150	6.92	325	2034.32	54.09
37	157	15	1	1 DAN RIVER	180	10.52	310	5910.6	68
37	157	15	2	1 DAN RIVER	180	10.52	310	5910.6	68
37	157	15	3	2 DAN RIVER	188	9.03	280	3970.62	62
37	159	4	5	1 BUCK	176	10.52	360	3563.74	41
37	159	4	6	1 BUCK	176	10.52	360	3563.74	41
37	159	4	7	1 BUCK	176	10.52	360	3563.74	41
37	159	4	8	2 BUCK	216	7.98	284	3350.98	67
37	159	4	9	2 BUCK	216	7.98	284	3350.98	67
37	165	48	5	5 WESTPOINT STEVENS - WAGRAM	84	5	350	451.61	23
37	167	4	14	14 ALUMINUM COMPANY OF AMERIC	35	2	228	152.37	48.5
37	169	4	1	1 BELEWS CREEK	600	24.49	260	53228.83	113
37	169	4	2	1 BELEWS CREEK	600	24.49	260	53228.83	113
37	175	56	5	3 P. H. GLATFELTER CO. - ECUSTA	150	5	385	650.31	33.12
37	175	56	6	6 P. H. GLATFELTER CO. - ECUSTA	151	6	400	2968.25	104.98
37	191	17	1	2 LEE	300	13.49	250	6431.72	45
37	191	17	2	2 LEE	300	13.49	250	6431.72	45
37	191	17	3	1 LEE	300	11.51	255	12590.03	121
38	35	3	3	3 UNIV. OF NORTH DAKOTA HEATIN	160	6.6	350	2333.26	68.2
38	35	3	5	5 UNIV. OF NORTH DAKOTA HEATIN	113	4.7	300	310.56	17.9

38	35	3	7	3 UNIV. OF NORTH DAKOTA HEATIN	160	6.6	350	2333.26	68.2
38	55	17	1	1 COAL CREEK	658	22	210	33071.62	87
38	55	17	2	1 COAL CREEK	658	22	210	33071.62	87
38	57	1	1	1 LELAND OLDS	350	17.48	385	14878.72	62
38	57	1	2	2 LELAND OLDS	500	22	370	32691.49	86
38	57	4	1	1 STANTON	255	15.01	280	8493.63	48
38	57	4	10	1 STANTON	255	15.01	280	8493.63	48
38	57	11 B1		2 ANTELOPE VALLEY	600	23.01	185	27861.14	67
38	57	11 B2		1 ANTELOPE VALLEY	600	23.01	145	26197.79	63
38	57	12 B1		1 COYOTE	498	20.99	227	30104.75	87
38	57	13	1	1 DAKOTA GASIFICATION COMPAN	400	16	385	5482.97	27.27
38	57	13	2	1 DAKOTA GASIFICATION COMPAN	400	16	385	5482.97	27.27
38	57	13	3	1 DAKOTA GASIFICATION COMPAN	400	16	385	5482.97	27.27
38	57	13	9	2 DAKOTA GASIFICATION COMPAN	200	14.5	1300	4314.86	26.13
38	59	1 B2		2 R M HESKETT	300	11.99	340	7226.19	64
38	65	1 B1		1 MILTON R YOUNG	300	18.98	325	16975.97	60
38	65	1 B2		2 MILTON R YOUNG	550	25	163	27979.88	57
38	67	3	1	1 AMERICAN CRYSTAL SUGAR: DR.	100	10	430	2763.04	35.18
38	97	19	1	1 AMERICAN CRYSTAL SUGAR: HIL	198	5.5	330	835.82	35.18
38	97	19	3	3 AMERICAN CRYSTAL SUGAR: HIL	98	7	248	2064.31	53.64
39	1	5001	1	1 J M STUART	800	19.02	280	30117.42	106
39	1	5001	2	1 J M STUART	800	19.02	280	30117.42	106
39	1	5001	3	1 J M STUART	800	19.02	280	30117.42	106
39	1	5001	4	1 J M STUART	800	19.02	280	30117.42	106
39	1	5003	2	1 KILLEN STATION	900	32.99	250	24788.69	29
39	7	5001	10	2 ASHTABULA	400	21.5	250	29044.09	80
39	7	5001	11	2 ASHTABULA	400	21.5	250	29044.09	80
39	7	5001	7	1 ASHTABULA	373	17	255	11576.01	51
39	7	5001	8	2 ASHTABULA	400	21.5	250	29044.09	80
39	7	5001	9	2 ASHTABULA	400	21.5	250	29044.09	80
39	9	5003	1	1 OHIO UNIVERSITY	150	8	410	502.66	10
39	11	5004	6	2 ST MARYS	494	18.32	270	20600.17	78.15
39	13	5002	5	1 R E BURGER	850	21.5	344	34489.86	95
39	13	5002	6	1 R E BURGER	850	21.5	344	34489.86	95
39	13	5002	7	1 R E BURGER	850	21.5	344	34489.86	95
39	13	5002	8	1 R E BURGER	850	21.5	344	34489.86	95
39	13	5005	1	1 OHIO VALLEY COAL CO-POWHAT	110	6.7	70	2665.4	75.6

39	17	5002	21	21 AK STEEL CORPORATION	86	7	450	9501.85	246.9
39	17	5002	22	22 AK STEEL CORPORATION	86	7	450	9501.85	246.9
39	17	5002	23	23 AK STEEL CORPORATION	86	7	450	9501.85	246.9
39	17	5002	24	24 AK STEEL CORPORATION	86	7	450	9501.85	246.9
39	17	5002	33	33 AK STEEL CORPORATION	380	19.8	375	1939.82	6.3
39	17	5002	39	39 AK STEEL CORPORATION	130	11.3	125	3449.9	34.4
39	17	5008	7	7 CHAMPION INTERNATIONAL-HAM	220	11	350	3497.23	36.8
39	17	5008	8	8 CHAMPION INTERNATIONAL-HAM	220	11	350	3497.23	36.8
39	17	5009	8	3 HAMILTON	163	7.48	325	1757.74	40
39	17	5009	9	4 HAMILTON	167	10.52	322	3563.74	41
39	17	5010	9	9 ARMCO STEEL COMPANY, L.P.	135	6	423	545.7	19.3
39	17	5010	10	10 ARMCO STEEL COMPANY, L.P.	121	8.5	533	902.25	15.9
39	17	5010	11	11 ARMCO STEEL COMPANY, L.P.	134	8	525	1548.18	30.8
39	17	5010	12	12 ARMCO STEEL COMPANY, L.P.	134	8	525	1548.18	30.8
39	17	5010	13	13 ARMCO STEEL COMPANY, L.P.	308	11	710	1045.37	11
39	17	5010	14	14 ARMCO STEEL COMPANY, L.P.	308	11	710	1045.37	11
39	25	5001	1	1 WALTER C BECKJORD	300	11.99	308	6097.1	54
39	25	5001	2	1 WALTER C BECKJORD	300	11.99	308	6097.1	54
39	25	5001	3	3 WALTER C BECKJORD	375	11.99	309	7677.82	68
39	25	5001	4	2 WALTER C BECKJORD	375	11.99	280	9823.1	87
39	25	5001	5	4 WALTER C BECKJORD	452	18.98	300	37064.2	131
39	25	5001	6	4 WALTER C BECKJORD	452	18.98	300	37064.2	131
39	25	6019	1	1 W H ZIMMER	573	40.01	147	65377.96	52
39	31	5001	1	1 CONESVILLE	450	14	300	14162.33	92
39	31	5001	2	1 CONESVILLE	450	14	300	14162.33	92
39	31	5001	3	2 CONESVILLE	450	17.48	290	9599.17	40
39	31	5001	4	4 CONESVILLE	800	26	290	44067.22	83
39	31	5001	5	3 CONESVILLE	800	26	125	41943.5	79
39	31	5001	6	3 CONESVILLE	800	26	125	41943.5	79
39	35	1.32E+09 B004		71150 LTV STEEL COMPANY, INC.	150	7	570	726.59	18.88
39	35	1.32E+09 B005		71150 LTV STEEL COMPANY, INC.	150	7	570	726.59	18.88
39	35	1.32E+09 B007		71150 LTV STEEL COMPANY, INC.	150	7	570	726.59	18.88
39	35	1.32E+09 B010		71144 LTV STEEL COMPANY, INC.	85	7	570	1323.49	34.39
39	35	1.32E+09 B011		71144 LTV STEEL COMPANY, INC.	85	7	570	1323.49	34.39
39	35	1.32E+09 B012		71149 LTV STEEL COMPANY, INC.	125	10	500	3004.94	38.26
39	35	1.32E+09 B001		71180 CLEVELAND THERMAL ENERGY C	314	12	575	1777.89	15.72
39	35	1.32E+09 B002		71180 CLEVELAND THERMAL ENERGY C	314	12	575	1777.89	15.72

39	35	1.32E+09	B003	71182	CLEVELAND THERMAL ENERGY C	314	12	592	1872.9	16.56
39	35	1.32E+09	B004	71181	CLEVELAND THERMAL ENERGY C	314	12	585	1881.94	16.64
39	35	1.32E+09	B002	71243	LTV STEEL COMPANY, INC.	146	10.3	480	2749.66	33
39	35	1.32E+09	B003	71243	LTV STEEL COMPANY, INC.	146	10.3	480	2749.66	33
39	35	1.32E+09	B004	71256	LTV STEEL COMPANY, INC.	225	10.8	354	3500.38	38.21
39	35	1.32E+09	B005	71244	LTV STEEL COMPANY, INC.	150	15	480	2899.89	16.41
39	35	1.32E+09	B006	71244	LTV STEEL COMPANY, INC.	150	15	480	2899.89	16.41
39	35	1.32E+09	B007	71232	LTV STEEL COMPANY, INC.	123	11.9	310	2166.58	19.48
39	35	1.32E+09	B009	71254	LTV STEEL COMPANY, INC.	225	8.8	570	1583.18	26.03
39	35	1.32E+09	B905	71258	LTV STEEL COMPANY, INC.	250	10	515	927.56	11.81
39	35	1.32E+09	B906	71258	LTV STEEL COMPANY, INC.	250	10	515	927.56	11.81
39	35	1.32E+09	B003	71298	MEDICAL CENTER COMPANY	192	13.5	647	667.03	4.66
39	35	1.32E+09	B004	71298	MEDICAL CENTER COMPANY	192	13.5	647	667.03	4.66
39	35	1.32E+09	B020	71353	FORD MOTOR CO CLEVELAND EM	137	15	387	6216.83	35.18
39	35	1.32E+09	B021	71353	FORD MOTOR CO CLEVELAND EM	137	15	387	6216.83	35.18
39	35	1.32E+09	B022	71353	FORD MOTOR CO CLEVELAND EM	137	15	387	6216.83	35.18
39	35	1.32E+09	B023	71353	FORD MOTOR CO CLEVELAND EM	137	15	387	6216.83	35.18
39	35	1.32E+09	B024	71353	FORD MOTOR CO CLEVELAND EM	137	15	387	6216.83	35.18
39	35	5017	18	1	LAKE SHORE	320	17	307	12029.97	53
39	45	5001	1	1	OHIO PAPERBOARD CORP	150	5	130	1083.85	55.2
39	53	5001	1	1	KYGER CREEK	1000	29.29	300	74117.77	110
39	53	5001	2	1	KYGER CREEK	1000	29.29	300	74117.77	110
39	53	5001	3	1	KYGER CREEK	1000	29.29	300	74117.77	110
39	53	5001	4	1	KYGER CREEK	1000	29.29	300	74117.77	110
39	53	5001	5	1	KYGER CREEK	1000	29.29	300	74117.77	110
39	53	5002	1	1	GEN J M GAVIN	830	41.99	125	66469.73	48
39	53	5002	2	1	GEN J M GAVIN	830	41.99	125	66469.73	48
39	61	5008	7	7	HENKEL CORPORATION-EMERY	150	8.5	295	1889.61	33.3
39	61	5044	1	1	JEFFERSON SMURFIT CORP.-LOC	116	6.8	450	831.66	22.9
39	61	5052	5-1	1	MIAMI FORT	282	13.54	321	21454.31	149
39	61	5052	5-2	1	MIAMI FORT	282	13.54	321	21454.31	149
39	61	5052	6	1	MIAMI FORT	282	13.54	321	21454.31	149
39	61	5052	7	2	MIAMI FORT	800	19.51	300	34080.84	114
39	61	5052	8	2	MIAMI FORT	800	19.51	300	34080.84	114
39	61	5054	1	1	E. I. DUPONT DE NEMOURS & CO	200	5	185	699.01	35.6
39	61	5058	4	4	PROCTER & GAMBLE CO	200	7	325	2701.62	70.2
39	69	5009	1	1	CAMPBELL SOUP COMPANY	74	6.5	520	2000.94	60.3

39	69	5009	2	2 CAMPBELL SOUP COMPANY	74	6.5	520	2000.94	60.3
39	77	3.39E+08	B003	72321 CENTRAL SOYA COMPANY, INC.	165	6	320	326.57	11.55
39	77	5006	2	2 CENTRAL SOYA	165	6	320	327.98	11.6
39	81	5002	1	1 CARDINAL	825	22	345	31551.09	83
39	81	5002	2	1 CARDINAL	825	22	345	31551.09	83
39	81	5002	3	2 CARDINAL	900	23.99	315	36161.08	80
39	81	5006	1	1 WHEELING PITTSBURGH STEEL	275	13.5	600	529.61	3.7
39	81	5006	2	2 WHEELING PITTSBURGH STEEL	275	13.5	600	529.61	3.7
39	81	5006	4	4 WHEELING PITTSBURGH STEEL	275	13.5	600	529.61	3.7
39	81	5006	5	5 WHEELING PITTSBURGH STEEL	148	6.5	475	434.7	13.1
39	81	5006	6	6 WHEELING PITTSBURGH STEEL	148	6.5	475	434.7	13.1
39	81	5006	7	7 WHEELING PITTSBURGH STEEL	148	6.5	475	434.7	13.1
39	81	5006	8	8 WHEELING PITTSBURGH STEEL	148	6.5	475	434.7	13.1
39	81	5006	9	9 WHEELING PITTSBURGH STEEL	148	6.5	475	434.7	13.1
39	81	5006	10	10 WHEELING PITTSBURGH STEEL	148	6.5	475	434.7	13.1
39	81	5006	12	12 WHEELING PITTSBURGH STEEL	148	6.5	525	467.88	14.1
39	81	5008	4	4 WHEELING PITTS STL STEUBENV	254	11.2	600	571.42	5.8
39	81	5008	5	5 WHEELING PITTS STL STEUBENV	254	11.2	600	571.42	5.8
39	81	5008	6	6 WHEELING PITTS STL STEUBENV	117	8	450	1216.43	24.2
39	81	5008	8	8 WHEELING PITTS STL STEUBENV	117	8	450	1216.43	24.2
39	81	5008	18	18 WHEELING PITTS STL STEUBENV	124	5	555	966.04	49.2
39	81	5010	1	2 W H SAMMIS	504	20.99	269	17993.64	52
39	81	5010	2	2 W H SAMMIS	504	20.99	269	17993.64	52
39	81	5010	3	1 W H SAMMIS	504	19.99	269	17889.22	57
39	81	5010	4	1 W H SAMMIS	504	19.99	269	17889.22	57
39	81	5010	5	3 W H SAMMIS	850	18.02	267	15812.19	62
39	81	5010	6	4 W H SAMMIS	850	18.02	272	15557.16	61
39	81	5010	7	5 W H SAMMIS	1000	26.75	272	31472.16	56
39	85	5007	4	2 PAINESVILLE	494	18.32	270	20600.17	78.15
39	85	5007	5	2 PAINESVILLE	494	18.32	270	20600.17	78.15
39	85	5012	1	1 EASTLAKE	540	11.99	300	8581.1	76
39	85	5012	2	1 EASTLAKE	540	11.99	300	8581.1	76
39	85	5012	3	1 EASTLAKE	540	11.99	300	8581.1	76
39	85	5012	4	2 EASTLAKE	540	16	300	15280.74	76
39	85	5012	5	3 EASTLAKE	600	23.99	285	29380.88	65
39	87	5014	1	1 SOUTH POINT ETHANOL	300	12	316	2318.5	20.5
39	87	5014	2	2 SOUTH POINT ETHANOL	300	12	316	2318.5	20.5

39	87	5014	3	3 SOUTH POINT ETHANOL	300	12	316	2318.5	20.5
39	93	5001	10	1 AVON LAKE	500	10.52	307	5997.52	69
39	93	5001	12	2 AVON LAKE	600	23.99	285	42941.28	95
39	93	5001	9	1 AVON LAKE	500	10.52	307	5997.52	69
39	93	5004	10	10 USS/KOBE STEEL CO. - LORAIN V	97	8	600	1884.96	37.5
39	93	5004	14	14 USS/KOBE STEEL CO. - LORAIN V	97	8	600	1884.96	37.5
39	93	5004	15	15 USS/KOBE STEEL CO. - LORAIN V	97	8	600	1884.96	37.5
39	93	5004	16	16 USS/KOBE STEEL CO. - LORAIN V	116	10	500	3196.58	40.7
39	93	5004	17	17 USS/KOBE STEEL CO. - LORAIN V	97	8	450	2468.04	49.1
39	93	5004	18	18 USS/KOBE STEEL CO. - LORAIN V	97	8	450	2468.04	49.1
39	93	5004	19	19 USS/KOBE STEEL CO. - LORAIN V	97	8	450	2468.04	49.1
39	95	5023	16	16 SUN REFINING & MARKETING CO	249	9.7	450	3111.12	42.1
39	95	5023 OBO		140 SUN REFINING & MARKETING CO	100	9.5	390	1665.74	23.5
39	95	5023 OBS		144 SUN REFINING & MARKETING CO	150	3.5	1200	278.05	28.9
39	95	5045	1	1 BAY SHORE	469	22.99	265	29888.31	72
39	95	5045	2	1 BAY SHORE	469	22.99	265	29888.31	72
39	95	5045	3	1 BAY SHORE	469	22.99	265	29888.31	72
39	95	5045	4	1 BAY SHORE	469	22.99	265	29888.31	72
39	95	5046	26	26 BP OIL COMPANY	250	11	400	2176.26	22.9
39	99	5014	4	4 YOUNGSTOWN THERMAL ENERG	125	5	435	899.28	45.8
39	109	5001	4	1 PIQUA	494	18.32	270	20600.17	78.15
39	109	5001	5	1 PIQUA	494	18.32	270	20600.17	78.15
39	113	5002	4	4 DAYTN POWR & LT CO LONGWR	160	10	375	1963.5	25
39	113	5038	2	2 APPLETON PAPERS INC.	100	6	340	916.09	32.4
39	113	5038	3	3 APPLETON PAPERS INC.	120	8.5	350	1214.35	21.4
39	113	5039	1	1 MIAMI PAPER CORPORATION	73	5.2	123	917.45	43.2
39	113	5041 H-3		1 O H HUTCHINGS	250	13.87	308	7705.73	51
39	113	5041 H-4		1 O H HUTCHINGS	250	13.87	308	7705.73	51
39	113	5041 H-5		2 O H HUTCHINGS	250	13.87	308	7705.73	51
39	113	5041 H-6		2 O H HUTCHINGS	250	13.87	308	7705.73	51
39	119	5002	2	2 MIDWEST PORTLAND CEMENT C	219	11	350	4000.91	42.1
39	123	5005	2	2 GENLIME GROUP L.P	105	6.5	375	1333.96	40.2
39	125	5001	14	14 LAFARGE CORPORATION	250	12	550	2544.7	22.5
39	125	5001	15	15 LAFARGE CORPORATION	250	12	450	2499.46	22.1
39	129	5001	9	1 PICWAY	288	13.91	283	7446.31	49
39	129	5002	2	2 PICKAWAY CORRECTIONAL INST	150	4	328	736.39	58.6
39	129	5006	1	1 CONTAINER CORPORATION OF A	200	10	317	1319.47	16.8

39	131	5001	1	1 PORTSMOUTH GASEOUS DIFFUS	109	6.5	290	431.38	13
39	131	5001	2	2 PORTSMOUTH GASEOUS DIFFUS	109	6.5	290	431.38	13
39	131	5001	3	3 PORTSMOUTH GASEOUS DIFFUS	109	6.5	290	431.38	13
39	133	5013	1	1 KENT STATE UNIVERSITY	175	7.7	370	568.11	12.2
39	139	5013	1	2 SHELBY	494	18.32	270	20600.17	78.15
39	139	5013	2	2 SHELBY	494	18.32	270	20600.17	78.15
39	141	5001	1	1 MEAD CORPORATION	475	14	313	10837.26	70.4
39	141	5001	2	2 MEAD CORPORATION	475	14	313	10837.26	70.4
39	141	5001	3	3 MEAD CORPORATION	475	14	313	10837.26	70.4
39	145	5006	8	8 NEW BOSTON COKE CORP	13	9	2000	833.39	13.1
39	145	5006	11	11 NEW BOSTON COKE CORP	210	9	350	833.39	13.1
39	151	5008	53	53 ASHLAND PETROLEUM COMPAN	185	23.5	514	1474.71	3.4
39	153	5030	1	1 AKZO NOBEL SALT INC	175	3.5	650	357.91	37.2
39	153	5030	2	2 AKZO NOBEL SALT INC	175	3.5	650	357.91	37.2
39	153	5030	3	3 AKZO NOBEL SALT INC	175	3.5	650	357.91	37.2
39	153	5030	4	4 AKZO NOBEL SALT INC	175	3.5	650	357.91	37.2
39	153	5032	10	10 B.F. GOODRICH CO., AKRON CHE	125	5	390	746.13	38
39	153	5041	17	17 GOODYEAR TIRE & RUBBER CO	235	12	349	825.61	7.3
39	153	5041	18	18 GOODYEAR TIRE & RUBBER CO	250	10.1	325	1626.41	20.3
39	153	5041	19	19 GOODYEAR TIRE & RUBBER CO	250	10.1	325	1626.41	20.3
39	155	5007	1	1 NILES	393	11	270	5511.94	58
39	155	5007	2	1 NILES	393	11	270	5511.94	58
39	155	5042	1	1 W C I STEEL, INC.	75	10	380	4735.96	60.3
39	157	5004	4	2 DOVER	494	18.32	270	20600.17	78.15
39	157	5006	1	1 UNION CAMP CORPORATION CHE	80	3.5	435	600.36	62.4
39	157	5006	2	2 UNION CAMP CORPORATION CHE	175	4.5	400	625.04	39.3
39	157	5023	1	1 CENTRAL FUEL CO.	40	6	230	240.33	8.5
39	167	5001	1	2 MUSKINGUM RIVER	828	25	315	55468.88	113
39	167	5001	2	2 MUSKINGUM RIVER	828	25	315	55468.88	113
39	167	5001	3	2 MUSKINGUM RIVER	828	25	315	55468.88	113
39	167	5001	4	2 MUSKINGUM RIVER	828	25	315	55468.88	113
39	167	5001	5	1 MUSKINGUM RIVER	828	22	306	28890.15	76
39	167	5003	1	1 SHELL CHEMICAL CO	155	6.4	367	1666.41	51.8
39	167	5003	2	2 SHELL CHEMICAL CO	155	6.4	367	1666.41	51.8
39	167	5015	4	4 DEGUSSA CORPORATION	165	8	445	477.52	9.5
39	167	7286	1	1 RICHARD H. GORSUCH	362	19.51	300	20029.97	67
39	167	7286	2	1 RICHARD H. GORSUCH	362	19.51	300	20029.97	67

39	167	7286	3	1 RICHARD H. GORSUCH	362	19.51	300	20029.97	67
39	167	7286	4	1 RICHARD H. GORSUCH	362	19.51	300	20029.97	67
39	169	5006	11	2 ORRVILLE	494	18.32	270	20600.17	78.15
39	169	5006	12	2 ORRVILLE	494	18.32	270	20600.17	78.15
39	169	5006	13	2 ORRVILLE	494	18.32	270	20600.17	78.15
39	169	5008	1	1 TENNACO PACKAGING	160	7.5	410	1298.86	29.4
39	169	5008	2	2 TENNACO PACKAGING	160	7.5	410	1298.86	29.4
39	169	5008	3	3 TENNACO PACKAGING	160	13	410	1539.7	11.6
39	169	5014	1	1 MORTON SALT DIV. OF MORTON	160	7	650	935.18	24.3
39	169	5014	2	2 MORTON SALT DIV. OF MORTON	160	7	650	935.18	24.3
39	173	5015	2	2 BOWLING GREEN STATE UNIVER	250	9.8	300	935.33	12.4
40	19	2534	17	6507 Ultramar Diamon/Ardmore R	150	2	1100	562.69	179.11
40	23	702	1	1 HUGO	500	23.99	300	22600.67	50
40	47	1801	1	9261 Great Lakes Car/Kremlin	150	13.5	1800	6429.81	44.92
40	47	1801	3	9263 Great Lakes Car/Kremlin	150	13.5	1800	6219.4	43.45
40	47	1801	5	9265 Great Lakes Car/Kremlin	125	12	1800	4035.32	35.68
40	49	2782	40	7269 Wynnewood Refin/Wynnewood	140	5	650	1737.11	88.47
40	71	1314	45	5375 Conoco Inc./Ponca City Re	175	4.5	434	917.52	57.69
40	71	1314	46	5376 Conoco Inc./Ponca City Re	175	8.5	500	1403.88	24.74
40	71	1333	14	8911 Continental Car/Ponca Cit	213	7	1800	2210.94	57.45
40	89	2733	1	10766 Weyerhaeuser Co/Valliant	296	14.5	439	87.52	0.53
40	89	2733	2	10767 Weyerhaeuser Co/Valliant	296	14.5	439	87.52	0.53
40	89	2733	11	10776 Weyerhaeuser Co/Valliant	119	2.3	670	97.84	23.55
40	97	710	1	2 GRDA	504	19.99	250	28246.13	90
40	97	710	2	1 GRDA	504	19.99	140	25107.67	80
40	97	1910	19	9562 Lone Star Indus/Pryor Fac	102	7	550	3101.47	80.59
40	101	1643	2	9154 Ft. Howard Corp/Muskogee	260	10	280	3402.35	43.32
40	101	1643	3	9155 Ft. Howard Corp/Muskogee	260	13.8	295	5912.56	39.53
40	101	1643	4	9156 Ft. Howard Corp/Muskogee	260	13.8	295	5912.56	39.53
40	101	2952	4	2 MUSKOGEE	350	23.99	264	20792.62	46
40	101	2952	5	2 MUSKOGEE	350	23.99	264	20792.62	46
40	101	2952	6	3 MUSKOGEE	500	21.5	264	34852.91	96
40	103	6095	1	1 SOONER	500	19.99	264	32012.28	102
40	103	6095	2	1 SOONER	500	19.99	264	32012.28	102
40	131	705	3301	1 NORTHEASTERN	183	9.03	340	2817.86	44
40	131	705	3313	3 NORTHEASTERN	600	26.99	240	22885.3	40
40	131	705	3314	3 NORTHEASTERN	600	26.99	240	22885.3	40

40	131	1166	14	8634 Blue Circle Cem/Tulsa-Rog	43	6.9	500	2667.98	71.35
40	131	1166	15	8635 Blue Circle Cem/Tulsa-Rog	43	6.9	500	2667.98	71.35
40	137	2509	40	4552 Texaco Explorat/Velma Gas	100	2.5	1200	49.09	10
40	143	2458	2	6151 Sinclair Oil Co/902 West	71	7	350	2097.03	54.49
40	143	2458	4	6153 Sinclair Oil Co/902 West	191	5	500	1146.29	58.38
40	143	2458	5	6154 Sinclair Oil Co/902 West	240	1.6	1500	46.14	22.95
40	143	2477	6	6295 Sun Company Inc/Refinery	130	7.4	521	1327.67	30.87
40	143	2477	26	6315 Sun Company Inc/Refinery	125	5.3	480	63.98	2.9
41	11	15	3	1 WEYERHAEUSER COMPANY	45	0.25	410	1.48	30.13
41	49	16 1SG		1 BOARDMAN	656	22	268	32691.49	86
41	49	26	1	0 PACIFIC GAS TRANSMISSION CO	55	7.32	651	2822.55	67.07
41	49	26	2	0 PACIFIC GAS TRANSMISSION CO	55	7.32	651	2822.55	67.07
41	71	6142	8	0 SMURFIT NEWSPRINT CORPORA	102	4.76	380	614.65	34.54
42	3	29	1	1 CHESWICK	750	20.99	260	32873	95
42	3	39	4	1 KOSMOS CEMENT COMPANY	1	1	250	510.51	650
42	3	50	6	33 SHENANGO NEVILLE ISLAND CO	127	10	670	2583.97	32.9
42	3	50	12	4 SHENANGO NEVILLE ISLAND CO	250	10	592	1566.09	19.94
42	5	1	1	1 ARMSTRONG	1008	14.49	325	13686.92	83
42	5	1	2	1 ARMSTRONG	1008	14.49	325	13686.92	83
42	5	12	1	1 KEYSTONE	800	27.17	271	33627.78	58
42	5	12	2	2 KEYSTONE	800	27.17	281	33627.78	58
42	7	5	1	2 BRUCE MANSFIELD	950	19.02	126	21877.75	77
42	7	5	2	2 BRUCE MANSFIELD	950	19.02	126	21877.75	77
42	7	5	3	1 BRUCE MANSFIELD	600	19.02	126	21877.75	77
42	7	32	34	101 ZINC CORP AMER	280	11	300	6547.8	68.9
42	7	32	35	101 ZINC CORP AMER	280	11	300	6547.8	68.9
42	7	42	32	102 AES BEAVER VALLEY PARTNERS	200	7	134	2525.36	65.62
42	7	42	33	103 AES BEAVER VALLEY PARTNERS	200	7	134	2525.36	65.62
42	7	42	34	104 AES BEAVER VALLEY PARTNERS	200	7	134	2525.36	65.62
42	11	39	121	121 ALLENTOWN CEMENT CO INC	80	3	500	338.3	47.86
42	11	39	122	122 ALLENTOWN CEMENT CO INC	80	3	500	338.3	47.86
42	11	45	1	1 TITUS	200	14	291	4618.15	30
42	11	45	2	1 TITUS	200	14	291	4618.15	30
42	11	45	3	1 TITUS	200	14	291	4618.15	30
42	13	4	933	101 WESTVACO CORP	240	11	230	1558.55	16.4
42	13	10	36	109 APPLETON PAPERS INC	170	6	125	1484.12	52.49
42	17	55	230	113 US STEEL CORP	102	12	459	3201.79	28.31

42	19	15	32	102 PENRECO INC	60	4	530	1195.57	95.14
42	19	15	33	103 PENRECO INC	60	4	550	1236.91	98.43
42	19	24	101	101 ARMSTRONG CEMENT & SUPPLY	180	3	435	279.21	39.5
42	19	24	101	101 ARMSTRONG CEMENT & SUPPLY	175	3	436	296.25	41.91
42	19	24	121	101 ARMSTRONG CEMENT & SUPPLY	180	3	435	279.21	39.5
42	19	24	121	101 ARMSTRONG CEMENT & SUPPLY	175	3	436	296.25	41.91
42	19	26	38	105 INDSPEC CHEM CORP	90	4	350	659.61	52.49
42	27	18	105	105 BELLEFONTE LIME CO	90	17	300	1488.99	6.56
42	27	18	106	105 BELLEFONTE LIME CO	90	17	300	1488.99	6.56
42	27	18	107	105 BELLEFONTE LIME CO	90	17	300	1488.99	6.56
42	29	23	1	2 CROMBY	300	14	250	7235.1	47
42	29	23	2	1 CROMBY	300	14	240	11853.26	77
42	33	21	1	1 SHAWVILLE	600	12.51	266	11799.86	96
42	33	21	2	1 SHAWVILLE	600	12.51	266	11799.86	96
42	33	21	3	2 SHAWVILLE	850	19.02	253	14206.33	50
42	33	21	4	2 SHAWVILLE	850	19.02	253	14206.33	50
42	35	8	33	101 INTL PAPER CO	200	10	359	2319.29	29.53
42	35	8	34	102 INTL PAPER CO	200	10	426	2576.9	32.81
42	45	14	1	2 EDDYSTONE	248	18.51	290	14261.97	53
42	45	14	2	1 EDDYSTONE	248	18.51	270	14531.07	54
42	45	14	3	3 EDDYSTONE	248	23.99	500	41133.23	91
42	45	25	101	101 SUN CO INC	250	12	465	9070.43	80.2
42	45	30	101	101 BP OIL INC	160	11	579	5924.38	62.34
42	45	30	103	103 BP OIL INC	280	3	199	324.66	45.93
42	45	49	994	104 CONGOLEUM CORP	70	5.7	500	418.49	16.4
42	47	5	40	116 WILLAMETTE IND	150	9	309	2295.95	36.09
42	47	5	41	117 WILLAMETTE IND	150	9	309	1461.29	22.97
42	49	4	35	101 INTL PAPER CO	250	10	359	2319.29	29.53
42	49	4	36	102 INTL PAPER CO	270	10	359	2319.29	29.53
42	49	4	37	103 INTL PAPER CO	260	10	350	2834.51	36.09
42	49	9	31	101 GE CO	310	18	340	2503.98	9.84
42	49	9	32	101 GE CO	310	18	340	2503.98	9.84
42	49	9	33	101 GE CO	310	18	340	2503.98	9.84
42	49	9	35	101 GE CO	310	18	340	2503.98	9.84
42	49	31	805	102 ERIE COKE CORP	200	6	200	265.78	9.4
42	59	2	101	101 CYPRUS CUMBERLAND RESOUR	150	9	133	3130.61	49.21
42	59	6	1	1 HATFIELD'S FERRY	700	22.51	310	43377.89	109

42	59	6	2	1 HATFIELD'S FERRY	700	22.51	310	43377.89	109
42	59	6	3	1 HATFIELD'S FERRY	700	22.51	310	43377.89	109
42	63	1	1	1 CONEMAUGH	525	27.98	130	43041.2	70
42	63	1	2	1 CONEMAUGH	525	27.98	130	43041.2	70
42	63	2	12	1 SEWARD	600	17.26	350	22695.73	97
42	63	2	14	1 SEWARD	600	17.26	350	22695.73	97
42	63	2	15	1 SEWARD	600	17.26	350	22695.73	97
42	63	3	1	1 HOMER CITY	800	23.99	282	33901.01	75
42	63	3	2	1 HOMER CITY	800	23.99	282	33901.01	75
42	63	3	3	2 HOMER CITY	1216	22.51	274	42581.96	107
42	63	4	101	101 PA ELEC CO	154	9	125	2754.63	43.3
42	63	4	102	102 PA ELEC CO	154	9	125	2754.63	43.3
42	71	54	17	1 HOLTWOOD	494	18.32	270	20600.17	78.15
42	73	25	3	1 NEW CASTLE	750	13.59	302	9573.57	66
42	73	25	4	1 NEW CASTLE	750	13.59	302	9573.57	66
42	73	25	5	1 NEW CASTLE	750	13.59	302	9573.57	66
42	73	26	117	117 ESSROC/BESSEMER	220	11	400	551.19	5.8
42	73	26	119	119 ESSROC/BESSEMER	220	13	450	915.85	6.9
42	79	14	6	1 HUNLOCK PWR STATION	494	18.32	270	20600.17	78.15
42	83	4	37	113 WITCO CORP.	220	8	350	2638.44	52.49
42	93	3	1	1 MONTOUR	600	19.99	300	37661.51	120
42	93	3	2	1 MONTOUR	600	19.99	300	37661.51	120
42	95	10	1	2 MARTINS CREEK	600	22.51	315	19102.19	48
42	95	10	2	2 MARTINS CREEK	600	22.51	315	19102.19	48
42	95	10	3	1 MARTINS CREEK	600	22.51	285	37010.49	93
42	95	10	4	1 MARTINS CREEK	600	22.51	285	37010.49	93
42	95	11	1	2 PORTLAND	400	9.37	265	12274.11	178
42	95	11	2	1 PORTLAND	400	9.37	260	9309.02	135
42	95	12	102	102 KEYSTONE PORTLAND CEMENT	200	12	500	4452.65	39.37
42	95	45	142	130 ESSROC MATERIALS, INC.	230	11	248	5300.01	55.77
42	95	45	143	130 ESSROC MATERIALS, INC.	230	11	248	5300.01	55.77
42	95	48	42	201 BETHLEHEM STRUCTURAL PROC	200	10	350	2061.68	26.25
42	95	48	507	127 BETHLEHEM STRUCTURAL PROC	280	13	550	2176.81	16.4
42	95	49	101	101 LONE STAR INDUSTRIES	230	10	372	2834.51	36.09
42	95	49	102	101 LONE STAR INDUSTRIES	230	10	372	2834.51	36.09
42	95	49	103	102 LONE STAR INDUSTRIES	230	10	365	3607.34	45.93
42	95	49	104	102 LONE STAR INDUSTRIES	230	10	365	3607.34	45.93

42	101	1501	19	19 SUN COMPANY, INC.	150	9.51	325	2578.45	36.3
42	101	1501	50	50 SUN COMPANY, INC.	35	13.16	77	3327.05	24.46
42	101	1501	539	539 SUN COMPANY, INC.	200	8.86	450	2786.74	45.2
42	109	2 1A		2 SUNBURY	300	15.51	297	7368.5	39
42	109	2 1B		2 SUNBURY	300	15.51	297	7368.5	39
42	109	2 2A		2 SUNBURY	300	15.51	297	7368.5	39
42	109	2 2B		2 SUNBURY	300	15.51	297	7368.5	39
42	109	2	3	3 SUNBURY	300	15.51	300	5857.01	31
42	109	2	4	1 SUNBURY	300	15.51	281	7179.56	38
42	123	3	50	114 UNITED REFINING CO.	150	9	700	2087.29	32.81
42	123	3	901	127 UNITED REFINING CO.	150	7	399	2146.29	55.77
42	123	4	1	1 WARREN	494	18.32	270	20600.17	78.15
42	123	4	2	1 WARREN	494	18.32	270	20600.17	78.15
42	123	4	3	1 WARREN	494	18.32	270	20600.17	78.15
42	123	4	4	1 WARREN	494	18.32	270	20600.17	78.15
42	125	14	33	2 MITCHELL	230	19.99	300	18516.91	59
42	125	24	1	1 ELRAMA	272	14.09	280	6860.65	44
42	125	24	2	1 ELRAMA	272	14.09	280	6860.65	44
42	125	24	3	2 ELRAMA	272	14.09	285	8108.05	52
42	125	24	4	3 ELRAMA	292	15.01	285	12917.4	73
42	129	7	31	110 KOPPERS INDUSTRIES	110	50	350	62400.03	31.78
42	129	7	805	106 KOPPERS INDUSTRIES	261	8	600	1311.93	26.1
42	131	9	932	105 THE PROCTOR & GAMBLE PAPEF	250	6	106	1576.86	55.77
42	131	9	934	105 THE PROCTOR & GAMBLE PAPEF	250	6	106	1576.86	55.77
42	133	7	109	209 J. E. BAKER COMPANY	90	7	424	2651.59	68.9
42	133	7	110	109 J. E. BAKER COMPANY	80	8	550	2968.69	59.06
42	133	7	110	109 J. E. BAKER COMPANY	75	8	302	2106.63	41.91
42	133	16	33	110 P. H. GLATFELTER CO.	200	11	320	3741.46	39.37
42	133	16	34	110 P. H. GLATFELTER CO.	200	11	320	3741.46	39.37
42	133	16	35	110 P. H. GLATFELTER CO.	200	11	320	3741.46	39.37
42	133	20	1	1 BRUNNER ISLAND	450	19.51	299	49028.58	164
42	133	20	2	1 BRUNNER ISLAND	450	19.51	299	49028.58	164
42	133	20	3	2 BRUNNER ISLAND	600	20.03	319	47265.48	150
42	133	60	134	134 LEHIGH PORTLAND CEMENT CO.	100	9	390	2087.29	32.81
45	3	11 URQ1		1 URQUHART	200	14	262	3848.46	25
45	3	11 URQ2		1 URQUHART	200	14	262	3848.46	25
45	3	11 URQ3		2 URQUHART	200	15.47	257	5262.95	28

45	7	4	1	2 W S LEE	213	7.98	291	2750.8	55
45	7	4	2	2 W S LEE	213	7.98	291	2750.8	55
45	7	4	3	1 W S LEE	213	7.98	282	4151.21	83
45	15	3	3	2 JEFFERIES	300	13.01	300	8109.15	61
45	15	3	4	2 JEFFERIES	300	13.01	300	8109.15	61
45	15	6 WIL1		1 WILLIAMS	400	27.98	314	35662.71	58
45	15	11	2	0 DUPONT,EI:COOPER RVR	165	7.08	387	1385.01	35.18
45	15	15	2	2 ALUMAX OF S CAROLINA	225	10.5	190	5195.42	60
45	15	15	3	3 ALUMAX OF S CAROLINA	225	10.5	190	5195.42	60
45	15	15	4	4 ALUMAX OF S CAROLINA	225	10.5	190	5195.42	60
45	15	15	5	5 ALUMAX OF S CAROLINA	225	10.5	190	5195.42	60
45	15	30	1	2 CROSS	600	22	150	35352.42	93
45	15	30	2	1 CROSS	600	22	140	26609.35	70
45	19	8	1	1 WESTVACO-KRAFT DIV	257	10	318	5623.46	71.6
45	19	8	2	2 WESTVACO-KRAFT DIV	411	11.4	354	7206.18	70.6
45	19	8	3	3 WESTVACO-KRAFT DIV	96	6.5	390	2362.64	71.2
45	19	8	4	4 WESTVACO-KRAFT DIV	96	7.4	374	2675.13	62.2
45	19	8	7	7 WESTVACO-KRAFT DIV	160	7.9	369	3847.82	78.5
45	29	2 CAN1		1 CANADYS STEAM	200	16	255	6434	32
45	29	2 CAN2		1 CANADYS STEAM	200	16	255	6434	32
45	29	2 CAN3		2 CANADYS STEAM	200	16	258	9852.06	49
45	31	2	1	1 H B ROBINSON	250	15.01	230	8847.53	50
45	35	2	1	1 GIANT CEMENT CO	163	10	280	4633.86	59
45	35	2	2	1 GIANT CEMENT CO	163	10	280	4633.86	59
45	35	2	3	2 GIANT CEMENT CO	175	10	260	4633.86	59
45	35	2	4	2 GIANT CEMENT CO	175	10	260	4633.86	59
45	35	4	1	1 BLUE CIRCLE CEMENT	90	10	220	5497.8	70
45	35	25	16	0 SHOWA DENKO CARBON	57	8.24	258	1652.6	30.99
45	41	3	10	0 STONE CONT:FLORENCE	102	4.76	380	614.65	34.54
45	43	2	1	101 INT PAPER:GEORGETWN	235	8	340	3015.94	60
45	43	2	1	102 INT PAPER:GEORGETWN	235	8	340	3015.94	60
45	43	2	3	3 INT PAPER:GEORGETWN	281	17	383	10009.84	44.1
45	43	2	4	3 INT PAPER:GEORGETWN	281	17	383	10009.84	44.1
45	43	5	1	4 WINYAH	400	17.98	277	15234.27	60
45	43	5	2	3 WINYAH	400	16	180	12063.74	60
45	43	5	3	1 WINYAH	400	16	160	15079.68	75
45	43	5	4	2 WINYAH	400	16	160	15280.74	76

45	51	3	1	1 DOLPHUS M GRAINGER	300	10.03	300	4661.7	59
45	51	3	2	1 DOLPHUS M GRAINGER	300	10.03	300	4661.7	59
45	55	3	12	0 DUPONT,EI:MAY PLANT	165	7.08	387	1385.01	35.18
45	55	3	13	0 DUPONT,EI:MAY PLANT	165	7.08	387	1385.01	35.18
45	55	3	14	0 DUPONT,EI:MAY PLANT	165	7.08	387	1385.01	35.18
45	55	3	15	0 DUPONT,EI:MAY PLANT	165	7.08	387	1385.01	35.18
45	63	3 MCM1		1 MCMEEKIN	410	12.96	255	8574.61	65
45	63	3 MCM2		1 MCMEEKIN	410	12.96	255	8574.61	65
45	63	8 NO3		0 CAROLINA EASTMAN CO	68	4.27	396	390.51	27.27
45	63	8 NO4		0 CAROLINA EASTMAN CO	68	4.27	396	390.51	27.27
45	63	8 NO5		0 CAROLINA EASTMAN CO	95	5.18	413	634.96	30.13
45	75	5	1	1 HOLNAM:HOLLY HILL	140	8	307	2855.09	56.8
45	75	5	2	2 HOLNAM:HOLLY HILL	160	12.25	354	5869.38	49.8
45	75	7210 COP1		1 COPE	525	22.99	151	19095.31	46
45	79	13 WAT1		1 WATEREE	300	19.02	250	17615.85	62
45	79	13 WAT2		1 WATEREE	300	19.02	250	17615.85	62
45	79	46	1	1 UNION CAMP:EASTOVER	283	42.2	371	66576.77	47.6
45	79	46	2	1 UNION CAMP:EASTOVER	283	42.2	371	66576.77	47.6
45	91	5	1	1 BOWATER INC PAPER/PULP	195	7	450	3155.74	82
45	91	5	4	4 BOWATER INC PAPER/PULP	175	10	385	2748.9	35
45	91	5	5	5 BOWATER INC PAPER/PULP	175	10	470	3927	50
45	91	10	1	0 CELANESE ACETATE:ROCKHILL	165	7.08	387	1385.01	35.18
45	91	10	2	0 CELANESE ACETATE:ROCKHILL	165	7.08	387	1385.01	35.18
45	91	10	3	0 CELANESE ACETATE:ROCKHILL	165	7.08	387	1385.01	35.18
45	91	10	4	0 CELANESE ACETATE:ROCKHILL	165	7.08	387	1385.01	35.18
45	91	10	5	0 CELANESE ACETATE:ROCKHILL	165	7.08	387	1385.01	35.18
45	91	10	6	0 CELANESE ACETATE:ROCKHILL	165	7.08	387	1385.01	35.18
46	51	1001	1	1 BIG STONE	498	24.17	288	34411.65	75
46	103	1	1	2 BEN FRENCH	511	18.99	288	22856.74	80.7
46	103	11	12	9 SOUTH DAKOTA CEMENT	91	8.83	264	1995.09	32.58
47	1	9	1	1 BULL RUN	800	28.01	244	44365.93	72
47	1	1020	31	31 US DOE Y-12 PLANT	190	12.5	315	4317.25	35.18
47	1	1020	32	32 US DOE Y-12 PLANT	190	12.5	315	4317.25	35.18
47	1	1020	33	33 US DOE Y-12 PLANT	190	15	310	6216.83	35.18
47	1	1020	34	34 US DOE Y-12 PLANT	190	15	310	6216.83	35.18
47	9	8	81	81 ALUMINUM COMPANY OF AMERIC	41	2	241	150.33	47.85
47	9	8	85	85 ALUMINUM COMPANY OF AMERIC	74	4	208	601.3	47.85

47	19	2	9	10027 NORTH AMERICAN RAYON	165	7.08	387	1385.01	35.18
47	19	2	10	10026 NORTH AMERICAN RAYON	95	5.18	413	634.96	30.13
47	47	54	1	1 ROSS METALS INC	100	3.5	200	383.69	39.88
47	63	22	2	2 BASF FIBERS HWY 160 LOWLAND	250	13	373	4669.53	35.18
47	63	22	3	3 BASF FIBERS HWY 160 LOWLAND	250	13	373	4669.53	35.18
47	63	22	4	4 BASF FIBERS HWY 160 LOWLAND	250	13	373	4669.53	35.18
47	63	22	5	5 BASF FIBERS HWY 160 LOWLAND	250	13	373	4669.53	35.18
47	63	22	6	6 BASF FIBERS HWY 160 LOWLAND	250	13	373	4669.53	35.18
47	63	22	8	8 BASF FIBERS HWY 160 LOWLAND	250	12	364	3978.77	35.18
47	63	22	9	9 BASF FIBERS HWY 160 LOWLAND	250	12	364	3978.77	35.18
47	65	460	42	10972 CENTRAL SOYA	95	5.18	413	634.96	30.13
47	65	700	3	3 CHATTANOOGA PAPERBOARD	55	4.5	375	433.71	27.27
47	65	2730	3	3 E I DUPONT	100	6	375	994.69	35.18
47	65	4160	5	5 USA VOLUNTEER ARMY	100	4.5	60	252.08	15.85
47	71	2	18	18 PACKAGING CORPORATION OF A	250	12.8	325	5310.62	41.27
47	73	7	1	2 JOHN SEVIER	350	23.51	293	21271.21	49
47	73	7	2	2 JOHN SEVIER	350	23.51	293	21271.21	49
47	73	7	3	2 JOHN SEVIER	350	23.51	293	21271.21	49
47	73	7	4	2 JOHN SEVIER	350	23.51	293	21271.21	49
47	73	28	1	1 HOLSTON ARMY AMM PLT	115	7	443	1353.89	35.18
47	85	7	1	1 E. I. DU PONT DE NEMOURS AND	270	8	300	2834.98	56.4
47	85	7	2	2 E. I. DU PONT DE NEMOURS AND	270	8	300	2834.98	56.4
47	85	7	3	3 E. I. DU PONT DE NEMOURS AND	270	8	300	2663.07	52.98
47	85	7	4	4 E. I. DU PONT DE NEMOURS AND	270	8	300	2663.07	52.98
47	85	11	11	2 TVA JOHNSONVILLE STEAM PLAN	32	15	952	2203.64	12.47
47	85	11	1	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	10	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	2	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	3	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	4	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	5	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	6	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	7	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	8	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	85	11	9	1 JOHNSONVILLE	600	32.51	294	95460.27	115
47	105	3	1	1 VISKASE CORPORATION	70	3	500	248.67	35.18
47	105	81	34	34 A. E. STALEY MANUFACTURING C	250	12	370	3978.77	35.18

47	105	81	35	35 A. E. STALEY MANUFACTURING C	250	12	370	3978.77	35.18
47	107	12	6	6 BOWATERS PAPER CO	275	4	300	635.73	50.59
47	107	12	10	11936 BOWATERS PAPER CO	165	7.08	387	1385.01	35.18
47	107	12	11	11936 BOWATERS PAPER CO	165	7.08	387	1385.01	35.18
47	107	12	12	11936 BOWATERS PAPER CO	165	7.08	387	1385.01	35.18
47	119	9	3	3 RHONE-POULENC BASIC CHEMIC	110	44.98	154	16843.63	10.6
47	119	13	2	2 OCCIDENTAL CHEMICAL CORP.	50	2	220	72.48	23.07
47	125	92	3	2 SAVAGE ZINC, INC.	200	6	170	1415.13	50.05
47	125	92	6	5 SAVAGE ZINC, INC.	82	1.7	90	101.78	44.84
47	131	12	4	4 GOODYEAR TIRE & RUBB	60	5	450	591.6	30.13
47	139	4	17	12405 B I T MANUFACTURING INC	140	4.9	145	943.82	50.05
47	145	13	1	2 KINGSTON	1000	26	305	49376.53	93
47	145	13	2	2 KINGSTON	1000	26	305	49376.53	93
47	145	13	3	2 KINGSTON	1000	26	305	49376.53	93
47	145	13	4	2 KINGSTON	1000	26	305	49376.53	93
47	145	13	5	2 KINGSTON	1000	26	305	49376.53	93
47	145	13	6	1 KINGSTON	1000	26	294	49376.53	93
47	145	13	7	1 KINGSTON	1000	26	294	49376.53	93
47	145	13	8	1 KINGSTON	1000	26	294	49376.53	93
47	145	13	9	1 KINGSTON	1000	26	294	49376.53	93
47	157	528	1	1 ALLEN	400	12.77	289	15753.53	123
47	157	528	2	1 ALLEN	400	12.77	289	15753.53	123
47	157	528	3	1 ALLEN	400	12.77	289	15753.53	123
47	161	11	1	1 CUMBERLAND	1000	31	273	80005.56	106
47	161	11	2	1 CUMBERLAND	1000	31	273	80005.56	106
47	163	3	5	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	6	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	8	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	13	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	14	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	15	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	16	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	17	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	18	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	3	19	3 EASTMAN, TENN. CO	165	7.08	387	1385.01	35.18
47	163	18	1	1 HOLSTON ARMY AMM PLT	115	7	445	1353.89	35.18
47	163	18	4	13156 HOLSTON ARMY AMM PLT	165	7.08	387	1385.01	35.18

47	163	18	5	13156 HOLSTON ARMY AMM PLT	165	7.08	387	1385.01	35.18
47	163	18	6	13156 HOLSTON ARMY AMM PLT	165	7.08	387	1385.01	35.18
47	163	22	8	13191 MEAD CORP	165	7.08	387	1385.01	35.18
47	163	22	9	13191 MEAD CORP	165	7.08	387	1385.01	35.18
47	163	55	1	1 HOLSTON VALLEY HOSP	125	5.5	550	604.89	25.46
47	165	25	1	1 GALLATIN	501	25	272	27489	56
47	165	25	2	1 GALLATIN	501	25	272	27489	56
47	165	25	3	2 GALLATIN	502	25	252	30434.25	62
47	165	25	4	2 GALLATIN	502	25	252	30434.25	62
47	173	23	9	9 TENN LUTTRELL COMPANY	40	2.7	140	316.8	55.33
47	173	28	1	1 TENN LUTTRELL CO	84	7.8	595	1883.16	39.41
47	187	2	6	6 GENERAL SMELTING & REFINING	100	2.5	200	195.76	39.88
48	3	10	5	5 G.P.M. GAS SERVICES COMPANY	215	3.17	1000	520.9	66
48	13	2	1	1 DYNEGY MIDSTREAM SERVICES,	192	1.4	145	29.19	18.96
48	13	6	15	3 ENRON OIL & GAS COMPANY	235	22.3	1000	3300.33	8.45
48	13	7 SM-1		1 SAN MIGUEL	450	25	175	32888.63	67
48	25	10	24	23 PARKER & PARSLEY DEVELOPM	150	3.83	1300	115.21	10
48	29	1	5	9 CAPITOL CEMENT DIV CAPITOL A	150	6.5	365	3241.99	97.7
48	29	63	1	1 J T DEELY	700	26	270	22830.01	43
48	29	63	2	1 J T DEELY	700	26	270	22830.01	43
48	29	7097 BLR1		1 J K SPRUCE	525	25.61	165	26786.34	52
48	39	10	203	237 PHILLIPS 66 COMPANY	224	9	420	5725.57	90
48	39	10	240	256 PHILLIPS 66 COMPANY	201	6	550	2861.37	101.2
48	39	32	16	5 GULF CHEMICAL & METALLURGIC	140	3.5	480	601.32	62.5
48	39	32	16	18 GULF CHEMICAL & METALLURGIC	140	3.5	480	601.32	62.5
48	55	2	2	2 J. L. DAVIS	150	1.5	1055	120.17	68
48	57	14	3	3 SEADRIFT COKE, L.P.	180	8.9	293	1262.89	20.3
48	67	2	1	1 SULPHUR RIVER GATHERING LP	225	5	1109	345.58	17.6
48	103	4	27	27 DYNEGY MIDSTREAM SERVICES,	195	4	1100	516.48	41.1
48	103	4	30	30 DYNEGY MIDSTREAM SERVICES,	50	50	1200	7539.84	3.84
48	103	4	39	27 DYNEGY MIDSTREAM SERVICES,	195	4	1100	516.48	41.1
48	103	9	21	21 AMERICAN GATHERING, L.P.	113	9.52	1832	49.11	0.69
48	105	19	1	1 TODD RANCH PARTNERS, L.P.	75	22.78	1600	448.32	1.1
48	135	1	5	5 AMOCO EXPLORATION & PRODU	150	2.16	1400	49.1	13.4
48	135	8	39	39 EQUILON ENTERPRISES LLC.	120	8	700	2714.34	54
48	139	2	2	9 NORTH TEXAS CEMENT COMPAN	150	9.25	310	2688.03	40
48	139	2	9	7 NORTH TEXAS CEMENT COMPAN	150	10.5	310	2684.3	31

48	139	2	10	8 NORTH TEXAS CEMENT COMPAN	150	9.25	310	2688.03	40
48	139	9	71	11 TXI. OPERATIONS LIMITED PARTI	200	8	365	2603.76	51.8
48	139	9	72	12 TXI. OPERATIONS LIMITED PARTI	200	8	365	2603.76	51.8
48	139	9	73	13 TXI. OPERATIONS LIMITED PARTI	200	8	365	2603.76	51.8
48	139	9	74	14 TXI. OPERATIONS LIMITED PARTI	200	9	383	2379.29	37.4
48	139	22	7	7 HOLNAM TEXAS, LIMITED PARTN	200	10	200	4995.14	63.6
48	141	1	57	5 ASARCO, INCORPORATED	828	24	154	11083.56	24.5
48	141	1	57	58 ASARCO, INCORPORATED	300	10	153	1916.38	24.4
48	149	5	1	2 SAM SEYMOUR	600	28.01	302	58538.38	95
48	149	5	2	2 SAM SEYMOUR	600	28.01	302	58538.38	95
48	149	5	3	1 SAM SEYMOUR	533	25.76	190	45863.3	88
48	157	5 WAP5		6 W A PARISH	600	23.99	267	37969.13	84
48	157	5 WAP6		6 W A PARISH	600	23.99	267	37969.13	84
48	157	5 WAP7		5 W A PARISH	500	22	279	33831.89	89
48	157	5 WAP8		4 W A PARISH	500	22	130	33831.89	89
48	161	2	1	1 BIG BROWN	400	21.5	335	44292.24	122
48	161	2	2	1 BIG BROWN	400	21.5	335	44292.24	122
48	161	14	7	7 KOCH MIDSTREAM SERVIES CO.	199	3	500	491.27	69.5
48	165	2	13	14 DYNEGY MIDSTREAM SERVICES,	122	50	1000	530.15	0.27
48	167	1	272	245 AMOCO OIL COMPANY	129	6	650	1696.46	60
48	167	1	274	230 AMOCO OIL COMPANY	200	12	400	8595.42	76
48	167	5	68	80 MARATHON ASHLAND PETROLE	205	5	495	2081.31	106
48	167	7	77	53 VALERO REFINING COMPANY - TI	140	5.42	600	692.17	30
48	167	7	102	91 VALERO REFINING COMPANY - TI	200	22.44	1800	23.73	0.06
48	175	2	1	1 COLETO CREEK	409	19.99	278	36719.97	117
48	179	2	90	90 HOECHST CELANESE CHEM. GRC	300	8.5	225	5600.75	98.7
48	179	2	91	91 HOECHST CELANESE CHEM. GRC	300	8.5	225	4539.61	80
48	183	2	22	22 DYNEGY MIDSTREAM SERVICES,	150	1	800	33.69	42.9
48	185	2	1	1 GIBBONS CREEK	465	19.99	200	26990.75	86
48	195	6	56	51 G.P.M. GAS CORPORATION	60	2.16	1800	3.33	0.91
48	201	3	2	2 HOECHST CELANESE CHEMICAL	100	10	514	4327.55	55.1
48	201	3	3	156 HOECHST CELANESE CHEMICAL	85	10	514	4327.55	55.1
48	201	6	94	101 CROWN CENTRAL PETROLEUM C	140	10	550	2089.16	26.6
48	201	18	72	228 CHEVRON CHEMICAL COMPANY	350	1.04	1400	552.17	650
48	201	21	19	45 ENGINEERED CARBONS INCORP	85	50	1832	706.86	0.36
48	201	34	115	109 ROHM & HAAS TEXAS INCORPOR	150	9	150	3117.25	49
48	201	37	8	17 RHODIA, INC.	415	2.5	140	849.21	173

48	201	37	11	23 RHODIA, INC.	316	6	150	1456.13	51.5
48	201	39	208	208 SHELL OIL COMPANY	150	11	424	3.8	0.04
48	201	39	455	297 SHELL OIL COMPANY	66	6.89	1200	172.25	4.62
48	201	40	116	116 LYONDELL-CITGO REFINING LP	300	7	700	858.21	22.3
48	201	65	171	151 VALERO REFINING COMPANY - TI	200	5	1000	883.58	45
48	201	65	222	146 VALERO REFINING COMPANY - TI	225	10	650	4555.32	58
48	201	124	21	33 ELF ATOCHEM NORTH AMERICA,	150	3.94	1200	291.39	23.9
48	201	124	71	79 ELF ATOCHEM NORTH AMERICA,	150	50	1800	1492.26	0.76
48	201	405	1	1 A.E.S. DEEPWATER, INC.	475	14.7	175	9198.67	54.2
48	203	22	1	1 PIRKEY	525	25	149	41724.38	85
48	223	2	31	18 VALENCE OPERATING COMPANY	197	6	1100	11.31	0.4
48	227	1	267	19 FINA OIL AND CHEMICAL COMPAI	152	6.5	300	1237.73	37.3
48	227	1	281	13 FINA OIL AND CHEMICAL COMPAI	175	3	1200	308.19	43.6
48	227	2	1	14 SID RICHARDSON CARBON COMP	166	12	900	11875.25	105
48	227	2	3	14 SID RICHARDSON CARBON COMP	166	12	900	11875.25	105
48	227	2	4	4 SID RICHARDSON CARBON COMP	198	4.3	550	1336.03	92
48	233	1	12	8 ENGINEERED CARBONS, INC	98	10	421	4508.2	57.4
48	233	2	3	3 SID RICHARDSON CARBON AND C	160	10	825	7484.86	95.3
48	233	2	4	3 SID RICHARDSON CARBON AND C	160	10	825	7484.86	95.3
48	233	4	168	164 PHILLIPS 66 COMPANY	200	1	1000	19.64	25
48	233	6	28	1 G.P.M. GAS CORPORATION	220	1.72	1000	81.32	35
48	233	15	249	249 PHILLIPS 66 COMPANY	176	8	560	2065.92	41.1
48	233	15	256	259 PHILLIPS 66 COMPANY	176	9	520	2061.2	32.4
48	245	4	133	487 CLARK REFINING & MARKETING,	160	8.8	500	6264.6	103
48	245	4	242	272 CLARK REFINING & MARKETING,	300	23.03	1800	49.99	0.12
48	245	10	2	2 OLIN CHEMICALS & CHLOR ALKA	175	4	120	854.52	68
48	245	18	321	324 MOBIL OIL CORPORATION	175	9	569	7379.62	116
48	245	20	215	178 MOTIVA ENTERPRISES LLC	170	10	600	9896.04	126
48	245	23	4	4 GREAT LAKES CARBON CORPOR	150	6.8	361	2400.55	66.1
48	245	23	5	1 GREAT LAKES CARBON CORPOR	150	6.8	372	2669.29	73.5
48	279	6194	171B	1 TOLK STATION	400	22.51	270	41786.04	105
48	279	6194	172B	1 TOLK STATION	400	22.51	270	41786.04	105
48	289	2	1	6 OXY. U.S.A., INC.	175	50	1800	687.23	0.35
48	293	10 LIM1		1 LIMESTONE	563	27.01	160	51568.27	90
48	293	10 LIM2		1 LIMESTONE	563	27.01	160	51568.27	90
48	311	1	29	1 WILLIAMS FIELD SERVICES COM	165	5.25	950	268.43	12.4
48	329	3	21	1 G.P.M. GAS SERVICES COMPANY	170	50	1300	58.91	0.03

48	331	1	10	10 ALUMINUM COMPANY OF AMERIC	265	17	288	45396.12	200
48	331	1	11	10 ALUMINUM COMPANY OF AMERIC	265	17	288	45396.12	200
48	331	1	12	11 ALUMINUM COMPANY OF AMERIC	530	17	285	45396.12	200
48	331	5	4	1 SANDOW	400	21.5	180	35579.01	98
48	341	3	11	31 CONTINENTAL CARBON CO., INC.	150	50	1600	5654.88	2.88
48	341	3	16	30 CONTINENTAL CARBON CO., INC.	150	50	1600	12664.58	6.45
48	341	14	12	12 G.P.M. GAS SERVICES COMPANY	160	0.67	1800	3.34	9.46
48	341	31	97	99 DIAMOND SHAMROCK REFIN. & M	100	3	142	122.29	17.3
48	341	31	118	122 DIAMOND SHAMROCK REFIN. & M	114	5.5	600	3817.97	160.7
48	349	11	15	21 TEXAS INDUSTRIES, INC.	115	5	153	1309.65	66.7
48	355	3	166	171 CITGO REFINING & CHEMICALS C	165	5.5	550	4038.92	170
48	355	18	55	60 COASTAL REFINING AND MARKET	185	10	600	1987.06	25.3
48	355	18	280	117 COASTAL REFINING AND MARKET	255	4	1500	414.69	33
48	355	18	389	348 COASTAL REFINING AND MARKET	255	50	1200	5360.36	2.73
48	355	18	412	235 COASTAL REFINING AND MARKET	222	9.55	1832	14.33	0.2
48	361	8	16	11 ENGINEERED CARBONS, INC.	145	6	500	1755.84	62.1
48	361	8	17	11 ENGINEERED CARBONS, INC.	145	6	500	1755.84	62.1
48	371	14	4	1 DUKE ENERGY FIELD SERVICES,	150	0.25	1832	1.45	29.49
48	371	15	1	1 DUKE ENERGY FIELD SERVICES,	150	40.19	1832	15007.61	11.83
48	375	22 061B		1 HARRINGTON STATION	250	18.95	326	24819.44	88
48	375	22 062B		3 HARRINGTON STATION	300	19.02	313	27560.28	97
48	375	22 063B		2 HARRINGTON STATION	300	19.02	300	27560.28	97
48	383	3	7	7 J.L. DAVIS GAS PROCESSING, INC	60	50	1800	863.94	0.44
48	389	1	6	1 EL PASO FIELD SERVICES COMP	188	0.42	750	15.01	108.32
48	389	2	4	4 EL PASO NATURAL GAS COMPAN	199	6	850	876.51	31
48	395	7030 U1		1 TNP ONE	340	12.51	320	9833.21	80
48	395	7030 U2		1 TNP ONE	340	12.51	320	9833.21	80
48	401	11	1	1 MARTIN LAKE	452	22.99	250	49813.85	120
48	401	11	2	1 MARTIN LAKE	452	22.99	250	49813.85	120
48	401	11	3	1 MARTIN LAKE	452	22.99	250	49813.85	120
48	423	1	64	64 LA GLORIA OIL AND GAS COMPAN	140	10	525	1225.22	15.6
48	449	3	1	1 MONTICELLO	400	21.5	335	44292.24	122
48	449	3	2	1 MONTICELLO	400	21.5	335	44292.24	122
48	449	3	3	2 MONTICELLO	460	26.49	250	54010.83	98
48	449	5	1	1 WELSH	300	16.81	264	28629.65	129
48	449	5	2	1 WELSH	300	16.81	264	28629.65	129
48	449	5	3	1 WELSH	300	16.81	264	28629.65	129

48	467	1	22	22 DYNEGY MIDSTREAM SERVICES,	275	9	1000	318.09	5
48	475	7	39	20 WESTERN GAS RESOURCES, INC	150	2	1070	175.93	56
48	475	14	19	18 DYNEGY MIDSTREAM SERVICES,	200	0.56	1832	3	12.19
48	487	10	1	1 OKLAUNION	452	22.99	161	39435.96	95
49	7	2	1	2 CARBON	200	10.03	325	7585.15	96
49	7	2	2	1 CARBON	172	12.51	325	9464.47	77
49	7	30	2	0 SUNNYSIDE COGENERATION ASS	74	3.96	395	367.03	29.8
49	15	1	1	1 HUNTINGTON	600	23.99	138	24860.74	55
49	15	1	2	2 HUNTINGTON	600	23.99	262	28928.86	64
49	15	6165	1	2 HUNTER (EMERY)	600	23.99	138	29380.88	65
49	15	6165	2	2 HUNTER (EMERY)	600	23.99	138	29380.88	65
49	15	6165	3	1 HUNTER (EMERY)	600	23.99	119	29832.89	66
49	23	15	10	0 ASHGROVE CEMENT	86	3.99	167	598.42	47.86
49	27	6481 1SGA		1 INTERMOUNTAIN	714	28.01	135	52992.64	86
49	27	6481 2SGA		1 INTERMOUNTAIN	714	28.01	135	52992.64	86
49	35	30	22	0 KENNECOTT MAIN STACK, SMEL	33	2.27	111	67.34	16.64
49	35	30	42	0 KENNECOTT MAIN STACK, SMEL	261	9.25	184	1850.04	27.53
49	35	346	14	0 KENNECOTT - UTAH POWER PLA	165	7.08	387	1385.01	35.18
49	35	346	16	0 KENNECOTT - UTAH POWER PLA	165	7.08	387	1385.01	35.18
49	37	32	16	0 UNOCAL PIPELINE CO.	189	3.67	872	618.42	58.46
49	47	7790 1-1		1 BONANZA	600	26	120	26546.52	50
49	49	27	25	0 GENEVA STEEL	155	6.43	640	1677.19	51.65
51	5	3	1	1 WESTVACO CORPORATION BLEA	217	17	300	15548.17	68.5
51	5	3	2	2 WESTVACO CORPORATION BLEA	217	17	300	15548.17	68.5
51	5	3	3	3 WESTVACO CORPORATION BLEA	217	17	300	15548.17	68.5
51	5	3	4	4 WESTVACO CORPORATION BLEA	217	17	300	15548.17	68.5
51	5	3	8	8 WESTVACO CORPORATION BLEA	257	10.8	310	3994.15	43.6
51	9	22	1	1 VA FIBRE CORPORATION	100	9	400	2468.36	38.8
51	9	22	2	1 VA FIBRE CORPORATION	100	9	400	2468.36	38.8
51	9	22	20	4 VA FIBRE CORPORATION	100	7.5	357	1007.28	22.8
51	15	9	1	1 DUPONT, EI DENEMOURS & CO	250	11	325	2442.36	25.7
51	15	9	2	1 DUPONT, EI DENEMOURS & CO	250	11	325	2442.36	25.7
51	15	9	3	1 DUPONT, EI DENEMOURS & CO	250	11	325	2442.36	25.7
51	19	3	2	1 GEORGIA-PACIFIC CORP	90	6.8	425	998.71	27.5
51	23	3	20	2 ROANOKE CEMENT COMPANY	70	6	440	1065.94	37.7
51	23	3	52	52 ROANOKE CEMENT COMPANY	350	10	240	6754.44	86
51	27	4	22	1 JEWELL COKE COMPANY L P	60	7.6	1700	1206.7	26.6

51	27	4	24	3 JEWELL COKE COMPANY L P	70	8.3	1700	1352.66	25
51	27	81	20	1 CONSOLIDATION COAL CO	185	8	120	2166.45	43.1
51	41	2	3	1 CHESTERFIELD	200	13.01	288	6115.1	46
51	41	2	4	2 CHESTERFIELD	200	13.01	324	9704.39	73
51	41	2	5	3 CHESTERFIELD	200	17	265	16115.62	71
51	41	2	6	4 CHESTERFIELD	419	19.99	264	31384.59	100
51	41	78	2	2 E I DU PONT DE NEMOURS & CO	200	3	180	414.93	58.7
51	41	81	2	2 PHILIP MORRIS USA-PARK 500	185	5.5	300	1347.1	56.7
51	41	81	3	3 PHILIP MORRIS USA-PARK 500	250	4.8	375	1145.45	63.3
51	65	1	3	1 BREMO BLUFF	200	11.99	314	4629.28	41
51	65	1	4	2 BREMO BLUFF	200	15.01	264	7962.78	45
51	71	2	51	1 GLEN LYN	225	17	304	9760.17	43
51	71	2	52	1 GLEN LYN	225	17	304	9760.17	43
51	71	2	6	2 GLEN LYN	435	11.51	238	13734.58	132
51	71	4	2	1 HOECHST CELANESE CORP	160	11.5	414	4227.47	40.7
51	71	4	3	1 HOECHST CELANESE CORP	160	11.5	414	4227.47	40.7
51	71	4	5	2 HOECHST CELANESE CORP	160	11.5	414	4227.47	40.7
51	71	4	6	2 HOECHST CELANESE CORP	160	11.5	414	4227.47	40.7
51	71	4	7	3 HOECHST CELANESE CORP	150	6.6	340	1994.56	58.3
51	83	7213	1	1 CLOVER	444	22.26	290	23350.3	60
51	83	7213	2	1 CLOVER	444	22.26	290	23350.3	60
51	85	42	1	1 BEAR ISLAND PAPER CO LP	120	4.5	350	1240.54	78
51	89	6	1	1 DUPONT, E I DE NEMOURS & CO	153	6.5	300	1095.04	33
51	89	6	4	4 DUPONT, E I DE NEMOURS & CO	153	6.5	300	1095.04	33
51	89	6	5	5 DUPONT, E I DE NEMOURS & CO	153	6.5	385	1194.59	36
51	93	6	3	1 UNION CAMP CORP-FINE PAPER	240	12.8	340	4478.06	34.8
51	93	6	4	21 UNION CAMP CORP-FINE PAPER	248	14	379	10498.6	68.2
51	93	6	5	1 UNION CAMP CORP-FINE PAPER	240	12.8	340	4478.06	34.8
51	93	6	6	2 UNION CAMP CORP-FINE PAPER	244	11	300	4447.56	46.8
51	93	6	7	3 UNION CAMP CORP-FINE PAPER	193	11.5	305	3676.97	35.4
51	93	6	8	4 UNION CAMP CORP-FINE PAPER	302	16.6	396	7488.3	34.6
51	93	6	16	11 UNION CAMP CORP-FINE PAPER	248	14	450	1462.41	9.5
51	93	6	17	12 UNION CAMP CORP-FINE PAPER	240	12.8	340	1376.88	10.7
51	101	1	1	1 ST LAURENT PAPER PRODUCTS	122	8	320	1829.67	36.4
51	101	1	3	3 ST LAURENT PAPER PRODUCTS	181	9.5	410	3997.76	56.4
51	101	1	6	6 ST LAURENT PAPER PRODUCTS	250	7	350	1924.23	50
51	101	1	11	11 ST LAURENT PAPER PRODUCTS	287	9	325	2551.06	40.1

51	121	2	2	1 VPI & STATE UNIVERSITY	178	10	346	714.71	9.1
51	143	2	3	3 DAN RIVER INC (SCHOOLFIELD D	250	12	375	1798.25	15.9
51	153	2	3	2 POSSUM POINT	177	13.01	262	5583.35	42
51	153	2	4	1 POSSUM POINT	175	14	258	10775.69	70
51	167	3	1	2 CLINCH RIVER	450	15.59	250	20997.9	110
51	167	3	2	2 CLINCH RIVER	450	15.59	250	20997.9	110
51	167	3	3	1 CLINCH RIVER	450	12.51	250	10570.71	86
51	167	6	21	3 CLINCHFIELD COAL CO #3	124	7.2	119	1710.04	42
51	173	11	3	3 GENERAL SHALE PRODUCTS CO	30	2.5	145	139.9	28.5
51	173	11	5	5 GENERAL SHALE PRODUCTS CO	26	3.7	285	526.85	49
51	199	1	1	1 YORKTOWN	325	17	278	16796.56	74
51	199	1	2	1 YORKTOWN	325	17	278	16796.56	74
51	199	1	3	2 YORKTOWN	489	22.51	285	36612.53	92
51	199	4	6	4 AMOCO PETROLEUM PRODUCTS	175	6	710	2024.45	71.6
51	199	4	7	5 AMOCO PETROLEUM PRODUCTS	101	4.5	1050	262.42	16.5
51	199	4	26	0 AMOCO PETROLEUM PRODUCTS	142	14.49	1168	3784.52	22.95
51	199	4	26	27 AMOCO PETROLEUM PRODUCTS	204	1.8	1050	21.63	8.5
51	510	3	1	3 POTOMAC RIVER	165	7.98	330	5201.52	104
51	510	3	2	3 POTOMAC RIVER	165	7.98	330	5201.52	104
51	510	3	3	2 POTOMAC RIVER	165	7.98	252	8152.38	163
51	510	3	4	2 POTOMAC RIVER	165	7.98	252	8152.38	163
51	510	3	5	1 POTOMAC RIVER	165	7.98	252	8152.38	163
51	550	26	1	1 CHESAPEAKE	175	13.01	303	7577.4	57
51	550	26	2	1 CHESAPEAKE	175	13.01	303	7577.4	57
51	550	26	3	2 CHESAPEAKE	200	13.01	266	7843.28	59
51	550	26	4	3 CHESAPEAKE	200	14	265	10775.69	70
51	670	3	1	1 STONE CONTAINER CORP	290	8.8	400	2542.33	41.8
51	670	3	2	2 STONE CONTAINER CORP	290	13.5	350	4437.31	31
51	670	26	10C	102 ALLIEDSIGNAL INC	151	7	500	654.24	17
51	670	26	14A	108 ALLIEDSIGNAL INC	185	5	100	981.75	50
51	700	13	1	1 NEWPORT NEWS SHIPBUILDING	155	14.5	350	2823.73	17.1
51	700	13	3	1 NEWPORT NEWS SHIPBUILDING	155	14.5	350	2823.73	17.1
51	760	308	2	2 PHILIP MORRIS USA	150	4.3	300	1350.55	93
53	7	1	3	0 ALCOA WENATCHEE WORKS	56	4.53	140	771.2	47.85
53	11	11	16	16 VANALCO	80	0.4	158	6.01	47.85
53	15	3	20	20 WEYERHAEUSER CO LONGVIEW	16	0.65	323	215.69	650
53	41	10	BW21	1 CENTRALIA	470	23.99	300	37517.12	83

53	41	10	BW22	1 CENTRALIA	470	23.99	300	37517.12	83
53	53	19	1	0 KAISER ALUMINUM TACOMA WOI	56	4.53	140	771.2	47.85
53	57	3	14	14 TEXACO REFINING & MARKETING	17	0.9	600	413.51	650
53	57	3	21	21 TEXACO REFINING & MARKETING	20	1	390	510.51	650
53	57	3	32	0 TEXACO REFINING & MARKETING	129	6.5	428	2006.25	60.46
53	57	5	7	7 TESORO NORTHWEST CO	16	1.28	460	836.42	650
53	57	5	8	8 TESORO NORTHWEST CO	22	0.74	500	279.56	650
53	63	16	3	3 KAISER ALUMINUM MEAD WORKS	80	0.45	372	103.38	650
53	63	16	4	4 KAISER ALUMINUM MEAD WORKS	56	0.25	154	31.91	650
53	65	25	17	17 NORTHWEST ALLOYS INC	10	0.53	263	143.4	650
53	71	3	3	3 BOISE CASCADE WALLULA	17	0.89	375	404.37	650
53	71	3	10	10 BOISE CASCADE WALLULA	17	1.3	335	862.76	650
53	73	1	3	0 INTALCO ALUMINUM	56	4.53	140	771.2	47.85
53	73	5	4	4 TOSCO CORP	10	0.69	560	243.05	650
53	73	7	17	17 ARCO PETROLEUM CHERRY POI	22	0.25	1500	31.91	650
54	9	2	17	11 WHEELING-PITTSBURGH STEEL	200	8.99	352	2101.06	33.1
54	9	2	18	11 WHEELING-PITTSBURGH STEEL	200	8.99	352	2101.06	33.1
54	23	3	1	2 MT STORM	741	29.01	250	63453.79	96
54	23	3	2	2 MT STORM	741	29.01	250	63453.79	96
54	23	3	3	1 MT STORM	579	20.99	285	36679.35	106
54	29	1	22	26 WEIRTON STEEL CORPORATION	150	7.4	459	1217.57	28.31
54	29	1	23	26 WEIRTON STEEL CORPORATION	150	7.4	459	1217.57	28.31
54	33	15	1	1 HARRISON	1000	28.01	270	59770.77	97
54	33	15	2	1 HARRISON	1000	28.01	270	59770.77	97
54	33	15	3	1 HARRISON	1000	28.01	270	59770.77	97
54	35	2	7	74 RAVENSWOOD ALUMINUM CORP	40	0.83	100	11.69	21.6
54	35	2	12	144 RAVENSWOOD ALUMINUM CORP	53	1.92	150	166.77	57.6
54	39	3	OB1	3 UNION CARBIDE - SOUTH CHARL	150	12	387	3978.77	35.18
54	39	3	OB1	4 UNION CARBIDE - SOUTH CHARL	150	10	387	2763.04	35.18
54	39	6	1	1 KANAWHA RIVER	325	19.18	306	24269.87	84
54	39	6	2	1 KANAWHA RIVER	325	19.18	306	24269.87	84
54	39	7	71	8 RHONE-POLUENC	200	9.5	350	4607.35	65
54	39	7	81	8 RHONE-POLUENC	200	9.5	350	4607.35	65
54	39	7	91	8 RHONE-POLUENC	200	9.5	350	4607.35	65
54	49	9	8	2 RIVESVILLE	152	9.03	340	4418.91	69
54	51	2	1	77 PPG INDUSTRIES, INC.	225	16	335	4423.37	22
54	51	2	2	77 PPG INDUSTRIES, INC.	225	16	335	4423.37	22

54	51	2	3	78 PPG INDUSTRIES, INC.	298	9	343	5089.39	80
54	51	2	36	92 PPG INDUSTRIES, INC.	100	2.5	775	165.42	33.7
54	51	5	1	1 MITCHELL	1204	30	360	94719.24	134
54	51	5	2	1 MITCHELL	1204	30	360	94719.24	134
54	51	6	1	1 KAMMER	900	22.99	360	45662.69	110
54	51	6	2	1 KAMMER	900	22.99	360	45662.69	110
54	51	6	3	1 KAMMER	900	22.99	360	45662.69	110
54	51	11 K01		1 VENCO MOUNDSVILLE CALCININ'	190	12.5	1735	7866.27	64.1
54	51	11 K02		2 VENCO MOUNDSVILLE CALCININ'	190	12.5	1795	8933.93	72.8
54	51	19 01A		2 COLUMBIAN CHEMICALS COMPAN	200	4.9	600	535.55	28.4
54	53	1	11	1 PHILIP SPORN	600	21.5	260	39935.63	110
54	53	1	21	1 PHILIP SPORN	600	21.5	260	39935.63	110
54	53	1	31	1 PHILIP SPORN	600	21.5	260	39935.63	110
54	53	1	41	1 PHILIP SPORN	600	21.5	260	39935.63	110
54	53	1	51	2 PHILIP SPORN	601	15.1	240	29189.89	163
54	53	4	2	107361 AMERICAN ALLOYS, INC.	79	9.49	299	6981.37	98.7
54	53	4	3	107361 AMERICAN ALLOYS, INC.	79	9.49	299	6981.37	98.7
54	53	9	1	1 MOUNTAINEER	1103	30.26	330	75512.36	105
54	61	1	1	1 FORT MARTIN	550	23.51	289	33426.19	77
54	61	1	2	1 FORT MARTIN	550	23.51	289	33426.19	77
54	73	3 0WA		700 CYTEC INDUSTRIES	151	8	300	2573.6	51.2
54	73	4	1	1 WILLOW ISLAND	160	7.98	385	4051.18	81
54	73	4	2	2 WILLOW ISLAND	216	15.01	375	15925.56	90
54	73	5	1	1 PLEASANTS	1000	19.99	150	34523.05	110
54	73	5	2	1 PLEASANTS	1000	19.99	150	34523.05	110
54	73	6	1	1 CABOT CORPORATION-OHIO RIV	90	3	600	315.97	44.7
54	73	6	2	3 CABOT CORPORATION-OHIO RIV	141	4	1800	4413.32	351.2
54	73	6	3	4 CABOT CORPORATION-OHIO RIV	141	4	1800	1820.87	144.9
54	73	6	4	5 CABOT CORPORATION-OHIO RIV	153	5.3	1800	794.23	36
54	73	6	5	6 CABOT CORPORATION-OHIO RIV	139	5	1000	431.97	22
54	73	6	6	8 CABOT CORPORATION-OHIO RIV	139	5	1000	492.84	25.1
54	73	6	7	10 CABOT CORPORATION-OHIO RIV	139	5	1000	563.52	28.7
54	77	1	1	1 ALBRIGHT	166	9.1	360	7024.21	108
54	77	1	2	1 ALBRIGHT	166	9.1	360	7024.21	108
54	77	1	3	2 ALBRIGHT	225	10.52	350	11386.59	131
54	79	6	1	2 JOHN E AMOS	903	32.99	330	91461.71	107
54	79	6	2	2 JOHN E AMOS	903	32.99	330	91461.71	107

54	79	6	3	1 JOHN E AMOS	903	30.26	310	76950.69	107
54	107	1 P03		476 DUPONT WASHINGTON WORKS	150	7.5	332	1435.81	32.5
54	107	1 P04		476 DUPONT WASHINGTON WORKS	150	7.5	332	1435.81	32.5
54	107	1 P05		477 DUPONT WASHINGTON WORKS	150	9	364	2837.34	44.6
54	107	1 P06		477 DUPONT WASHINGTON WORKS	150	9	364	2837.34	44.6
55	9	319	5	3 PULLIAM	377	15.01	360	9378.39	53
55	9	319	6	3 PULLIAM	377	15.01	360	9378.39	53
55	9	319	7	1 PULLIAM	377	11	355	5797.04	61
55	9	319	8	4 PULLIAM	377	15.59	350	12407.85	65
55	9	321 B26		16 GREEN BAY PACKAGING INC MIL	212	5.6	335	1459.09	59.24
55	9	328 B26		10 FORT JAMES CORPORATION (FT	400	12.5	330	6659.95	54.27
55	9	328 B27		10 FORT JAMES CORPORATION (FT	400	12.5	330	6659.95	54.27
55	9	328 B28		10 FORT JAMES CORPORATION (FT	400	12.5	330	6659.95	54.27
55	11	341 B4		1 ALMA	700	17	366	17250.53	76
55	11	341 B5		1 ALMA	700	17	366	17250.53	76
55	11	4271 B1		1 J P MADGETT	700	17.48	347	26397.72	110
55	21	30	1	1 COLUMBIA	500	20.99	288	41523.79	120
55	21	30	2	2 COLUMBIA	650	20.99	293	41523.79	120
55	25	44	8	3 BLOUNT STREET	250	8.52	290	3249.71	57
55	25	44	9	3 BLOUNT STREET	250	8.52	290	3249.71	57
55	25	83 B24		10 WIS DOA / UW MADISON--CHART	250	11	275	2501.28	26.32
55	31	95 I20		14 MURPHY OIL USA	150	2	580	18.79	5.98
55	43	145	1	2 NELSON DEWEY	354	13.01	312	14091.31	106
55	43	145	2	1 NELSON DEWEY	354	13.01	302	14091.31	106
55	59	62	1	1 PLEASANT PRAIRIE	450	30	280	21912.66	31
55	59	62	2	1 PLEASANT PRAIRIE	450	30	280	21912.66	31
55	69	80 B24		15 TENNECO PACKAGING INC.	199	10.6	383	4777.72	54.14
55	69	80 B25		11 TENNECO PACKAGING INC.	154	7	421	1190.33	30.93
55	69	80 B28		15 TENNECO PACKAGING INC.	199	10.6	383	4777.72	54.14
55	71	343 P36		11 ROCKWELL LIME COMPANY	77	6	500	1152.46	40.76
55	71	359 B25		10 MANITOWOC PUBLIC UTILITIES	250	12	350	3335.25	29.49
55	71	359 B26		10 MANITOWOC PUBLIC UTILITIES	250	12	350	3335.25	29.49
55	71	4125	5	3 MANITOWOC	494	18.32	270	20600.17	78.15
55	73	90	1	2 WESTON	242	12.51	338	5039.52	41
55	73	90	2	1 WESTON	242	12.51	337	5899.93	48
55	73	90	3	3 WESTON	496	16	333	25333.86	126
55	73	91 P20		20 WAUSAU-MOSINEE PAPERS-BRC	160	5	170	983.91	50.11

55	73	95 B20		10 MOSINEE PAPER CORP	213	8.5	349	2718.09	47.9
55	75	391 B05		5 KIMBERLY-CLARK TISSUE COMP,	100	8	400	833.91	16.59
55	75	392 P03		8 BADGER PAPER MILLS INC	100	2	100	180.08	57.32
55	75	392 P08		8 BADGER PAPER MILLS INC	100	2	100	180.08	57.32
55	75	392 P27		7 BADGER PAPER MILLS INC	197	5	185	920.69	46.89
55	75	393 B21		11 CONSOLIDATED PAPERS, INC. NI	127	9	380	3168.15	49.8
55	75	393 B22		11 CONSOLIDATED PAPERS, INC. NI	127	9	380	3168.15	49.8
55	75	393 B23		11 CONSOLIDATED PAPERS, INC. NI	127	9	380	3168.15	49.8
55	75	393 B24		12 CONSOLIDATED PAPERS, INC. NI	191	6	400	1000.63	35.39
55	79	76	5	1 SOUTH OAK CREEK	454	19.08	230	20586.39	72
55	79	76	6	1 SOUTH OAK CREEK	454	19.08	230	20586.39	72
55	79	76	7	2 SOUTH OAK CREEK	557	17.33	240	24059.59	102
55	79	76	8	2 SOUTH OAK CREEK	557	17.33	240	24059.59	102
55	79	78	1	1 VALLEY	400	11	265	8553.01	90
55	79	78	2	1 VALLEY	400	11	265	8553.01	90
55	79	78	3	1 VALLEY	400	11	265	8553.01	90
55	79	78	4	1 VALLEY	400	11	265	8553.01	90
55	85	81 B26		9 WAUSAU-MOSINEE PAPER CO.-R	207	7	339	1659.07	43.11
55	87	309 B21		10 INTER LAKE PAPERS (REPAP WIS	225	12	330	1300.62	11.5
55	87	309 B22		10 INTER LAKE PAPERS (REPAP WIS	225	12	330	1300.62	11.5
55	87	309 B24		12 INTER LAKE PAPERS (REPAP WIS	225	15	350	1784.82	10.1
55	87	311 B09		9 THILMANY PULP & PAPER COMP/	290	8.5	341	3668.57	64.65
55	87	311 B11		9 THILMANY PULP & PAPER COMP/	290	8.5	341	3668.57	64.65
55	87	312 B23		15 APPLETON PAPERS INC LOCKS N	250	11	260	2167.71	22.81
55	89	40	1	1 PORT WASHINGTON	505	16.51	380	17554.92	82
55	89	40	2	1 PORT WASHINGTON	505	16.51	380	17554.92	82
55	89	40	3	1 PORT WASHINGTON	505	16.51	380	17554.92	82
55	89	40	4	2 PORT WASHINGTON	506	11.99	340	10387.64	92
55	93	230 P70		11 PIERCE COUNTY HIGHWAY DEPT	20	2.3	160	243.47	58.6
55	105	37	1	1 ROCK RIVER	250	11.99	295	4742.19	42
55	105	37	2	1 ROCK RIVER	250	11.99	295	4742.19	42
55	117	330	3	2 EDGEWATER	550	17	384	21336.18	94
55	117	330	4	1 EDGEWATER	550	17	355	25194.85	111
55	117	330	5	3 EDGEWATER	550	17.3	342	23506.24	100
55	123	209	1	1 GENOA	500	15.26	335	20118.36	110
55	135	338 P51		51 WAUPACA FOUNDRY-PLANTS 2 8	88	5.7	1240	2417.8	94.75
55	139	403 P30		10 ROCKWELL AUTOMOTIVE	27	13.2	115	1000.36	7.31

55	139	1174 B01	2 QUALITY TRUCK CARE CENTER	24	0.8	443	283.48	563.96
55	141	94 B23	11 CONSOL PAPERS INC BIRON DIV	230	5.3	327	1122.29	50.87
55	141	105 B20	10 NEKOOSA PAPERS INC PORT ED	202	13	400	3417.86	25.75
55	141	105 B21	10 NEKOOSA PAPERS INC PORT ED	202	13	400	3417.86	25.75
55	141	105 B24	10 NEKOOSA PAPERS INC PORT EE	202	13	400	3417.86	25.75
55	141	105 P30	11 NEKOOSA PAPERS INC PORT ED	208	4	132	975.53	77.63
55	141	106 B20	10 NEKOOSA PAPERS INC NEKOOS	194	14	350	8337.3	54.16
55	141	106 B21	10 NEKOOSA PAPERS INC NEKOOS	194	14	350	8337.3	54.16
55	141	106 B24	10 NEKOOSA PAPERS INC NEKOOS	194	14	350	8337.3	54.16
56	3	17 1	0 KCS MOUNTAIN RESRCS-AINSWIC	40	4.38	632	745.84	49.5
56	5	2 5	1 NEIL SIMPSON	511	18.99	288	22856.74	80.7
56	5	46 BW91	1 WYODAK	400	19.99	150	32012.28	102
56	5	7504 2	1 NEIL SIMPSON 2	511	18.99	288	22856.74	80.7
56	7	1 29	28 SINCLAIR OIL CORP	128	4.5	520	2484.26	156.2
56	7	1 53	0 SINCLAIR OIL CORP	189	3.67	872	618.42	58.46
56	7	1 54	0 SINCLAIR OIL CORP	189	3.67	872	618.42	58.46
56	9	1 BW41	2 DAVE JOHNSTON	500	11	290	8838.11	93
56	9	1 BW42	2 DAVE JOHNSTON	500	11	290	8838.11	93
56	9	1 BW43	3 DAVE JOHNSTON	500	15.01	268	21941.89	124
56	9	1 BW44	1 DAVE JOHNSTON	249	22.99	130	20755.77	50
56	13	5 1	1 KOCH SULFUR PRODUCTS COMF	70	2.5	133	150.21	30.6
56	13	5 2	2 KOCH SULFUR PRODUCTS COMF	70	2.5	135	150.21	30.6
56	13	11 18	18 SNYDER OIL CORP.-RIVERTON PI	120	0.33	50	1.15	13.5
56	13	28 4	0 LOUISIANA LAND & EXPLOR - LOS	40	4.38	632	745.84	49.5
56	17	6 1	0 KCS MOUNTAIN RESRCS-GOLDEI	40	4.38	632	745.84	49.5
56	21	1 4	4 FRONTIER REFINING, INC.	136	2.8	875	1311.56	213
56	23	1 8	8 FMC COKING PLANT	33	1.92	729	217.78	75.22
56	23	4 1	1 NAUGHTON	200	14	300	13392.64	87
56	23	4 2	2 NAUGHTON	224	15.51	300	18326.78	97
56	23	4 3	3 NAUGHTON	470	27.5	120	24946.27	42
56	23	13 1	1 EXXON SHUTE CREEK I	199	6.9	535	2019.22	54
56	25	5 21	21 LITTLE AMERICA REFIN	150	4.3	500	623	42.9
56	25	5 22	22 LITTLE AMERICA REFIN	200	1.6	72	26.38	13.12
56	29	12 1	1 AMOCO PROD CO.-ELK BASIN GA	75	2.7	263	1087.86	190
56	31	1 1	1 LARAMIE RIVER	604	28.59	135	32098.83	50
56	31	1 2	1 LARAMIE RIVER	604	28.59	135	32098.83	50
56	31	1 3	2 LARAMIE RIVER	604	28.59	180	41728.48	65

56	37	2	3	3 GENERAL CHEMICAL	156	10.5	355	4156.34	48
56	37	2	4	4 GENERAL CHEMICAL	156	12.5	370	6504.09	53
56	37	3	1	1 MONSANTO COMP-ROCK SPRING	130	12	1800	9387.1	83
56	37	22	12	12 SF PHOSPHATES, INC	198	5.17	70	1427.52	68
56	37	48	5	0 FMC CORP - SODIUM PRODUCTS	165	7.08	387	1385.01	35.18
56	37	48	6	0 FMC CORP - SODIUM PRODUCTS	165	7.08	387	1385.01	35.18
56	37	1002 BW71		1 JIM BRIDGER	500	23.99	140	37065.11	82
56	37	1002 BW72		1 JIM BRIDGER	500	23.99	140	37065.11	82
56	37	1002 BW73		1 JIM BRIDGER	500	23.99	140	37065.11	82
56	37	1002 BW74		2 JIM BRIDGER	500	31	126	36983.7	49
56	41	12	1	1 AMOCO WHITNEY CANYON	174	10.5	1001	5169.44	59.7
56	45	5	1	1 OSAGE	511	18.99	288	22856.74	80.7
56	45	5	2	1 OSAGE	511	18.99	288	22856.74	80.7
56	45	5	3	1 OSAGE	511	18.99	288	22856.74	80.7

SIC	LATC	LONC	SO2_ANN
2631	32.4217	86.4703	998
2621	32.2236	88.0189	963.8
2621	32.2236	88.0189	642.5
2621	32.2236	88.0189	750.7
1311	32.004	88.2018	649
1311	32.004	88.2018	1934.1
4911	34.7439	87.8486	8350.4
4911	34.7439	87.8486	8135.1
4911	34.7439	87.8486	6520.7
4911	34.7439	87.8486	8932.6
4911	34.7439	87.8486	58218
2611	32.4308	86.8669	517
2611	32.4308	86.8669	592
1311	31.0683	87.2033	2759
1311	31.0625	87.3636	12835
1311	31.0625	87.3636	9093
4911	34.0136	85.9703	4892.9
4911	34.0136	85.9703	5168.1
3312	34.0119	86.0436	1594
4911	32.6	87.7667	23973.1
4911	32.6	87.7667	21482.1
3313	34.9467	85.7067	638.2
4911	34.8825	85.7547	3593.6
4911	34.8825	85.7547	4339.4
4911	34.8825	85.7547	3403.7
4911	34.8825	85.7547	4371.5
4911	34.8825	85.7547	2848.1
4911	34.8825	85.7547	3903.8
4911	34.8825	85.7547	7112.1
4911	34.8825	85.7547	8915.2
3312	33.5808	86.7814	718.8
4911	33.6319	87.0597	19479.4

4911	33.6319	87.0597	22484
4911	33.6319	87.0597	21098
4911	33.6319	87.0597	16351.6
3312	33.5653	86.7997	541.6
3312	33.5653	86.7997	541.6
3312	33.5653	86.7997	541.6
3312	33.5653	86.7997	541.6
2621	34.7342	87.3103	568
2621	34.7342	87.3103	1017
2621	32.4539	87.9789	694.1
1311	30.39	88.1647	921
1311	30.39	88.1647	607
4911	31.0069	88.0103	6508.7
4911	31.0069	88.0103	6533.3
4911	31.0069	88.0103	9392.5
4911	31.0069	88.0103	18181.9
4911	31.0069	88.0103	34697.4
2621	30.7464	88.0572	654
2621	30.7464	88.0572	654
2621	30.7464	88.0572	1258
2621	30.7449	88.1865	973.8
2819	30.9689	88.02	3936
2819	30.9689	88.02	2040
2621	31.5817	87.49	974
2621	31.5817	87.49	1216
2869	34.635	87.0197	1988
2869	34.635	87.0197	2018
2869	34.635	87.0197	2096
2869	34.635	87.0197	2271
2869	34.635	87.0197	702
2869	34.635	87.0197	747
2046	34.635	87.0339	670
3341	31.7908	85.9786	3544
3341	31.7908	85.9786	3040
3241	33.1056	86.8006	1567
3241	33.1056	86.8006	1573
4911	33.2442	86.4567	10577.6

4911	33.2442	86.4567	11450.1
4911	33.2442	86.4567	9849.6
4911	33.2442	86.4567	9962.4
4911	33.2442	86.4567	33818.7
3274	33.0911	86.8114	588
3274	33.0911	86.8114	610
2621	33.3267	86.3575	2778
2621	33.3267	86.3575	2778
2621	33.3267	86.3575	2778
2621	33.3267	86.3575	2778
3312	33.2414	87.5003	524.3
2911	33.2008	87.6008	735.3
2911	33.2008	87.6008	735.3
4911	33.81	87.29	83891
4911	33.81	87.29	9070.7
4911	33.81	87.29	11251.9
4911	33.81	87.29	21808.2
4911	33.81	87.29	21120
4911	31.4875	87.9125	6598
4911	31.4875	87.9125	8479.5
4911	31.4875	87.9125	8028
2812	31.2583	88.0083	1152
1311	31.4642	88.4	2264
2621	31.9797	87.4636	725
4911	64.736	147.36	645.72
4911	34.5778	109.2717	8256.4
4911	34.5778	109.2717	8020
4911	34.3186	109.1636	10404.9
4911	34.3186	109.1636	10582.6
4911	34.577	109.271	9101.48
4911	32.0556	109.8861	3006.1
4911	32.0556	109.8861	1703.7
4911	36.9125	111.3917	17992.4
4911	36.9125	111.3917	21599.3
4911	36.9125	111.3917	24286.6
3331	33.008	110.788	538.02
3331	33.008	110.788	1626.27

3331	33.008	110.788	3206.67
3331	33.008	110.788	1703.5
3331	33.416	110.875	4015.27
3331	33.416	110.875	5701.69
3331	33.416	110.875	1061.36
4911	34.9392	110.2986	663.4
4911	34.9392	110.2986	820.7
4911	34.9392	110.2986	6959.4
4911	34.9392	110.2986	3716
4911	34.933	110.3	1375.44
4911	34.933	110.3	19550.82
4911	34.933	110.3	8107.57
2611	34.506	110.335	2200.35
1021	32.361	111.371	1861.85
4911	32.16	110.9044	2228.9
3241	32.361	111.187	4051.53
3331	32.616	110.621	3977.26
3331	32.616	110.621	1981.63
3331	32.616	110.621	1371.57
3331	32.616	110.621	11704.44
3331	32.616	110.621	8831.66
1499	35.516	113.31	536.81
1499	35.516	113.31	670.33
2611	33.1419	91.9687	894.46
4911	36.2383	94.4778	11083.3
2869	33.2775	93.2439	1907
2869	35.5533	91.6761	6334
4911	35.6789	91.4078	13787.6
4911	35.6789	91.4078	14582.3
2611	34.22	91.9078	883.34
4911	34.4392	92.14	25928.9
4911	34.4392	92.14	29513.4
1311	33.24	93.61	880
2611	33.64	94.1128	971.05
2911	37.9431	122.3967	801.2
2911	38.0242	122.1228	1899.8
2911	38.0247	122.0656	1152.1

2911	38.0247	122.0656	1074.9
2999	38.0178	122.2481	742.7
2999	38.0178	122.2481	792.6
2911	33.8092	118.225	1537.8
2911	33.7486	118.4131	608.2
2911	33.7797	118.2764	616.4
4911	36.21	121.21	949.6
3241	34.4314	116.94	573.73
2999	35.035	120.5894	3950.48
2911	38.0722	122.145	1920.2
2911	38.0722	122.145	3743.3
4911	39.88	104.37	3264.3
4911	39.88	104.37	3142.1
4911	39.88	104.37	3439
4911	39.88	104.37	6669.9
2911	39.8025	104.9314	848
2911	39.8025	104.9314	913.67
2911	39.8025	104.9314	520
4911	40.0694	105.2022	4778.6
4911	39.67	105.0028	877.8
4911	39.67	105.0028	850
4911	39.67	105.0028	1207.4
4911	39.67	105.0028	2421.7
4911	38.8244	104.8331	1837.3
4911	38.8244	104.8331	3079.2
4911	38.6306	104.7056	6410.9
3241	38.3875	105.0172	790.48
3241	38.3875	105.0172	626.63
3241	38.3875	105.0172	1768.62
4911	38.47	105.44	828.32
4961	39.7567	105.2186	877
4961	39.7567	105.2186	3226.85
4911	40.8583	105.0269	843.9
4911	39.1333	108.3167	1011.01
4911	39.1333	108.3167	1886.75
4911	40.4628	107.59	4064.7
4911	40.4628	107.59	3759.7

4911	40.4628	107.59	1243.6
4911	38.2386	108.5072	1399.2
4911	40.2694	103.6933	11633.4
4911	38.2081	104.5747	5886.2
4911	38.2081	104.5747	7013.3
4911	40.4856	107.185	6202.8
4911	40.4856	107.185	7781.8
4911	41.1714	73.1833	646.3
4911	41.1714	73.1833	1236.8
4911	41.1714	73.1833	10717.6
4911	41.0694	73.4056	2766.8
4911	41.0694	73.4056	2755.3
4911	41.5547	72.5814	1440.9
4911	41.5547	72.5814	1742.1
4911	41.2089	73.1086	518.2
4911	41.2836	72.9042	9247.5
4911	41.3856	72.0858	652.7
4911	41.3856	72.0858	3568
4911	39.1647	75.5439	869.9
2099	39.1514	75.5439	1962
4911	39.7444	75.5042	3323.2
4911	39.7444	75.5042	5828.9
4911	39.7444	75.5042	4244.6
2816	39.7523	75.4972	548
2911	39.5881	75.6406	18624.41
2911	39.5881	75.6406	517.65
2911	39.5881	75.6406	8238.78
2819	39.8048	75.4357	655
4911	38.58	75.2389	4608.5
4911	38.58	75.2389	5093.1
4911	38.58	75.2389	9172.5
4911	38.58	75.2389	8981.7
2824	38.6239	75.6319	2117.67
2824	38.6239	75.6319	2070.2
2824	38.6239	75.6319	944.57
4911	29.7578	82.3889	6869.8
2611	30.1417	85.6211	1031.6

2611	30.1417	85.6211	1259.66
2611	30.1417	85.6211	1091
4911	30.2689	85.6983	22595.8
4911	30.2689	85.6983	26179.9
4911	28.4694	80.7642	11683.5
4911	28.4694	80.7642	11960.8
4911	28.4936	80.7825	783.3
4911	28.4936	80.7825	707.5
4911	26.0856	80.1261	1524.8
4911	26.0856	80.1261	1774.5
4911	26.0856	80.1261	3035
4911	26.0856	80.1261	4367.7
4911	28.9594	82.7003	17846.8
4911	28.9594	82.7003	23305.1
4911	28.9594	82.7003	24612.5
4911	28.9594	82.7003	32988.5
4911	25.4356	80.3308	4363.7
4911	25.4356	80.3308	4134
3241	25.7792	80.4194	1510.65
3241	25.8739	80.3742	1292.13
4911	30.4308	81.5508	10120.6
4911	30.4308	81.5508	12898.9
2631	30.3667	81.625	1116.41
4911	30.4158	81.5528	3674.4
4911	30.4158	81.5528	9330
4911	30.5658	87.2239	2512.6
4911	30.5658	87.2239	2565.5
4911	30.5658	87.2239	13304.1
4911	30.5658	87.2239	14852.6
2621	29.8197	85.3133	1189.2
2874	30.4408	82.7881	936
2874	30.4408	82.7881	1138
2874	30.4486	82.8653	1317
2874	30.4486	82.8653	1184
2062	26.7106	80.9036	877.3
3241	28.6428	82.4736	1267.34
4911	28.5833	82.4314	2755.08

2874	28.1664	82.1408	754.36
2874	28.1664	82.1408	843.33
2874	28.1664	82.1408	1405.37
2874	27.8578	82.3875	1313.7
2874	27.8578	82.3875	1390.93
2874	27.8578	82.3875	1324.7
4911	27.7942	82.4017	37991.7
4911	27.7942	82.4017	38825.9
4911	27.7942	82.4017	8543.2
4911	27.7942	82.4017	10537.6
4911	27.9067	82.4225	5707.3
4911	27.9067	82.4225	5623.1
4911	27.9067	82.4225	5507.6
4911	27.9067	82.4225	10396.3
4911	27.9067	82.4225	13407.7
4911	27.9067	82.4225	22351.6
3341	27.9619	82.3803	753.7
4911	30.6794	84.8872	2734.5
4911	30.6794	84.8872	3185.5
4911	26.6964	81.7831	4026.6
4911	26.6964	81.7831	13765.3
4911	27.6058	82.3456	9279.7
4911	27.6058	82.3456	9204.3
4911	27.08	80.39	5043.4
4911	27.08	80.39	7649.6
2631	30.6	81.82	2153.45
2631	30.6	81.82	848.24
2631	30.6	81.82	822.87
2631	30.6	81.82	4591.45
2611	30.6	81.82	1086.64
4911	28.4822	81.1678	5076
4911	28.4822	81.1678	1178.9
2061	26.7017	80.6492	501.64
4911	26.7653	80.0525	13316.3
4911	26.7653	80.0525	12360.8
4911	28.1842	82.7872	15122.8
4911	28.1842	82.7872	14892.4

4911	27.8606	82.6006	6549.2
4911	27.8606	82.6006	6871.7
4911	27.8606	82.6006	9295.4
4911	28.075	81.9292	722.8
4911	28.075	81.9292	6473.3
2874	27.9028	81.9164	1385.02
2874	27.9028	81.9164	1444.2
2874	27.9028	81.9164	1417
2874	27.8875	81.9472	1058.26
2874	27.7444	81.8522	805
2874	27.7444	81.8522	848
2874	27.8442	81.9192	720.46
2874	27.8442	81.9192	945.19
2874	27.8442	81.9192	1446.53
2874	27.77	81.9347	1598
2874	27.77	81.9347	1572
2874	27.8369	82.0489	1382
2874	27.8369	82.0489	1414
2874	27.8369	82.0489	1433
2874	27.8369	82.0489	1636
2874	27.8369	82.0489	1585
2621	29.6833	81.6792	865.5
2621	29.6833	81.6792	4177.8
2621	29.6833	81.6792	781.9
2621	29.6833	81.6792	876
4911	29.7336	81.6339	18207.7
4911	29.7336	81.6339	18709.7
1311	30.8792	87.1792	2614
1311	30.8792	87.1792	2390
4911	30.3753	83.18	608
4911	30.3753	83.18	9539.8
4911	30.3753	83.18	3463.3
2611	30.0664	83.5533	1466.73
2611	30.0664	83.5533	625.34
4911	28.8419	81.3256	2265.1
4911	28.8419	81.3256	8213.1
4911	28.8419	81.3256	10944.4

2819	34.1517	84.785	1273
4911	34.1256	84.9192	34032.1
4911	34.1256	84.9192	36654.5
4911	34.1256	84.9192	46268.8
4911	34.1256	84.9192	40204.7
2631	32.7714	83.6306	1134.79
2631	32.7714	83.6306	1207.73
4911	32.9269	83.6997	1070.5
4911	32.9269	83.6997	990.9
4911	32.9269	83.6997	1208.4
4911	32.9269	83.6997	1116.3
2631	30.7453	81.5411	4155.09
2631	30.7453	81.5411	500.79
2631	30.7453	81.5411	1555.85
4911	32.1333	81.1333	1268.3
4911	32.1333	81.1333	951.9
4911	32.1333	81.1333	1853.6
4911	32.1333	81.1333	583.8
2621	32.1033	81.1219	1178.56
2621	32.1033	81.1219	3369.38
2631	32.15	81.1506	599.97
2631	32.15	81.1506	872.25
2631	32.15	81.1506	688.46
4911	33.8244	84.475	9377.5
4911	33.8244	84.475	9166.5
2631	33.816	84.6403	1273.85
4911	33.4631	84.955	2519.1
4911	33.4631	84.955	2350
4911	33.4631	84.955	2867.2
4911	33.4631	84.955	2344
4911	33.4631	84.955	7138.9
4911	33.4631	84.955	6786.4
4911	31.4444	84.1322	4128.5
2631	31.1636	85.0936	599.97
2631	31.1636	85.0936	547.46
2631	31.1636	85.0936	1357.48
2631	31.1636	85.0936	1546.12

2631	31.1636	85.0936	845.99
4911	32.3533	81.1628	5712.7
4911	34.25	85.22	2589
4911	34.25	85.22	2026.1
4911	34.25	85.22	2631.1
4911	34.25	85.22	14363.6
2631	34.2539	85.3275	749.72
2631	34.2539	85.3275	578.58
2631	34.2539	85.3275	663.18
2631	34.2539	85.3275	6528.73
3241	33.8228	84.4717	1355.62
3241	33.8228	84.4717	716.97
3241	33.8228	84.4717	638.65
2611	31.1731	81.5206	503.71
2611	31.1731	81.5206	5243.21
2611	31.1731	81.5206	1310.8
4911	31.2125	81.5458	700.1
4911	31.2125	81.5458	1184.4
4911	33.4167	85.0333	33612.2
4911	33.4167	85.0333	37058.5
3241	32.4147	83.6369	695.99
2621	32.5022	82.8469	1609.33
2631	30.695	83.3064	554.27
3295	32.35	84.06	945.55
4911	33.0583	83.8072	24356.1
4911	33.0583	83.8072	24608.3
4911	33.0583	83.8072	23435.7
4911	33.0583	83.8072	22569.3
4911	33.1942	83.2994	13263.7
4911	33.1942	83.2994	13352.4
4911	33.1942	83.2994	16960.3
4911	33.1942	83.2994	22448.2
3255	33.4397	82.0036	998.22
3255	33.4397	82.0036	998.22
3255	33.4397	82.0036	974.39
2631	33.325	81.925	1809.65
2631	33.325	81.925	2722.73

2621	33.3336	81.9531	1217.45
2611	31.6558	81.8394	1286.49
2611	31.6558	81.8394	849.88
2061	19.819	155.104	1130
4911	19.5957	155.4359	1472.41
4911	19.5957	155.4359	1111.58
4911	19.5957	155.4359	1664.99
4931	21.4796	157.9683	1095.1
4931	21.4796	157.9683	1374.34
4931	21.4796	157.9683	1146.56
4931	21.4796	157.9683	1375.85
2911	21.49	157.96	1990.9
4911	21.3597	158.1314	796.23
4911	21.3597	158.1314	1162.19
4911	21.3597	158.1314	1258.14
4911	21.3597	158.1314	1378.31
4911	21.3586	158.1311	1758.62
4911	21.3581	158.1311	1761.42
4911	21.3914	157.9631	1356.06
4911	21.3917	157.9633	1273.63
2061	20.863	156.458	719.5
2061	20.863	156.458	524.1
4911	20.8097	156.3343	909.94
4911	20.8097	156.3343	967.44
1011	43.6	116.6	715.7
1311	42.7	111.6	7520.1
2819	42.7	111.5	699.1
2819	42.7	111.5	639.2
2421	46.4	117	507.48
1475	42.9	112.6	744
1475	42.9	112.6	744
1475	42.9	112.6	744
1475	42.9	112.6	744
2819	42.9	112.5	587.2
2819	42.9	112.5	6591.3
8059	39.9561	91.4019	552.12
2621	39.9194	91.4169	2413.76

2621	39.9194	91.4169	2413.76
4961	40.3011	88.1519	2645.13
4961	40.3011	88.1519	894.82
4911	39.6486	89.4778	9656.4
4911	39.6486	89.4778	10394.3
2046	41.7758	87.8206	1124.93
2046	41.7758	87.8206	1124.93
2046	41.7758	87.8206	1124.93
3274	41.7939	87.8364	872.73
3312	41.6556	87.6258	601.88
3312	41.6556	87.6258	601.88
3312	41.6556	87.6258	3801.91
3312	41.6556	87.6258	641.64
3312	41.6556	87.6258	641.64
3312	41.6556	87.6258	641.64
3312	41.6556	87.6258	641.64
3312	41.6556	87.6258	641.64
4911	41.8264	87.7233	3462.9
4911	41.8264	87.7233	4511.5
3312	41.6803	87.5456	1660.63
4911	41.8453	87.655	3142.6
2911	41.6558	87.6989	1485.22
2911	41.6558	87.6989	563.51
2911	41.6558	87.6989	9684.51
4911	39.1339	87.6597	10771.7
4911	39.1339	87.6597	8528.9
2911	38.9997	87.7242	851.6
2911	38.9997	87.7242	1055.33
2869	39.8072	88.3433	2226.42
2869	39.8072	88.3433	2226.42
4911	40.4644	89.9825	13668.6
4911	41.3542	88.4167	500.2
4911	41.3542	88.4167	1113.2
4911	41.3542	88.4167	591.1
8221	37.7122	89.2167	582.25
8221	37.7122	89.2167	582.25
8221	37.7122	89.2167	582.25

8221	37.7122	89.2167	582.25
4911	37.6575	89.5119	3270.8
4911	37.6575	89.5119	2686.1
4911	37.6575	89.5119	13595.6
4911	38.9364	88.2778	11148.4
4911	38.9364	88.2778	15404.1
4911	42.3833	87.8083	1428.6
4911	42.3833	87.8083	3149.2
4911	42.3833	87.8083	6955.9
3241	41.3303	89.0792	2430.39
2911	38.7144	87.6797	614.21
2911	38.7144	87.6797	614.21
2911	38.7144	87.6797	614.21
2911	38.7144	87.6797	2485.51
2911	38.7144	87.6797	1612.16
3241	41.8606	89.4614	2944.43
9223	40.1078	89.4006	572.12
8221	40.4583	90.6919	1511.55
2046	39.8672	88.8847	5458.81
3531	39.8775	88.9108	664.88
2046	39.8483	88.9275	3999.7
2631	38.8794	90.1433	1255.04
2631	38.8794	90.1433	522.98
4911	38.8639	90.1347	3207.7
4911	38.8639	90.1347	10627.1
2911	38.8342	90.0889	2357
2911	38.8342	90.0889	921.41
2911	38.8364	90.0681	804.99
2911	38.8364	90.0681	761.48
2911	38.8364	90.0681	1153.1
2911	38.8364	90.0681	696.21
2911	38.8364	90.0681	696.21
2911	38.8364	90.0681	739.72
2911	38.8364	90.0681	1261.88
2911	38.8364	90.0681	957.29
2911	38.8364	90.0681	1435.94
2911	38.8364	90.0681	1392.42

2911	38.8364	90.0681	783.24
2911	38.8364	90.0681	522.16
2911	38.8364	90.0681	609.18
2911	38.8364	90.0681	1261.88
2911	38.8364	90.0681	5913.44
2911	38.8364	90.0681	5913.44
2911	38.8364	90.0681	1083.48
2911	38.8364	90.0681	1083.48
2911	38.8364	90.0681	1083.48
2911	38.8364	90.0681	1860.19
2911	38.8364	90.0681	627.46
2911	38.8364	90.0681	1120.9
2911	38.8364	90.0681	1092.18
2911	38.8364	90.0681	573.07
2911	38.8364	90.0681	836.32
2911	38.8364	90.0681	577.9
3312	38.6986	90.1461	804.38
3312	38.6986	90.1461	793.36
2821	41.1361	89.3411	1018.99
4911	40.2797	90.08	7655.9
3241	37.2169	88.8811	4502.52
3241	37.2169	88.8811	5270.81
4911	37.2083	88.8586	4145.9
4911	37.2083	88.8586	4425.6
4911	37.2083	88.8586	4336.5
4911	37.2083	88.8586	3734.4
4911	37.2083	88.8586	4412.2
4911	37.2083	88.8586	4231.7
4911	39.0586	89.4031	15034.6
4911	39.0586	89.4031	28720
4911	39.8225	90.5681	2098.6
4911	39.8225	90.5681	1424.1
4911	39.8225	90.5681	1334.2
4911	39.8225	90.5681	1814.8
4911	39.8225	90.5681	15942.7
2869	40.6756	89.6064	5026.5
2869	40.6756	89.6064	3354.22

2869	40.5647	89.7239	2448.6
4911	40.5961	89.6633	18431.9
4911	40.5961	89.6633	9475.6
4911	40.5961	89.6633	39885.4
4911	39.62	90.9	5298.32
4911	41.3028	89.315	6415
4911	41.3028	89.315	39841.7
2819	41.2989	89.3003	755.67
2819	41.2989	89.3003	755.67
2819	41.2989	89.3003	755.67
4911	38.205	89.8544	92492.1
4911	38.205	89.8544	75792.6
4911	38.205	89.8544	105553.3
9223	37.9125	89.8425	884.02
3523	41.5206	90.4353	2395.01
2892	41.5183	90.5408	631.51
2869	38.5972	90.1697	873.33
3339	38.6017	90.1706	2708.6
4911	39.7547	89.6008	14130.6
4911	39.7547	89.6008	15160.7
4911	39.7547	89.6008	6187.4
4911	39.75	89.6	3239.06
4911	39.75	89.6	2804.76
2869	40.5556	89.6619	8223.6
2869	40.5556	89.6619	3290.11
2869	40.5556	89.6619	3290.11
4911	40.5514	89.6781	6331.2
4911	40.5514	89.6781	6992.8
4911	40.5514	89.6781	4768.3
4911	40.5514	89.6781	5710.8
8063	37.4775	89.2392	865.39
2075	40.1258	87.6233	1078.02
2911	41.6425	88.0506	891.51
2911	41.6425	88.0506	891.51
2911	41.6425	88.0506	8430.24
2911	41.6425	88.0506	5739.55
2911	41.6425	88.0506	1017.74

2911	41.4178	88.1894	884.23
2911	41.4178	88.1894	10918.68
2911	41.4178	88.1894	10498.73
2911	41.4178	88.1894	2216.63
2999	41.6625	88.0378	2572.5
4911	41.4892	88.0844	1967.3
4911	41.4892	88.0844	3661.5
4911	41.4892	88.0844	5444.8
4911	41.4892	88.0844	3971.7
4911	41.4892	88.0844	5754.6
4911	41.63	88.0678	2529.4
4911	41.63	88.0678	2675.4
4911	41.63	88.0678	3789.5
4911	41.63	88.0678	4752.7
4911	37.6167	88.95	1013.7
4911	37.6167	88.95	1029.3
4911	37.6167	88.95	2023.3
4911	37.6167	88.95	2672.6
2075	40.8411	84.9242	625.14
3241	40.7528	86.3567	1066.29
3241	40.7528	86.3567	997.21
4911	40.7592	86.3744	803.85
4911	40.7592	86.3744	1141.06
3241	38.4142	85.7514	1579.98
3241	38.4142	85.7514	2416
2096	40.2853	86.5589	1190.25
4911	39.0806	84.8608	3878.9
4911	39.0806	84.8608	3581
4911	39.0806	84.8608	3711.2
4911	39.0806	84.8608	59875.8
2085	39.1006	84.8642	1696.18
8221	40.2094	85.4078	651.8
8221	40.2094	85.4078	607.73
4911	38.4003	86.9142	1004.13
4911	38.2631	85.8378	9683.3
4911	38.2631	85.8378	11926.1
4911	38.2631	85.8378	15186.5

4911	38.2631	85.8378	13639.5
4911	38.3589	87.7783	43642.8
4911	38.3589	87.7783	47902.9
4911	38.3589	87.7783	35273
4911	38.3589	87.7783	8993
4911	38.3589	87.7783	19916.7
2077	38.9156	87.0253	600.6
4911	40.0969	85.9692	1880.5
4911	40.0969	85.9692	1974.8
4911	40.0969	85.9692	1950.8
4911	41.2175	87.0239	8869.1
4911	41.2175	87.0239	10831.1
4911	41.2175	87.0239	5159.3
4911	41.2175	87.0239	6130.2
4911	38.7389	85.4192	17132.7
4911	38.7389	85.4192	16462.2
4911	38.7389	85.4192	17066.1
4911	38.7389	85.4192	17200.9
4911	38.7389	85.4192	19039.6
4911	38.7389	85.4192	17427.3
4911	38.8067	87.2472	2925.2
4911	38.8067	87.2472	3102.6
4911	38.8067	87.2472	2252.8
2911	41.6706	87.4806	7041.96
2911	41.6706	87.4806	1596.48
2911	41.6706	87.4806	14145.04
2911	41.6706	87.4806	2184.56
4911	41.6394	87.4069	1636.3
4911	41.6394	87.4069	1436.9
4911	41.6394	87.4069	1744.4
4911	41.6394	87.4069	2458.4
3312	41.6167	87.3217	987.99
3312	41.6167	87.3217	905.54
3312	41.6167	87.3217	611.99
3312	41.6167	87.3217	652.37
3312	41.6167	87.3217	546.12
3312	41.6167	87.3217	2705.32

3312	41.6167	87.3217	1512.7
3312	41.6167	87.3217	530.66
3312	41.6167	87.3217	972.36
3312	41.6167	87.3217	1169.37
4911	41.7072	87.5217	2855.6
4911	41.7072	87.5217	2395.8
2819	41.6083	87.48	1074.06
3312	41.6597	87.4456	1064.8
3312	41.6597	87.4456	4629.68
3312	41.6597	87.4456	4629.68
3312	41.6597	87.4456	2513.94
3312	41.6608	87.4553	2212.66
4911	41.7214	86.9094	14841.1
3241	38.7358	86.4581	1173.9
3241	38.7358	86.4581	1181.61
3241	38.7358	86.4581	1278.73
4911	39.7122	86.1975	6044.92
4911	39.7122	86.1975	5465.02
4911	39.7122	86.1975	26763.81
4911	39.7633	86.1664	1193.2
4911	39.7633	86.1664	1184.86
4911	39.7633	86.1664	638.21
4911	39.7633	86.1664	824.75
4911	39.7633	86.1664	595.21
3724	39.7319	86.2136	599.58
8221	39.1694	86.5219	794.04
8221	39.1694	86.5219	713.55
8221	39.1694	86.5219	1455.12
3251	39.615	86.3708	2245.17
4911	39.4853	86.4183	677.2
4911	39.4853	86.4183	1167.6
4911	39.4853	86.4183	1534.8
4911	39.4853	86.4183	5532.4
4911	38.5186	87.2725	5283.5
4911	38.5186	87.2725	8065.5
4911	38.5267	87.2522	10472.36
4911	38.5267	87.2522	16002

4911	38.5267	87.2522	19397.23
4911	38.5267	87.2522	21236.14
4911	41.6436	87.1225	1575.6
4911	41.6436	87.1225	2259.5
2821	37.945	87.9069	1962.67
2821	37.945	87.9069	2237
2821	37.945	87.9069	1404.9
2821	37.945	87.9069	3156.59
2911	37.9414	87.9106	771.57
2911	37.9414	87.9106	536.14
4911	37.9053	87.715	4248.5
4911	37.9053	87.715	3995.1
3272	39.6167	86.8836	3513.35
8221	41.7042	86.2367	1468.47
8221	41.7042	86.2367	1460.78
8221	41.7042	86.2367	5347.93
4911	37.9256	87.0372	34796
4911	37.9256	87.0372	31827.2
4911	39.0694	87.5108	16686.5
4911	39.0694	87.5108	20765.6
2046	40.4419	86.8619	1461.94
2834	40.3897	86.9328	649.88
2834	40.3897	86.9328	1265.75
2834	40.3897	86.9328	615.02
8221	40.4178	86.9117	974.75
8221	40.4178	86.9117	1366.64
2046	40.3753	86.835	5632
4911	39.9008	87.4136	38675.7
4911	39.9008	87.4136	32133.6
2833	39.7339	87.3956	2163.54
8221	39.4728	87.4069	637.76
4911	39.5278	87.4222	4196.7
4911	39.5278	87.4222	5894
4911	39.5278	87.4222	5461
4911	39.5278	87.4222	7926.3
4911	39.5278	87.4222	5166.4
4911	39.5278	87.4222	22464.8

2631	39.4411	87.4253	2398.9
2631	39.4411	87.4253	1599.31
2631	40.7936	85.8325	3464.86
3089	40.1475	87.4356	1124.89
4911	37.91	87.3267	2297.7
4911	37.91	87.3267	1005.1
4911	37.91	87.3267	3794.8
4911	37.9147	87.3322	13535.2
4911	37.9147	87.3322	9823.1
4911	37.9147	87.3322	13931.8
4911	37.9147	87.3322	55628.6
4911	39.8028	84.895	4428.5
4911	39.8028	84.895	9432.15
4911	43.3386	91.1667	1980.7
4911	43.3386	91.1667	3207.8
4911	42.4698	92.3092	555.3
3523	42.4698	92.3092	2108.8
3523	42.4698	92.3092	2176.6
4911	42.4698	92.3092	594
4911	42.4698	92.3092	1144.04
3241	43.0816	93.2607	2610.68
3241	43.0816	93.2607	1417.4
4911	43.0827	95.1507	611.5
2046	41.8814	90.5198	2366.7
2046	41.8814	90.5198	2336.7
2046	41.8814	90.5198	6492.7
2046	41.8814	90.5198	7069.1
4911	41.8075	90.2333	5989.4
4911	40.7411	91.1169	6308.8
4911	42.4848	90.804	4534.5
4911	42.4848	90.804	1801.9
3531	42.4848	90.804	614.1
3531	42.4848	90.804	614.1
3531	42.4848	90.804	614.1
3531	42.4848	90.804	1916.7
8221	41.6426	91.5996	819.37
8221	41.6426	91.5996	1121.23

8221	41.6426	91.5996	2981.76
2046	40.5963	91.4162	1949.2
2046	40.5963	91.4162	2923.8
2046	42.0794	91.5989	2610.4
4911	42.0794	91.5989	719.23
4911	42.0794	91.5989	2629.66
4911	41.9442	91.6367	541.45
4911	41.9442	91.6367	957.6
4911	41.9442	91.6367	2743.9
2011	42.0794	91.5989	1144.2
4911	41.3181	91.0931	17273.9
4911	42.08	92.8603	1691.3
4911	42.08	92.8603	1795.1
4911	42.08	92.8603	3966.7
2046	41.0295	92.8693	1970.7
2046	41.0295	92.8693	1970.7
4911	41.49	91.1	2761.23
4911	41.49	91.1	5046.1
2046	41.466	91.0763	1529.5
2046	41.466	91.0763	1529.5
2046	41.466	91.0763	1151.7
2046	41.466	91.0763	1166.7
2046	41.466	91.0763	4393.2
2046	41.466	91.0763	4832.2
3085	41.466	91.0763	895.2
4911	41.3917	91.0569	6406.3
4911	41.3917	91.0569	768.7
4911	41.18	95.8408	769.3
4911	41.18	95.8408	1912.5
4911	41.18	95.8408	17914.3
4911	41.54	90.4481	738.64
4911	41.54	90.4481	1118.91
4911	41.54	90.4481	1133.2
4911	41.54	90.4481	2284.5
3241	41.6106	90.6079	1310.36
3241	41.6106	90.6079	679.4
3241	41.6106	90.6079	1333.02

4911	42.0247	93.6064	692.6
4911	42.0362	93.4649	1130.77
4911	42.0362	93.4649	2015.02
4911	42.0362	93.4649	3238.2
4911	42.0362	93.4649	1481.79
4911	42.0362	93.4649	1444.24
4911	41.0981	92.5547	17772.7
4911	42.3167	96.3667	3782.1
4911	42.3167	96.3667	6840.4
4911	42.3167	96.3667	10327.2
4911	42.3022	96.3622	19024.7
2911	37.7994	96.8669	1044.42
2911	37.7994	96.8669	1081.19
2911	37.7994	96.8669	1414.68
4911	37.0719	94.6986	2365.09
4911	37.0719	94.6986	3694.19
2911	37.075	97.1314	774.53
2911	37.075	97.1314	532.65
4911	39.0114	95.2764	780.2
4911	39.0114	95.2764	612.7
4911	39.0114	95.2764	2353.8
4911	38.0003	101.0306	2116.4
2819	38.9281	95.0131	1157.44
4911	38.3469	94.6433	6371.5
4911	38.3469	94.6433	21266.1
2911	38.35	97.6714	1816.06
3241	37.2353	95.6219	846.39
3241	37.6886	95.4008	957.99
3241	37.6886	95.4008	964.01
4911	39.2853	96.1086	19423.6
4911	39.2853	96.1086	19140
4911	39.2853	96.1086	18293
4911	39.0522	95.5669	2722.8
4911	39.0522	95.5669	1714.5
4911	39.1717	94.6958	5841.2
4911	39.15	94.6408	6135
4911	39.15	94.6408	1714.8

4911	39.0858	94.6522	1208.6
4911	36.7967	83.7614	665.87
4911	38.9042	84.8517	11022.7
2911	38.3631	82.5989	3758.31
2911	38.3631	82.5989	588.94
2911	38.3631	82.5989	1069.8
3312	38.5017	82.6756	994.4
3312	38.5017	82.6756	732.26
4911	38.7486	85.0333	7484
4911	38.7486	85.0333	14975
4911	38.7486	85.0333	17593.9
4911	38.7486	85.0333	16062
3295	36.8561	87.4822	569.83
4911	37.875	84.25	790.19
4911	37.875	84.25	691.09
4911	37.875	84.25	2055.2
4911	37.875	84.25	3025.4
4911	37.7961	87.0603	1860.9
4911	37.7961	87.0603	4418.7
2075	37.7764	87.1	564.91
2819	38.5558	82.7903	1934.59
4911	37.9628	86.7917	17749.4
4911	37.9628	86.7917	19919.2
4911	37.9628	86.7917	19488.3
3334	37.9456	86.7825	4909.17
4911	37.6333	87.5233	2315.1
4911	37.6333	87.5233	3578
4911	37.845	87.5908	2443
3334	37.6564	87.4908	1590.81
3334	37.6564	87.4908	1596.54
2822	38.2156	85.8406	1424
4911	38.1828	85.8894	3397.1
4911	38.1828	85.8894	4080
4911	38.1828	85.8894	5619.9
4911	38.0531	85.91	7853.8
4911	38.0531	85.91	10285.7
4911	38.0531	85.91	14159.7

4911	38.0531	85.91	19281.1
4953	38.2264	85.7444	740.26
2821	38.2128	85.8456	1755
3639	38.1893	85.6771	1130
4911	38.1744	82.6097	18123.2
4911	38.1744	82.6097	38640.9
4911	37.1519	88.7769	4254.1
4911	37.1519	88.7769	2399.4
4911	37.1519	88.7769	4301.7
4911	37.1519	88.7769	4281.4
4911	37.1519	88.7769	4046.7
4911	37.1519	88.7769	4161.5
4911	37.1519	88.7769	5091.6
4911	37.1519	88.7769	5753
4911	37.1519	88.7769	5164.2
4911	37.1519	88.7769	6432.6
2821	37.0467	88.3506	913.2
2821	37.0467	88.3506	913.18
4911	38.7006	83.815	13333.9
4911	38.7006	83.815	24585.5
4911	37.7911	84.7147	5499.7
4911	37.7911	84.7147	9310.6
4911	37.7911	84.7147	23701.2
4911	37.3636	87.1214	8183.5
4911	37.3636	87.1214	10191.8
4911	37.2597	86.9775	22173.1
4911	37.2597	86.9775	21828.8
4911	37.2597	86.9775	146291.1
4911	37.4497	87.0806	9520.4
4911	36.9983	84.5931	5716.9
4911	36.9983	84.5931	10935.5
4911	38.5858	85.4097	11841.2
4911	37.6464	87.5022	2596.44
4911	37.6464	87.5022	1084.7
4911	37.6464	87.5022	2314
4911	38.04	84.74	1077.8
2819	30.1231	90.9125	8725

2819	30.2256	91.0528	7864
2621	30.8594	93.3756	986
2819	32.3608	93.6325	511
2911	30.2417	93.2817	534
2911	30.2417	93.2817	850
2999	30.1161	93.2978	6348
4911	30.2861	93.2917	15335.8
2911	30.1825	93.3314	1533
2911	30.1825	93.3314	1533
2911	30.1825	93.3314	1533
2911	30.1825	93.3314	1533
2911	30.1825	93.3314	1533
2999	30.1478	93.3406	8192
2816	30.1956	93.3075	653
4911	32.0308	93.5644	23539
3341	30.5864	91.2428	504
3341	30.5864	91.2428	1188
2621	30.65	91.2781	507
2621	30.65	91.2781	507
2621	30.65	91.2781	704
2621	30.65	91.2781	704
2911	30.4828	91.1789	605
2911	30.4828	91.1789	534
2999	30.5839	91.2406	3746
2999	30.5839	91.2406	3746
2999	30.5839	91.2406	3746
2999	30.5839	91.2406	3746
2819	30.5108	91.1908	6403
2819	30.5108	91.1908	2243
2631	32.2756	92.7272	513
2819	29.9578	90.2686	677
2621	32.7869	91.9108	1608
2621	31.9047	93.1733	652
2631	32.4822	92.1528	588
2631	32.4822	92.1528	588
2911	29.6839	89.9758	2405

2911	29.6839	89.9758	2023
2911	29.6839	89.9758	2160
2911	29.6839	89.9758	766
2911	29.6839	89.9758	1024
4911	30.7283	91.3686	15613.8
4911	30.7283	91.3686	15421.5
4911	30.7283	91.3686	13520.5
2621	31.2914	92.3539	1101
4911	31.395	92.7167	17215.6
2911	29.9308	89.9428	1116
2999	29.9344	90	2808
2911	29.999	90.4041	1242.71
2911	29.999	90.4041	1347.74
2911	29.999	90.4041	1223.99
2911	29.999	90.4041	3304.88
2999	30	90.398	1324
2911	30.109	90.8972	2671.73
2911	30.109	90.8972	2482.24
2874	30.036	90.8355	2368.57
2874	30.036	90.8355	2014.02
2874	30.036	90.8355	2654.08
2874	30.036	90.8355	2842.09
2999	30.056	90.6702	1203.82
2999	30.056	90.6702	1298.66
2911	30.534	91.7491	631.33
2911	30.534	91.7491	541.76
2895	29.679	91.455	2981.12
2895	29.679	91.455	1206.03
2621	30.7806	89.8578	603.5
2621	30.7806	89.8578	777.5
2895	30.3286	91.2794	1296
2895	30.3286	91.2794	1331
2895	30.3286	91.2794	1331
2911	30.475	91.205	806
4911	43.7508	70.1567	3563.8
4911	43.7508	70.1567	1224.7
2611	43.685	70.3536	887.7

2611	44.71	68.36	1480.5
2621	44.3305	70.3237	507.8
2621	45.4	68.66	598.17
2621	45.4	68.66	778.43
2621	45.3844	68.4213	926.14
2621	45.3844	68.4213	950.2
2621	45.3844	68.4213	2147.21
2621	45.3721	68.3427	630.01
2621	45.3721	68.3427	635.81
2621	45.52	69.96	627.64
2621	45.52	69.96	567.13
2611	45.52	69.96	1874.17
2621	39.4742	79.0586	614.7
4911	39.1758	76.5328	6195.6
4911	39.1758	76.5328	11327.9
4911	39.1758	76.5328	1798
4911	39.1814	76.5328	26836.7
4911	39.1814	76.5328	25415.9
3312	39.2189	76.4817	3358.2
4911	38.3592	76.9756	37235.6
4911	38.3592	76.9756	35542
9711	38.5992	77.1611	1300.3
4911	38.4831	75.8139	2581.7
3295	39.5214	77.315	845.9
3295	39.5214	77.315	766.1
3334	39.3319	77.4667	1920.8
3334	39.3319	77.4667	1815
9711	39.4333	77.4353	2000
9711	39.4333	77.4353	2000
4911	39.2075	77.4622	16128.5
4911	39.2075	77.4622	16125.7
4911	38.5439	76.6844	20327.6
4911	38.5439	76.6844	16883.2
4911	38.5439	76.6844	2678.2
4911	38.5439	76.6844	1353.5
4911	39.5833	77.8167	2068.9
4911	39.32	76.63	15580.5

4911	39.32	76.63	13163.1
4911	41.7717	70.5064	10610.4
4911	41.7717	70.5064	4620
4911	41.7369	71.1453	3963
4911	41.7072	71.1947	9045.3
4911	41.7072	71.1947	9478.6
4911	41.7072	71.1947	22129.7
4911	41.7072	71.1947	3664.1
4911	42.5256	70.8772	3339.3
4911	42.5256	70.8772	3291.3
4911	42.5256	70.8772	5407.7
4911	42.5256	70.8772	11752.3
4911	42.2	72.59	7313.8
4911	42.3958	71.0717	639.5
4911	42.3958	71.0717	1183.3
4911	42.3958	71.0717	7122
2621	46.4086	86.6461	758.37
3241	45.0717	83.4072	10728
3241	45.0717	83.4072	10765
4911	43.645	83.8414	9764.5
4911	43.645	83.8414	9506.2
4911	43.645	83.8414	1727.8
4911	43.645	83.8414	1669.7
4911	43.6392	83.8442	5101.7
4911	43.6392	83.8442	5690.3
3241	45.3167	85.2994	3951.17
4911	45.23	85.03	1589.77
2621	45.8036	87.0914	4790.01
4911	45.93	86.94	644.82
4911	45.93	86.94	646.97
4911	42.6919	84.6572	5795
2911	43.3792	84.6361	1243
2911	43.2918	84.6069	1243
4911	43.8519	82.6436	944.9
8221	42.7228	84.4842	1402.36
8221	42.7228	84.4842	1136.5
8221	42.7228	84.4842	794.1

4911	42.7189	84.5583	1459.1
4911	42.7189	84.5583	1474
4911	42.7189	84.5583	1512
2621	42.2867	85.5469	697.16
1311	44.7469	85.0369	846
3297	44.2253	86.2939	712.7
2899	44.2422	86.31	1027.33
4911	46.5694	87.3933	1701
4911	46.5694	87.3933	1690.5
4911	46.5694	87.3933	3399.1
4911	46.5694	87.3933	3134.8
4911	46.5694	87.3933	2995.1
4911	46.5694	87.3933	3253.5
4911	46.5694	87.3933	2868.9
3241	41.9928	83.6597	5627.71
3241	41.9089	83.4797	9191.9
4911	41.8911	83.3444	26736.6
4911	41.8911	83.3444	30040.1
4911	41.8911	83.3444	31229.4
4911	41.8911	83.3444	29995.5
4911	41.7914	83.4486	3537.8
4911	41.7914	83.4486	4433.3
4911	41.7914	83.4486	4235.7
2621	43.215	86.3031	2510
2621	43.2948	86.1256	883.5
2621	43.2948	86.1256	7530
2621	43.2948	86.1256	1405.2
4911	43.2631	86.2406	6335.9
4911	43.2631	86.2406	5828.4
3711	42.6122	83.2519	532.63
2611	46.8689	89.3211	1525.27
2611	46.6819	89.3752	1525.27
1021	46.7644	89.5733	651.59
4911	42.96	85.99	1010.34
4911	42.96	85.99	1216.6
4911	42.9103	86.2031	9841.1
4911	42.9103	86.2031	12929.9

4911	42.9103	86.2031	22141.1
2899	42.8183	82.485	655.61
4911	42.7617	82.4722	6025.1
4911	42.7617	82.4722	5625.3
4911	42.7617	82.4722	5511.4
4911	42.7617	82.4722	5657.2
4911	42.7617	82.4722	12809.7
4911	42.7617	82.4722	12372.2
4911	42.775	82.4939	13129.9
4911	42.775	82.4939	15013.3
2621	42.9864	82.4425	1014.78
3312	42.2544	83.1336	878.4
3312	42.2544	83.1336	1552.92
3312	42.2398	83.2111	878.4
3312	42.2544	83.1336	537.44
3312	42.2544	83.1336	604.64
3312	42.2544	83.1336	549.82
3312	42.2398	83.2111	549.82
3312	42.3031	83.1656	1203.1
3312	42.2398	83.2111	1203.1
3312	42.3031	83.1656	2027.6
3312	42.2398	83.2111	2027.6
3312	42.3031	83.1656	848
3312	42.3031	83.1656	848.16
3312	42.3031	83.1656	848.36
2911	42.2819	83.1586	507.57
2911	42.2819	83.1586	744.26
4911	42.3	83.28	1316.4
4911	42.33	83.0492	592.6
4911	42.2739	83.1119	7895.8
4911	42.2739	83.1119	7000.4
4911	42.1225	83.1811	1911.8
4911	42.1225	83.1811	1821.8
4911	42.1225	83.1811	1742.1
4911	42.1225	83.1811	1833
4911	42.1225	83.1811	19508
2621	46.722	92.4308	713.21

4911	47.531	90.9102	7060.88
4911	47.531	90.9102	3965.38
4911	47.531	90.9102	3774.06
4911	44.8103	93.2517	676.4
4911	44.8103	93.2517	2229.2
2819	44.759	93.0227	1300.82
2911	44.766	93.0377	1654.01
2911	44.766	93.0377	885.91
3341	44.834	93.1177	1212.04
4911	45.0203	93.2753	736.1
4911	45.0203	93.2753	707.5
4911	45.0203	93.2753	7094.3
4911	47.2603	93.6531	1757.1
4911	47.2603	93.6531	8038.5
4911	47.2603	93.6531	2928.3
1011	47.285	91.2625	997.96
4911	43.6725	94.7069	791.1
4911	43.7006	92.9617	2434.97
4911	44.0281	92.4597	2176.28
4911	46.3169	96.0425	830.9
4911	46.3169	96.0425	607.3
4911	44.9339	93.1078	1083.6
4911	44.9339	93.1078	1979.1
2063	44.791	95.2122	894.18
4911	47.5311	92.1617	1042.5
4911	47.5311	92.1617	846.9
4911	47.5225	92.5417	668.48
4911	45.3786	93.8953	5073.8
4911	45.3786	93.8953	5082.4
4911	45.3786	93.8953	11177.5
2911	44.851	93.0038	746.58
4911	45.0311	92.7753	26181.1
2671	44.79	92.9113	528.34
2631	31.4705	91.4046	4227.81
2631	31.4705	91.4046	1261.42
2631	31.4705	91.4046	773.39
2819	32.0271	88.6728	1667.9

4911	30.4392	89.0264	19627.3
4911	30.4392	89.0264	43588.4
2816	30.4944	89.0914	1563.6
2816	30.4944	89.0914	914.3
2621	30.5274	88.6393	1933.6
2621	30.5274	88.6393	966.8
2911	30.3517	88.4898	2868.2
2911	30.3517	88.4898	1402.8
2911	30.3517	88.4898	1094
4911	30.5322	88.5569	12272.8
4911	30.5322	88.5569	9476.4
2911	31.2081	89.5013	1052.4
2911	31.2081	89.5013	948.6
2911	31.2081	89.5013	680.6
2911	31.2081	89.5013	2520
2911	31.2081	89.5013	3233.6
2999	31.2081	89.5013	1659.2
4911	31.2175	89.3939	4847
4911	31.2175	89.3939	3749
3241	33.5162	88.4603	3688.75
3241	33.5162	88.4603	3545.84
2611	33.5162	88.4603	2282.99
2611	31.1719	88.99	2639.56
2819	32.3172	89.99	18229.3
4911	33.3503	91.1181	15552.9
4911	38.9658	92.3167	621
4911	39.7278	94.8786	502.89
4911	39.7278	94.8786	6056.57
4911	39.7278	94.8786	8794.4
3241	37.2658	89.5394	1349.17
4911	38.5628	90.8378	11680.7
4911	38.5628	90.8378	6898.6
4911	38.5628	90.8378	51536.4
4911	38.5628	90.8378	36789.6
4911	37.1539	93.3886	2358
4911	37.1539	93.3886	4873.5
4911	37.1539	93.3886	8512.5

4911	37.1467	93.3828	3066.1
4911	38.3036	93.9367	2877.2
4911	38.3036	93.9367	2883.8
4911	38.3036	93.9367	2547.1
3321	37.4833	90.6917	47724.19
2911	37.4833	90.6917	669.43
2819	37.4833	90.6917	1562.04
3339	37.6364	91.1322	1042
4911	39.1297	94.4775	8352.2
3241	39.1419	94.4175	2458.94
3241	39.1419	94.4175	2458.94
4911	39.1789	94.1831	1878.8
4911	39.1789	94.1831	1853.2
4911	39.1789	94.1831	14161.5
4911	39.0919	94.3264	984.69
4911	39.0919	94.3264	995.48
4911	39.0919	94.3264	1129.5
4911	37.2733	94.6083	6338.5
2819	38.2589	90.3758	39238.13
4911	38.1311	90.2631	13225.3
4911	38.1311	90.2631	14043.9
4911	39.8017	93.5547	634.07
2879	39.8028	91.4364	939.02
2879	39.8028	91.4364	810.75
4911	36.5511	89.5919	8855.3
4911	36.5511	89.5919	8007
3334	36.5103	89.5606	2585.29
3334	36.5103	89.5606	719.97
3334	36.5103	89.5606	719.97
4911	38.6722	91.7711	1017.66
4911	38.6722	91.7711	10272.2
3241	39.37	91.0208	1617.22
3241	39.37	91.0208	847.24
4911	39.4486	94.9781	18712.9
3241	39.6792	91.3125	1264.17
4911	39.5475	92.6358	2933.5
4911	39.5475	92.6358	4685

4911	39.5475	92.6358	9798.4
4911	38.9147	90.2897	22358.1
4911	38.9147	90.2897	34037.8
3711	38.8169	90.8208	625.17
4911	39.1244	93.2014	1724.84
4911	36.8789	89.6008	9947.6
2082	38.5958	90.2133	500.94
2082	38.5958	90.2133	740.13
4911	38.63	90.26	3343.6
4911	38.63	90.26	3522.1
4911	38.63	90.26	5681.5
4911	38.63	90.26	4677.8
2833	38.6619	90.19	830.06
3241	45.9464	111.2938	2425.62
3332	46.5811	112.3191	7870.7
3332	46.5811	112.3191	576.22
3332	46.5811	112.3191	1661.06
4911	47.79	104.56	549.6
4911	45.8844	106.6139	4594.5
4911	45.8844	106.6139	4623.3
4911	45.8844	106.6139	1803.4
4911	45.8844	106.6139	1173.2
2911	45.6558	108.1948	699.15
2911	45.6558	108.1948	672.71
2911	45.6558	108.1948	672.71
2911	45.6558	108.1948	622.08
2911	45.815	108.1948	4004.26
2911	45.815	108.1948	781.87
2819	45.8103	108.1948	3440.5
4911	45.7758	108.48	4400.7
4911	40.5814	98.3169	2071.54
3241	41.0058	96.1558	1874.2
3241	41.0058	96.1558	1648
4911	41.45	96.5167	914.4
4911	41.3294	95.9456	1611.1
4911	41.3294	95.9456	2883.7
4911	41.3294	95.9456	2716

4911	41.3294	95.9456	3005.6
4911	41.3294	95.9456	5719.6
2869	41.2481	95.9192	1297.46
4911	40.8536	98.4022	2212.7
4911	40.5589	96.7842	2401.6
4911	40.5589	96.7842	2467.1
4911	41.0836	101.1456	13491.7
4911	41.0836	101.1456	12534.1
4911	40.625	95.7917	13468.9
3274	36.358	114.914	829.58
4911	35.1667	114.6	19373
4911	35.1667	114.6	21150.5
4911	36.6606	114.625	1728.3
4911	36.6606	114.625	1734.6
4911	36.6606	114.625	2219.9
4911	36.6606	114.625	1032.7
4911	40.8833	117.1542	4685.9
4911	40.8833	117.1542	978.5
2611	44.2652	71.1112	642.68
2611	44.2652	71.1112	800.35
4911	43.1411	71.4692	10605.9
4911	43.1411	71.4692	24036.8
4911	43.0978	70.7842	2268
4911	43.0978	70.7842	2299.2
4911	43.0978	70.7842	1959.6
4911	43.0986	70.7842	9291.3
2297	39.5306	74.9311	729.42
2297	39.5306	74.9311	622.04
2297	39.5306	74.9311	814.34
2621	40.8886	74.1214	536.49
2621	40.8886	74.1214	512.73
4911	39.29	74.6339	18567.5
4911	39.29	74.6339	1751.6
4911	39.29	74.6339	507.6
2911	39.8675	75.1447	1231.17
2911	39.8411	75.2569	515.37
4911	40.75	74.075	12243.7

7011	40.7975	74.0067	624.7
4911	40.175	74.7333	2725.5
4911	40.175	74.7333	5303.3
4952	40.3797	74.6228	2366.09
4952	40.3797	74.6228	2366.09
4911	40.4758	74.3581	566.11
4911	40.4758	74.3581	565.03
4911	40.4758	74.3581	566.11
4911	40.4758	74.3581	566.11
4911	40.4758	74.3581	566.11
4911	40.4758	74.3581	566.11
4911	40.5553	74.2475	698.97
4911	40.5553	74.2475	698.97
4911	40.5553	74.2475	698.97
4911	40.5553	74.2475	698.97
4911	40.5553	74.2475	698.97
4911	40.5553	74.2475	698.97
2821	40.4478	74.3442	594.07
2821	40.4478	74.3442	1571.36
4911	39.6831	75.5242	3207.1
2869	39.69	75.5094	2217.14
2911	40.6372	74.2242	2690.37
2833	40.6114	74.2622	534
2833	40.6114	74.2622	620.99
4931	40.6225	74.2078	7153.13
4931	40.6225	74.2078	7090.36
4931	40.6225	74.2078	5970.82
4931	40.6225	74.2078	3792.29
4931	40.6225	74.2078	3792.33
4931	40.6225	74.2078	5105.68
1311	32.771	104.263	700
1311	32.484	104.377	900
1321	32.466	104.574	1460
2911	32.853	104.401	730.15
2911	32.853	104.401	617.01
1321	32.762	104.231	1459
1311	32.712	104.444	961.6
3331	32.685	108.099	11300

3331	32.685	108.099	15873
3331	32.685	108.099	876
3331	31.775	108.529	6468
3331	31.775	108.529	22933
3331	31.775	108.529	4843
1321	32.812	103.768	3573
1321	32.174	103.175	1205.9
1321	32.52	103.299	1988
1311	32.805	103.513	818
1311	32.361	103.158	4015
1311	32.449	103.162	673
1321	32.784	103.508	2329
1321	32.426	103.144	3285
1311	32.61	103.307	1460
1321	33.057	103.609	913
1321	33.434	103.544	1204
2911	35.496	108.42	1078
4911	35.4144	108.0825	1488.3
4911	36.6906	108.4822	3939.4
4911	36.6906	108.4822	2228.3
4911	36.6906	108.4822	4385.2
4911	36.6906	108.4822	13777.2
4911	36.6906	108.4822	12507.6
1311	36.757	108.367	5475
4911	36.8833	108.4833	7898.3
4911	36.8833	108.4833	5871.6
4911	36.8833	108.4833	12897.2
4911	36.8833	108.4833	13302.5
2711	42.6842	73.7867	714.35
4911	42.5942	73.7636	732.2
6513	40.8442	73.8778	1074.07
3861	42.1081	75.9106	574.43
4911	42.1117	75.9747	1156.9
4911	42.1117	75.9747	839.4
4911	42.1117	75.9747	9194
4911	42.4919	79.3469	11090.4
4911	42.4919	79.3469	10710.6

4911	42.4919	79.3469	16448.7
4911	42.4919	79.3469	15417.8
4911	42.23	79.37	1036.45
4911	42.23	79.37	1098.3
4911	42.23	79.37	1076.6
4911	42.26	75.4872	630.3
4911	42.26	75.4872	661.8
4911	42.26	75.4872	761.9
4911	42.26	75.4872	923.3
3312	42.8275	78.8625	15925
3312	42.8275	78.8625	14323.4
3312	42.8275	78.8625	9900.8
3312	42.8275	78.8625	1241.57
3312	42.9825	78.9272	14177.8
3351	42.9506	78.8953	624.39
4911	42.9667	78.9167	4270.9
4911	42.9667	78.9167	5315.3
4911	42.9667	78.9167	5955.6
4911	42.9667	78.9167	6692.7
4911	42.9667	78.9167	17285.9
4911	42.9667	78.9167	16106.2
2611	43.8833	73.3942	1685.81
2611	44.0386	75.6814	2193.11
2611	44.0386	75.6814	2401.85
4911	40.7047	73.9808	953.97
4931	40.6519	74.0253	1018.33
6512	40.6547	73.9436	784.51
6513	40.5756	73.9614	781.78
6513	40.6475	73.9472	817.36
6513	40.6475	73.9472	546
6513	40.6453	74.0053	3024.84
8063	40.6572	73.9364	857.24
8221	42.8731	75.5372	595.59
3861	43.1989	77.6325	4646.37
3861	43.1989	77.6325	6713.58
3861	43.1989	77.6325	12012.48
3861	43.1989	77.6325	17618.61

4911	43.1606	77.6161	6687.98
8999	43.1171	77.6291	1255.72
8999	43.1171	77.6291	1529.27
4911	43.2694	77.6308	775.5
4911	43.2694	77.6308	4478.5
4911	43.2694	77.6308	5726.7
4911	43.2694	77.6308	7130.2
4911	40.7681	73.9519	753.8
4911	40.7281	73.9742	949.3
6513	40.7128	73.9806	513.06
8062	40.7844	73.945	4267.92
2611	43.1789	78.6906	891.23
3624	43.0992	79.0056	1167.24
2819	43.0822	79.0097	6671.02
2819	43.0822	79.0097	3630.25
4911	43.3564	78.5992	13969.6
3432	43.2022	75.4456	923.47
4911	41.5719	73.9664	4021
4911	41.5719	73.9664	6323.6
4911	41.5711	73.975	2903
4911	41.5711	73.975	4020.7
4911	43.4586	76.5319	771.6
2082	43.3011	76.3806	2613.77
4911	40.7864	73.9133	987.9
4911	40.7864	73.9133	653.1
4911	40.7589	73.9472	1208
4911	40.7889	73.9083	1686
6514	40.7239	73.8217	2271.09
2621	42.5371	73.7433	552.75
8063	40.6042	74.15	840.54
4911	41.2581	73.9792	3563.6
4911	41.2581	73.9792	5593.3
2621	43.2511	73.8147	2766.88
8412	43.0033	73.6467	5025.34
2899	42.3828	76.8669	3131.75
2899	42.3828	76.8669	1481.44
4911	42.1225	76.9825	917.1

4911	42.1225	76.9825	858.2
4911	40.9189	73.3339	6059.6
4911	40.9189	73.3339	3483.6
4911	40.9189	73.3339	4649.4
4911	40.9189	73.3339	1384.2
4911	40.9492	73.0789	2835.4
4911	40.9492	73.0789	4499.3
8221	42.4453	76.4797	680.73
4911	42.6014	76.6356	2165.4
4911	42.6014	76.6356	2305.9
2822	43.0681	77.2253	941.49
8062	41.0803	73.8	671.17
2899	42.7	78.23	1886.92
4931	42.7	78.23	1233.47
4931	42.7	78.23	661.04
4911	42.6789	76.9483	565.4
4911	42.6789	76.9483	850.5
4911	42.6789	76.9483	7144.4
2874	35.3769	76.7789	1248.71
2874	35.3769	76.7789	1115.06
2874	35.3769	76.7789	508.82
2874	35.3769	76.7789	2266.38
3081	34.8333	78.8339	564.51
4911	34.4364	78.6483	1635.4
2824	34.3208	78.0383	577.3
2824	34.3208	78.0383	577.3
2824	34.3208	78.0383	577.3
4911	35.4714	82.5431	12498.4
4911	35.4714	82.5431	11927.3
2821	35.5403	82.6514	1176
2821	35.5403	82.6514	548
4961	35.5014	80.6231	572.8
4961	35.5014	80.6231	977.56
4911	35.5975	80.9658	16742.1
4911	35.5975	80.9658	16257.6
4911	35.5975	80.9658	34232.7
4911	35.5975	80.9658	33617.3

4911	35.5942	79.0517	5663.5
4911	35.5942	79.0517	8906.3
4911	35.2236	81.7561	744.7
4911	35.2236	81.7561	1047.7
4911	35.2236	81.7561	1364.7
4911	35.2236	81.7561	1397.4
4911	35.2236	81.7561	24323.2
2611	35.2081	77.1244	2754.02
2879	34.9683	78.7833	666.71
2111	36.0989	80.2403	1000.23
2046	36.0394	80.2275	545.7
2111	36.2011	80.3047	3449.36
4911	35.1897	81.0122	4962.4
4911	35.1897	81.0122	5734
4911	35.1897	81.0122	9606.9
4911	35.1897	81.0122	7512.1
4911	35.1897	81.0122	7475.3
4911	35.36	80.9742	4842.4
4911	35.36	80.9742	3520.7
4911	35.36	80.9742	3458
4911	35.36	80.9742	4654.1
2819	35.2833	81.2958	607
2819	35.2833	81.2958	1013.98
2211	36.1058	79.7725	541.02
2671	36.4794	77.6419	1779.84
2671	36.4794	77.6419	1130.9
4931	36.4364	77.6167	660.28
2261	35.325	78.6833	559.32
2621	35.5347	82.8397	1488.3
2621	35.5347	82.8397	1347.95
2621	35.5347	82.8397	1706.86
2621	35.5347	82.8397	1074.15
2621	35.5347	82.8397	1777.19
2824	35.3311	77.4786	1917.47
2611	35.8628	76.7831	505.88
2611	35.8628	76.7831	1599.22
2611	35.8628	76.7831	624

3296	35.9583	78.1333	594
4911	34.2814	77.985	2434.8
4911	34.2814	77.985	3083.4
4911	34.2814	77.985	14657.3
2819	34.3722	77.8611	617.68
2869	34.3136	77.9786	6203
2819	34.2728	77.9531	782.51
9711	34.6556	77.3208	769.18
4911	36.4817	79.0722	17844.4
4911	36.4817	79.0722	19964.4
4911	36.4817	79.0722	17090.2
4911	36.4817	79.0722	9991.2
4911	36.5292	78.8889	9671.5
4911	36.4364	78.9628	2654.3
4911	34.5997	78.9914	893.8
4911	34.5997	78.9914	1186.9
4911	34.5997	78.9914	2612.6
4911	34.5889	79.0053	1650.7
4911	36.4861	79.7244	1792.1
4911	36.4861	79.7244	1858.4
4911	36.4861	79.7244	4226.6
4911	35.7133	80.3767	918.5
4911	35.7133	80.3767	860.8
4911	35.7133	80.3767	996
4911	35.7133	80.3767	4706.2
4911	35.7133	80.3767	4567.6
2261	34.8394	79.3667	546
3334	35.4111	80.1178	1056
4911	36.2811	80.0603	40062.7
4911	36.2811	80.0603	38178.5
2621	35.2697	82.7006	611.49
2621	35.2697	82.7006	1055.15
4911	35.3819	78.0883	2130.3
4911	35.3819	78.0883	2156
4911	35.3819	78.0883	6801.3
8221	47.92	97.45	732.61
8221	47.92	97.45	1413.92

8221	47.92	97.45	2076.14
4911	47.3789	101.1572	22983.5
4911	47.3789	101.1572	28885.4
4911	47.2833	101.4	12983.7
4911	47.2833	101.4	24151.7
4911	47.2867	101.3317	6457
4911	47.2867	101.3317	1357.7
4911	47.37	101.8353	8300.1
4911	47.37	101.8353	6590.3
4911	47.2217	101.8139	17913.6
1311	47.2148	101.5008	17640.06
1311	47.2148	101.5008	15287.81
1311	47.2148	101.5008	12480.68
1311	47.2148	101.5008	1206.7
4911	46.8669	100.8839	2065.7
4911	47.0664	101.2139	21229
4911	47.0664	101.2139	24273.1
2063	48.77	97.54	8936.93
2063	47.2505	97.0406	2231.25
2063	47.2505	97.0406	585.62
4911	38.6364	83.7422	22909.7
4911	38.6364	83.7422	28054
4911	38.6364	83.7422	25956.8
4911	38.6364	83.7422	22226.2
4911	38.6903	83.4803	30514.7
4911	41.9083	80.7667	6935
4911	41.9083	80.7667	7472.6
4911	41.9083	80.7667	41910.1
4911	41.9083	80.7667	5872.8
4911	41.9083	80.7667	5128.7
8221	39.3258	82.1092	540.62
4911	40.5417	84.3892	1099.76
4911	39.9133	80.76	926.9
4911	39.9133	80.76	935.7
4911	39.9133	80.76	33460.7
4911	39.9133	80.76	27233.8
1222	39.9106	80.9858	1105.49

3312	39.4853	84.3875	6178.01
3312	39.4853	84.3875	6178.01
3312	39.4853	84.3875	6178.01
3312	39.4853	84.3875	6178.01
3312	39.4853	84.3875	1457
3312	39.4853	84.3875	1095.6
2671	39.4081	84.5622	530.47
2671	39.4081	84.5622	1678.73
4911	39.4103	84.5539	746.8
4911	39.4103	84.5539	1449.2
3312	39.4275	84.5358	1142.05
3312	39.4275	84.5358	1142.05
3312	39.4275	84.5358	1142.05
3312	39.4275	84.5358	1142.05
3312	39.4275	84.5358	1142.05
3312	39.4275	84.5358	1142.05
4911	38.9903	84.2969	3608.4
4911	38.9903	84.2969	4360.4
4911	38.9903	84.2969	1617.7
4911	38.9903	84.2969	5620.4
4911	38.9903	84.2969	22761.3
4911	38.9903	84.2969	40040.7
4911	38.8692	84.23	29348.3
4911	40.1842	81.8811	11950.4
4911	40.1842	81.8811	13313.1
4911	40.1842	81.8811	12793.5
4911	40.1842	81.8811	58778.2
4911	40.1842	81.8811	13399.2
4911	40.1842	81.8811	14949.9
3312	41.4683	81.675	3376.12
3312	41.4683	81.675	3103.77
3312	41.4683	81.675	2765.59
3312	41.4683	81.675	3732.47
3312	41.4683	81.675	710.79
3312	41.4683	81.675	965.87
4961	41.4969	81.69	2008.8
4961	41.4969	81.69	1621.92

4961	41.4969	81.69	3450.19
4961	41.4969	81.69	4377.7
3312	41.4675	81.6725	4994.97
3312	41.4675	81.6725	4231.73
3312	41.4675	81.6725	6814.58
3312	41.4675	81.6725	7463.08
3312	41.4675	81.6725	6816.05
3312	41.4675	81.6725	10906.71
3312	41.4675	81.6725	9889.38
3312	41.4675	81.6725	1895.13
3312	41.4675	81.6725	729.82
8082	41.5064	81.605	1842.11
8082	41.5064	81.605	2021.95
3711	41.4061	81.8289	866.97
3711	41.4061	81.8289	949.68
3711	41.4061	81.8289	2709.98
3711	41.4061	81.8289	1777.56
3711	41.4061	81.8289	1206.6
4911	41.5333	81.6375	1433.3
2631	39.8486	82.605	1690.73
4911	38.9161	82.1281	24899.1
4911	38.9161	82.1281	25155.2
4911	38.9161	82.1281	24269.5
4911	38.9161	82.1281	23030.6
4911	38.9161	82.1281	26245
4911	38.9358	82.1164	28369.7
4911	38.9358	82.1164	40672
2899	39.1781	84.5031	1187
2631	39.2228	84.4561	540.43
4911	39.1668	84.5398	555.1
4911	39.1668	84.5398	555.1
4911	39.1668	84.5398	13311.2
4911	39.1668	84.5398	38984.8
4911	39.1668	84.5398	15916
2819	39.1175	84.8117	2051
2841	39.1736	84.5067	1345.9
2068	41.3972	84.1042	1144.72

2068	41.3972	84.1042	965.34
2041	41.2867	82.815	1042.22
2075	41.2853	82.815	1008.73
4911	40.2522	80.6486	76137.7
4911	40.2522	80.6486	28211.6
4911	40.2522	80.6486	21463.1
3312	40.3206	80.6044	2630.71
3312	40.3206	80.6044	2637.36
3312	40.3206	80.6044	2193.51
3312	40.3206	80.6044	2732.57
3312	40.3206	80.6044	1451.32
3312	40.3206	80.6044	2322.45
3312	40.3206	80.6044	2136.75
3312	40.3206	80.6044	1978.48
3312	40.3206	80.6044	1900.87
3312	40.3206	80.6044	2730.13
3312	40.3519	80.615	1177.18
3312	40.3519	80.615	2224.08
3312	40.3519	80.615	2413.71
3312	40.3519	80.615	3116.31
3312	40.3519	80.615	2883.77
4911	40.5328	80.6331	8847
4911	40.5328	80.6331	9245
4911	40.5328	80.6331	9658.3
4911	40.5328	80.6331	8987.3
4911	40.5328	80.6331	12246.8
4911	40.5328	80.6331	30443.9
4911	40.5328	80.6331	27965.5
4911	41.7239	81.2522	1927.3
4911	41.7239	81.2522	2181.05
4911	41.71	81.24	13095.2
4911	41.71	81.24	13779.3
4911	41.71	81.24	10599
4911	41.71	81.24	22537.9
4911	41.71	81.24	60719.2
2869	38.4297	82.5925	1860
2869	38.4297	82.5925	1860

2869	38.4297	82.5925	1860
4911	41.5042	82.05	3668.4
4911	41.5042	82.05	27863.1
4911	41.5042	82.05	1231.2
3312	41.4517	82.1169	2418.23
3312	41.4517	82.1169	2703.24
3312	41.4517	82.1169	501.13
3312	41.4517	82.1169	13482.98
3312	41.4517	82.1169	5263.97
3312	41.4517	82.1169	5300.55
3312	41.4517	82.1169	4755.72
2911	41.6308	83.5017	2239
2911	41.6308	83.5017	1099
2911	41.6308	83.5017	554
4911	41.6925	83.4375	5943
4911	41.6925	83.4375	5115.4
4911	41.6925	83.4375	5857.1
4911	41.6925	83.4375	8109.5
2911	41.6797	83.4533	1660
4961	41.1056	80.6569	564.36
4911	40.1328	84.2347	793.04
4911	40.1328	84.2347	743.53
4961	39.7522	84.1964	651.7
2672	39.6722	84.2381	656.28
2672	39.6722	84.2381	867.75
2621	39.6697	84.2558	653.85
4911	39.6	84.2833	670.1
4911	39.6	84.2833	787.6
4911	39.6	84.2833	775.9
4911	39.6	84.2833	697.2
3241	39.8544	82.1106	2578.23
3275	41.4931	82.8747	1025.65
3241	41.1811	84.6047	515.21
3241	41.1811	84.6047	2666.23
4911	39.7933	83.0097	15070.8
8063	39.7983	83.1597	728.28
2621	39.5967	82.9542	3231.99

3299	39.0136	82.9981	1321.9
3299	39.0136	82.9981	1256.35
3299	39.0136	82.9981	1321.9
8221	41.1514	81.3481	856.48
4911	40.8836	82.6567	2017.72
4911	40.8836	82.6567	1606.17
2621	39.325	82.9744	8975.73
2621	39.325	82.9744	10789.42
2621	39.325	82.9744	14369.23
3312	38.7539	82.9253	834.19
3312	38.7539	82.9253	761
2911	40.7722	81.5356	630
2899	41.0431	81.5425	501.53
2899	41.0431	81.5425	501.53
2899	41.0431	81.5425	501.53
2899	41.0431	81.5425	501.53
2822	41.0469	81.5425	752.12
3011	41.0589	81.4797	554.19
3011	41.0589	81.4797	3525.8
3011	41.0589	81.4797	3578.35
4911	41.1656	80.7472	7110.1
4911	41.1656	80.7472	15374.5
3312	41.32	80.76	1440
4911	40.5164	81.4672	1746.14
2869	40.5078	81.4769	864.71
2869	40.5078	81.4769	1597.68
1241	40.4489	81.4989	1250
4911	39.5908	81.6797	35605.1
4911	39.5908	81.6797	39795.1
4911	39.5908	81.6797	43383.3
4911	39.5908	81.6797	41585
4911	39.5908	81.6797	20223.2
2822	39.2817	81.6378	1303
2822	39.2817	81.6378	1303
2895	39.3025	81.5706	569
4911	39.3672	81.5208	23189.2
4911	39.3672	81.5208	20687.9

4911	39.3672	81.5208	23955.5
4911	39.3672	81.5208	20860.1
4911	40.8481	81.7639	743.93
4911	40.8481	81.7639	5253.41
4911	40.8481	81.7639	6460.63
2631	40.9692	81.7761	3442.69
2631	40.9692	81.7761	3442.69
2631	40.9692	81.7761	3442.69
2899	40.9672	81.7725	2363.05
2899	40.9672	81.7725	2363.65
8221	41.3764	83.6439	710.92
2911	34.2023	97.1115	897
4911	34.0147	95.3175	11234.5
2999	36.5186	97.8375	1583.6
2999	36.5186	97.8375	1521.33
2999	36.5186	97.8375	1125.07
2911	34.6315	97.1682	1240.16
2911	36.689	97.0885	1068.17
2911	36.689	97.0885	1421.72
2895	36.666	97.0699	1287.35
2631	33.9986	95.1098	1004.7
2631	33.9986	95.1098	972.3
2631	33.9986	95.1098	518.3
4911	36.1889	95.2892	12352.7
4911	36.1889	95.2892	5222.7
3241	36.2714	95.2223	566.75
2621	35.7729	95.301	813.49
2621	35.7729	95.301	995.16
2621	35.7729	95.301	961.76
4911	35.7675	95.2953	12759.2
4911	35.7675	95.2953	12013.6
4911	35.7675	95.2953	11930.9
4911	36.4544	97.05	8220.7
4911	36.4544	97.05	13015.9
4911	36.4322	95.6983	729.5
4911	36.4322	95.6983	9047.9
4911	36.4322	95.6983	9276.3

3241	36.1928	95.8125	855.05
3241	36.1928	95.8125	885.65
1321	34.4612	97.6891	576.7
2911	36.12	96.0004	950.06
2911	36.12	96.0004	1488.89
2911	36.12	96.0004	592.02
2911	36.142	96.0129	1139.09
2911	36.142	96.0129	609.43
2631	43.438	124.238	687.39
4911	45.4178	119.4817	5506.8
4922	45.46	119.5749	1514.66
4922	45.46	119.5749	1287.88
2611	45.288	122.96	617.86
4911	40.5367	79.7919	39980
3241	40.4919	80.0761	559.5
3312	40.4931	80.0772	1009.24
3312	40.4931	80.0772	1034.65
4911	40.9292	79.4669	16495.6
4911	40.9292	79.4669	15653.5
4911	40.6522	79.3425	91214.1
4911	40.6522	79.3425	77396.2
4911	40.6342	80.4144	5831.1
4911	40.6342	80.4144	8159.2
4911	40.6342	80.4144	10891.5
3339	40.67	80.3363	1193.1
3339	40.67	80.3363	1401
4911	40.653	80.3552	840.95
4911	40.653	80.3552	752.52
4911	40.653	80.3552	808.41
3241	40.473	75.8977	642.12
3241	40.473	75.8977	738.51
4911	40.3058	75.9083	5481.4
4911	40.3058	75.9083	5475.1
4911	40.3058	75.9083	5006.1
2621	40.678	78.2347	1279.54
2621	40.337	78.4052	820.83
3312	40.15	74.75	1003.6

2911	41.019	79.7166	541.2
2911	41.019	79.7166	520.2
3241	40.795	79.6997	723.26
3241	40.795	79.6997	1317.94
3241	40.795	79.6997	748.84
3241	40.795	79.6997	1383.74
2865	41.019	79.7166	1162.6
3274	40.894	77.7125	579.43
3274	40.894	77.7125	596.39
3274	40.894	77.7125	641.52
4911	40.1514	75.5306	4436.1
4911	40.1514	75.5306	1152
4911	41.0681	78.3661	10587.2
4911	41.0681	78.3661	13474.2
4911	41.0681	78.3661	16946.8
4911	41.0681	78.3661	12937.2
2621	41.124	77.4538	2702.64
2621	41.124	77.4538	2700.73
4911	39.8489	75.325	3585
4911	39.8489	75.325	3911.7
4911	39.8489	75.325	518.3
2911	39.812	75.4147	3504.9
2911	39.825	75.4055	4030.5
2911	39.825	75.4055	797.3
3996	39.825	75.4161	2076
2621	41.488	78.6761	1823.92
2621	41.488	78.6761	1917.48
2621	42.146	80.0561	1414.5
2621	42.146	80.0561	1325.24
2621	42.146	80.0561	950.06
3743	42.146	80.0258	1178.1
3743	42.146	80.0258	3223.1
3743	42.146	80.0258	2067.3
3743	42.146	80.0258	2067.3
3312	42.143	80.0705	577.1
3295	39.794	80.1625	674.32
4911	39.85	79.9167	52889.9

4911	39.85	79.9167	55847.1
4911	39.85	79.9167	44675.6
4911	40.3842	79.0611	3376.1
4911	40.3842	79.0611	3732.2
4911	40.4069	79.0333	1906.1
4911	40.4069	79.0333	2467.5
4911	40.4069	79.0333	14157.1
4911	40.5142	79.1969	47973.5
4911	40.5142	79.1969	61209
4911	40.5142	79.1969	25018.2
3295	40.519	79.1997	606.82
3295	40.519	79.1997	507.12
4911	39.8272	76.3308	12817.95
4911	40.9375	80.3681	6702.9
4911	40.9375	80.3681	5923.8
4911	40.9375	80.3681	9209
3241	40.9742	80.49	1781.9
3241	40.9742	80.49	2211.3
4911	41.201	76.0719	2413.1
2911	41.967	78.643	913.2
4911	41.07	76.6664	59750.7
4911	41.07	76.6664	48453.7
4911	40.7961	75.1078	14046.3
4911	40.7961	75.1078	10554.3
4911	40.7961	75.1078	2441.7
4911	40.7961	75.1078	3015.6
4911	40.755	75.0839	11963.4
4911	40.755	75.0839	13819.6
3241	40.717	75.4025	1814.23
3241	40.729	75.3008	3911.71
3241	40.729	75.3008	726.57
3312	40.614	75.363	559.4
3312	40.614	75.363	1507.9
3241	40.736	75.315	684.15
3241	40.736	75.315	668.3
3241	40.736	75.315	877.63
3241	40.736	75.315	913.33

2911	39.9244	75.2072	1574.9
2911	39.9244	75.2072	881.24
2911	39.9244	75.2072	816
4911	40.8375	76.8253	6673.9
4911	40.8375	76.8253	5820.8
4911	40.8375	76.8253	6179.1
4911	40.8375	76.8253	6173.2
4911	40.8375	76.8253	9511.2
4911	40.8375	76.8253	10939
2911	41.83	79.1238	645.2
2911	41.83	79.1238	1545.7
4911	41.8358	79.19	1560.12
4911	41.8358	79.19	884.29
4911	41.8358	79.19	1497.12
4911	41.8358	79.19	1587.32
4911	40.2167	79.9667	727.5
4911	40.25	79.9167	928.4
4911	40.25	79.9167	869.5
4911	40.25	79.9167	912.5
4911	40.25	79.9167	1964.6
3312	40.161	79.8986	744.3
3312	40.161	79.8986	975
2611	41.571	76.0436	1009.22
2611	41.571	76.0436	613.57
3274	39.94	76.8141	650.95
3274	39.94	76.8141	1277.92
3274	39.94	76.8141	739.72
2621	39.87	76.8661	627.99
2621	39.87	76.8661	2918.58
2621	39.87	76.8661	1805.53
4911	40.0969	76.6964	22672.1
4911	40.0969	76.6964	25098.5
4911	40.0969	76.6964	44831.5
3241	39.948	76.7686	685.15
4911	33.4339	81.9114	2709.5
4911	33.4339	81.9114	2508.7
4911	33.4339	81.9114	5525

4911	34.6858	82.4683	2353.1
4911	34.6858	82.4683	2512
4911	34.6858	82.4683	5388.2
4911	33.2422	79.9875	7353.8
4911	33.2422	79.9875	8302.8
4911	33.0158	79.9297	24349.5
2821	33.0578	79.9447	595.61
3334	33.0478	80.0533	734.33
3334	33.0478	80.0533	734.33
3334	33.0478	80.0533	734.33
4911	33.3694	80.1119	4592.2
4911	33.3694	80.1119	7699.4
2611	32.8994	79.9694	1054.64
2611	32.8994	79.9694	1839.9
2611	32.8994	79.9694	782.8
2611	32.8994	79.9694	531.99
2611	32.8994	79.9694	2694.5
4911	33.0753	80.6336	4351.6
4911	33.0753	80.6336	4461.6
4911	33.0753	80.6336	4416.1
4911	34.4	80.1667	13140.3
3241	33.2136	80.4486	686.29
3241	33.2136	80.4486	696.23
3241	33.2136	80.4486	683.77
3241	33.2136	80.4486	710.04
3241	33.2133	80.4483	1167.62
3624	33.0964	80.3089	688.54
2611	34.1822	79.7811	2975.09
2611	33.3642	79.2997	635.13
2611	33.3642	79.2997	635.13
2611	33.3642	79.2997	1021.16
2611	33.3642	79.2997	1297.75
4911	33.4953	79.3347	18081.8
4911	33.4953	79.3347	9224.2
4911	33.4953	79.3347	2324.4
4911	33.4953	79.3347	3246.9

4911	33.8253	79.0528	2275.8
4911	33.8253	79.0528	1920.6
2821	34.2267	80.6811	715.69
2821	34.2267	80.6811	724.13
2821	34.2267	80.6811	749.31
2821	34.2267	80.6811	1072.39
4911	34.0556	81.2172	6475.6
4911	34.0556	81.2172	8662.1
2824	33.8667	81.25	790.24
2824	33.8667	81.25	657.79
2824	33.8667	81.25	963.16
3241	33.3261	80.4144	1447.58
3241	33.3261	80.4144	2737.34
4911	33.3639	81.0303	9887.3
4911	33.8264	80.6228	19869
4911	33.8264	80.6228	19663.5
2621	33.8794	80.6969	2002.88
2621	33.8794	80.6969	672.64
2611	35.0103	81.1794	848.06
2611	35.0103	81.1794	778.4
2611	35.0103	81.1794	831.61
2823	34.9406	81.0292	898.73
2823	34.9406	81.0292	898.73
2823	34.9406	81.0292	898.73
2823	34.9406	81.0292	1198.38
2823	34.9406	81.0292	1198.38
2823	34.9406	81.0292	1593.72
4911	45.3047	96.5083	14033.6
4911	44.0872	103.2614	766.61
3241	44.09	103.27	534.64
4911	36.0208	84.1569	45415.1
3499	35.9806	84.2839	3200
3499	35.9806	84.2839	3200
3499	35.9806	84.2839	3200
3499	35.9806	84.2839	3200
3334	35.6686	83.9486	681
3334	35.6686	83.9486	682

2262	36.3511	82.2447	800.66
2262	36.3511	82.2447	800.66
3341	35.0453	89.5753	790
2824	36.1517	83.2075	682
2824	36.1517	83.2075	682
2824	36.1517	83.2075	682
2824	36.1517	83.2075	682
2824	36.1517	83.2075	682
2824	36.1517	83.2075	682
2824	36.1517	83.2075	1012
2824	36.1517	83.2075	1012
1311	35.0844	85.2703	1292.48
2631	35.0272	85.3042	514.91
2281	35.1131	85.2433	687.07
4953	35.0958	85.1592	550.43
2621	35.0456	88.2631	3389.13
4911	36.3767	82.9642	18778.9
4911	36.3767	82.9642	18471.9
4911	36.3767	82.9642	19090.2
4911	36.3767	82.9642	18681.3
9711	36.5294	82.6131	527
2816	36.0453	87.9814	2641
2816	36.0453	87.9814	2641
2816	36.0453	87.9814	2641
2816	36.0453	87.9814	2641
4911	36.0278	87.9867	27700.18
4911	36.0278	87.9867	12636
4911	36.0278	87.9867	14087
4911	36.0278	87.9867	12402.3
4911	36.0278	87.9867	13230.5
4911	36.0278	87.9867	12685.9
4911	36.0278	87.9867	8357.3
4911	36.0278	87.9867	12135.9
4911	36.0278	87.9867	14695.4
4911	36.0278	87.9867	14990.3
4911	36.0278	87.9867	11145.9
3089	35.7428	84.3294	798
2046	35.7344	84.3231	849.5

2046	35.7344	84.3231	849.5
2621	35.2961	84.7556	751.98
2621	35.2961	84.7556	2019.81
2621	35.2961	84.7556	2019.82
2621	35.2961	84.7556	2019.82
2819	35.5161	87.2339	817
2819	35.6136	87.0508	504
3339	36.5153	87.4042	511
3339	36.5153	87.4042	967
3011	36.4494	89.0608	691
3331	34.9983	84.3836	666
4911	35.8989	84.5203	10289.7
4911	35.8989	84.5203	10637.8
4911	35.8989	84.5203	10289.1
4911	35.8989	84.5203	10720.6
4911	35.8989	84.5203	12874.2
4911	35.8989	84.5203	11676
4911	35.8989	84.5203	12252.3
4911	35.8989	84.5203	12647.3
4911	35.8989	84.5203	13801.2
4911	35.0742	90.1492	5434.3
4911	35.0742	90.1492	6502.7
4911	35.0742	90.1492	8394.5
4911	36.3944	87.6544	9523.7
4911	36.3944	87.6544	13251.5
2819	36.5063	82.2538	512
2819	36.5063	82.2538	512
2819	36.5063	82.2538	27251.25
2819	36.5063	82.2538	872
2819	36.5063	82.2538	872
2819	36.5063	82.2538	2556
2819	36.5063	82.2538	2556
2819	36.5063	82.2538	2556
2819	36.5063	82.2538	2556
2892	36.5286	82.5525	868
2892	36.5286	82.5525	868

2892	36.5286	82.5525	868
2892	36.5286	82.5525	868
2621	36.5456	82.5731	820.57
2621	36.5456	82.5731	1909.19
8211	36.5414	82.5339	531.3
4911	36.3153	86.4006	26020.4
4911	36.3153	86.4006	29342.1
4911	36.3153	86.4006	28071.1
4911	36.3153	86.4006	33232.1
1422	36.1994	83.7169	4019
3274	36.2117	83.7342	828.33
3341	35.7997	86.6669	626
2819	32.5208	102.2083	1118.28
1321	28.9	98.53	582.21
1311	28.9	98.53	2530.19
4911	28.7094	98.4722	21113.1
1321	28.6219	97.9919	1019.14
3241	29.5483	98.4219	1384.61
4911	29.3081	98.3261	10881.3
4911	29.3081	98.3261	11149.3
4911	29.3064	98.3203	4024.3
2911	29.08	95.7461	6670.3
2911	29.08	95.7461	1222
3341	28.9578	95.3381	775.68
3341	28.9578	95.3381	775.68
1321	29.7303	97.7283	1139.71
2999	28.515	96.7942	623.4
1321	33.2258	94.4581	1127.61
1321	31.5017	102.6403	3205.89
1321	31.5017	102.6403	2017.89
1321	31.5017	102.6403	1579.02
4922	31.4933	102.6417	1119.87
1321	31.0833	100.95	819.54
1321	32.0869	102.2875	669.12
2911	31.8164	102.3347	577.4
3241	32.5214	97.0047	1093.1
3241	32.5214	97.0047	819.1

3241	32.5214	97.0047	1221.4
3241	32.4561	97.0211	1071.7
3241	32.4561	97.0211	1919.1
3241	32.4561	97.0211	1217.8
3241	32.4561	97.0211	900.8
3241	32.5144	96.9711	5864.09
3331	31.7767	106.5186	4425.09
3331	31.7767	106.5186	2170.98
4911	29.9172	96.7506	11863.1
4911	29.9172	96.7506	14111.1
4911	29.9172	96.7506	1622.6
4911	29.54	95.78	24564
4911	29.54	95.78	25255.3
4911	29.54	95.78	13653.4
4911	29.54	95.78	3841.6
4911	31.8222	96.055	37850.7
4911	31.8222	96.055	40514.2
1311	31.72	96.15	2656
1321	32.7614	102.7997	512.85
2911	29.3744	94.925	652.9
2911	29.3744	94.925	4722.82
2911	29.3761	94.9081	806.83
2911	29.3692	94.9111	871.78
2911	29.3692	94.9111	516.19
4911	28.7119	97.2144	17433.4
2869	35.4822	101.0533	2425.68
2869	35.4822	101.0533	2680.17
1321	32.5367	94.83	723.53
4911	30.6161	96.0783	13484.7
1321	36.4919	101.4681	720.15
2869	29.5103	95.0647	628.52
2869	29.5103	95.0647	617.76
2911	29.8333	95.4436	798.5
2869	29.8222	94.9217	678.3
2895	29.8111	94.9133	771.86
2869	29.73	95.1028	914
2819	29.87	95.4	3785

2819	29.87	95.4	6298
2911	29.7222	95.1269	3551.15
2911	29.7222	95.1269	630.64
2911	29.7125	95.2358	526.49
2911	29.7233	95.2531	502.87
2911	29.7233	95.2531	3036.6
2869	29.7597	95.1758	602.8
2869	29.7597	95.1758	1064.25
4911	29.7192	95.2278	4936.66
4911	32.58	94.38	32390.6
1321	32.9956	95.4956	1627.02
2911	32.2739	101.4186	1376.5
2911	32.2739	101.4186	1852.11
2895	32.2706	101.4217	851.4
2895	32.2706	101.4217	548.68
2895	32.2706	101.4217	733
2895	35.6681	101.4328	3750.9
2895	35.6653	101.4375	1532.66
2895	35.6653	101.4375	4449.65
2869	35.7017	101.3608	602
1321	36.0556	101.0875	1072.6
2911	35.7239	101.3608	3310
2911	35.7239	101.3608	3897
2911	29.8683	93.9683	5347.58
2911	29.8683	93.9683	899.42
2819	30.0414	94.0714	834.8
2911	30.0639	94.0703	12558.33
2911	29.8833	93.9583	5163.7
2999	29.8347	93.9625	3119.14
2999	29.8347	93.9625	2447.87
4911	34.1814	102.5747	12790.5
4911	34.1814	102.5747	12121.1
1311	31.3511	96.2328	1295.82
4911	31.4242	96.2536	20418.2
4911	31.4242	96.2536	15835.5
2819	28.4094	98.5294	1946.32
1321	31.9256	101.825	572.9

3334	30.5658	97.0697	16504
3334	30.5658	97.0697	16781
3334	30.5658	97.0697	17706
4911	30.5678	97.0711	28590.5
2895	35.9825	101.8936	1195.52
2895	35.9825	101.8936	813.15
1311	35.8275	101.6308	5835.85
2911	35.9553	101.8781	890.02
2911	35.9553	101.8781	1008.45
3295	31.9133	96.3481	633.5
2911	27.8111	97.425	547.9
2911	27.8128	97.44	1681.4
2911	27.8128	97.44	1384.87
2911	27.8128	97.44	2095.96
2911	27.8128	97.44	716.87
2895	30.1525	93.7206	702.72
2895	30.1525	93.7206	702.72
1321	31.0542	102.6856	1220.38
1321	31.0542	102.6856	748.24
4911	35.2983	101.7481	11570
4911	35.2983	101.7481	10992.5
4911	35.2983	101.7481	11433.3
1321	31.6528	101.275	1385.83
1311	31.5372	103.6086	3547.23
4922	31.2747	103.1061	523.29
4911	31.0931	96.6953	3966.2
4911	31.0931	96.6953	3478.6
4911	32.265	94.5669	36625.6
4911	32.265	94.5669	36296.6
4911	32.265	94.5669	35778.6
2911	32.4	95.28	616.88
4911	33.0964	95.0339	36060.2
4911	33.0964	95.0339	35154.9
4911	33.0964	95.0339	21285.1
4911	33.0578	94.8467	13145.7
4911	33.0578	94.8467	11391.1
4911	33.0578	94.8467	12617.3

1321	32.6931	95.8339	9230
1311	31.5258	103.4675	603.34
1321	31.6075	102.9944	2403
4911	34.08	99.24	10786.9
4911	39.7264	110.8639	2709.7
4911	39.7264	110.8639	3410.4
4911	39.557	110.38	877.6
4911	39.3792	111.075	2067.6
4911	39.3792	111.075	11015.9
4911	39.1667	111.0261	3100
4911	39.1667	111.0261	2991.4
4911	39.1667	111.0261	1975
3241	39.564	112.195	1365.91
4911	39.5108	112.5792	1981.4
4911	39.5108	112.5792	1777.4
3331	40.713	112.134	10441.92
3331	40.713	112.134	4380
3331	40.7	112.116	619.7
3331	40.7	112.116	579.9
1311	37.15	109.05	762.85
4911	40.0833	109.2833	995.1
3312	40.317	111.745	595.8
2611	37.7983	79.9936	2696.65
2611	37.7983	79.9936	1001.44
2611	37.7983	79.9936	1440.87
2611	37.7983	79.9936	3907.81
2611	37.7983	79.9936	861.99
2631	37.5108	78.9103	884.94
2631	37.5108	78.9103	877.02
2631	37.5108	78.9103	659.25
2824	38.06	78.8719	601.42
2824	38.06	78.8719	546.03
2824	38.06	78.8719	546.82
2631	37.5342	79.3578	1275.33
3241	37.4614	79.9947	1695.84
3241	37.4614	79.9947	1682.27
3312	37.2344	82.0372	1625.47

3312	37.2344	82.0372	3399.43
1221	37.1622	81.9867	874.97
4911	37.3819	77.3819	4017.4
4911	37.3819	77.3819	8313.4
4911	37.3819	77.3819	19297.8
4911	37.3819	77.3819	38377.6
2819	37.4175	77.4092	1067.55
2141	37.3442	77.2825	1126.4
2141	37.3442	77.2825	1669.23
4911	37.7092	78.2878	2044
4911	37.7092	78.2878	6498.6
4911	37.3697	80.8633	1063.7
4911	37.3697	80.8633	1261
4911	37.3697	80.8633	11307.5
2823	37.345	80.7628	1087.95
2823	37.345	80.7628	1346.14
2823	37.345	80.7628	1041.38
2823	37.345	80.7628	1315.64
2823	37.345	80.7628	1390.29
4911	36.8667	78.7	850.4
4911	36.8667	78.7	586.2
2621	37.8186	77.4358	503.79
2823	36.6636	79.8944	830.42
2823	36.6636	79.8944	758.42
2823	36.6636	79.8944	759.01
2621	36.6783	76.9125	4651.05
2621	36.6783	76.9125	6379.87
2621	36.6783	76.9125	642.14
2621	36.6783	76.9125	1135.22
2621	36.6783	76.9125	914.67
2621	36.6783	76.9125	1783.7
2621	36.6783	76.9125	1614.03
2621	36.6783	76.9125	968.08
2611	37.5392	76.8053	740.15
2611	37.5392	76.8053	6269.94
2611	37.5392	76.8053	891.7
2611	37.5392	76.8053	954.67

8221	37.2325	80.4217	677.37
2392	36.5708	79.4286	538.87
4911	38.5383	77.2808	3434.2
4911	38.5383	77.2808	8383.3
4911	36.9333	82.1997	8780.5
4911	36.9333	82.1997	8696.8
4911	36.9333	82.1997	7040
1221	36.9567	82.1817	688.48
3251	36.8917	81.3478	1384.72
3251	36.8917	81.3478	2136.64
4911	37.215	76.4606	8539.3
4911	37.215	76.4606	9657.6
4911	37.215	76.4606	2811.3
2911	37.2106	76.4539	1670.38
2911	37.2106	76.4539	1098.74
2911	37.2106	76.4539	1753.99
2911	37.2106	76.4539	3582.7
4911	38.8078	77.0372	998.7
4911	38.8078	77.0372	1240.5
4911	38.8078	77.0372	2171.4
4911	38.8078	77.0372	3171.9
4911	38.8078	77.0372	3006.8
4911	36.7714	76.3019	4430.1
4911	36.7714	76.3019	4463.4
4911	36.7714	76.3019	8840.6
4911	36.7714	76.3019	13155
2631	37.3011	77.2678	790.81
2631	37.3011	77.2678	1770.52
2869	37.3019	77.2722	1534.45
2869	37.3019	77.2722	618.54
3731	36.9986	76.4519	512.25
3731	36.9986	76.4519	633.65
2111	37.4694	77.4278	563.36
3334	47.3558	120.1267	3135
3334	45.6494	122.7344	2012
2631	46.1294	122.9561	914
4911	46.7	122.85	39196.9

4911	46.7	122.85	39074.7
3355	47.2603	122.3642	1721
2911	48.4661	122.5578	1576
2911	48.4661	122.5578	1289
2911	48.4661	122.5578	3132
2911	48.4969	122.5614	966
2911	48.4969	122.5614	918
3334	47.7539	117.3736	628
3334	47.7539	117.3736	5125
3339	48.3597	117.8506	1353.98
2621	46.1069	118.9175	585
2621	46.1069	118.9175	1310
3334	48.8419	122.7028	4503
4961	48.83	122.6881	1002
2911	48.9042	122.7272	833
3312	40.3436	80.6067	800.33
3312	40.3436	80.6067	787.95
4911	39.2014	79.2667	51812.4
4911	39.2014	79.2667	55398.5
4911	39.2014	79.2667	5095.7
3312	40.4211	80.5957	3231.55
3312	40.4211	80.5957	3129.45
4911	39.3833	80.3167	5550.9
4911	39.3833	80.3167	5433.5
4911	39.3833	80.3167	5484.6
3334	38.925	81.8269	715
3334	38.925	81.8269	2623.6
2869	38.3692	81.68	782.36
2869	38.3692	81.68	780
4911	38.2056	81.4211	6940.6
4911	38.2056	81.4211	6512.4
2879	38.3864	81.7797	1075
2879	38.3864	81.7797	1123
2879	38.3864	81.7797	1121
4911	39.5167	80.1167	1037
2812	39.7369	80.8414	3364.87
2812	39.7369	80.8414	1895.39

2812	39.7369	80.8414	6600.96
2812	39.7369	80.8414	744.6
4911	39.83	80.8153	30974.7
4911	39.83	80.8153	22177
4911	39.87	80.67	43190.8
4911	39.87	80.67	36469.1
4911	39.87	80.67	39708.8
2999	39.8369	80.8189	4109.72
2999	39.8369	80.8189	4196.9
2895	39.7992	80.8214	1046
4911	38.9669	81.9231	8771.8
4911	38.9669	81.9231	7472.3
4911	38.9669	81.9231	9601.2
4911	38.9669	81.9231	8958.6
4911	38.9669	81.9231	29938.3
3313	38.9569	81.9267	531.4
3313	38.9569	81.9267	568.6
4911	38.9794	81.935	37572.6
4911	39.7	79.9167	33683.8
4911	39.7	79.9167	37467.8
2869	39.3556	81.3064	885.36
4911	39.3669	81.3003	1872.3
4911	39.3669	81.3003	6738.6
4911	39.3678	81.2958	24020.7
4911	39.3678	81.2958	23474.7
2895	39.3375	81.3561	589.88
2895	39.3375	81.3561	2900.38
2895	39.3375	81.3561	1170.71
2895	39.3375	81.3561	1896.36
2895	39.3375	81.3561	559.68
2895	39.3375	81.3561	753.89
2895	39.3375	81.3561	870.36
4911	39.4883	79.6367	1448.7
4911	39.4883	79.6367	1962.3
4911	39.4883	79.6367	9246.4
4911	38.4739	81.8242	25210.6
4911	38.4739	81.8242	30734.2

4911	38.4739	81.8242	43995.7
2821	39.2694	81.67	795.1
2821	39.2694	81.67	1013.1
2821	39.2694	81.67	1623
2821	39.2694	81.67	2203.8
4911	44.5394	88.0042	599.1
4911	44.5394	88.0042	918.5
4911	44.5394	88.0042	1573.6
4911	44.5394	88.0042	2444.6
2631	44.5289	88.0042	735.35
2621	44.4931	88.0086	3529.73
2621	44.4931	88.0086	9879.4
2621	44.4931	88.0086	2273.35
4911	44.3078	91.905	1388.3
4911	44.3078	91.905	2082.5
4911	44.3022	91.9142	4145
4911	43.4833	89.4	23278.4
4911	43.4833	89.4	15347.4
4911	43.0792	89.3739	1685.1
4911	43.0792	89.3739	2172.7
8221	43.0711	89.405	550.18
2911	46.6917	92.0714	579.5
4911	42.87	90.7	1930.4
4911	42.87	90.7	1905.4
4911	42.5381	87.9033	19689.4
4911	42.5381	87.9033	19623.9
2631	45.4458	89.7378	1259.05
2631	45.4458	89.7378	1122.27
2631	45.4458	89.7378	4305.82
3274	44.1711	87.6981	563.52
4931	44.0814	87.6558	781.63
4931	44.0814	87.6558	641.28
4911	44.12	87.81	511.08
4911	44.8617	89.655	1105.7
4911	44.8617	89.655	2021.3
4911	44.8617	89.655	8536.1
2621	45.0256	89.6528	604.35

2621	44.7894	89.695	999.24
2621	45.105	87.6508	521.91
2621	45.0533	87.7467	656.28
2621	45.0533	87.7467	1058.14
2621	45.0533	87.7467	1637.88
2621	45.775	87.9903	567.03
2621	45.775	87.9903	538.34
2621	45.775	87.9903	1106.56
2621	45.775	87.9903	678.56
4911	42.8014	87.8314	8149.2
4911	42.8014	87.8314	5393.4
4911	42.8014	87.8314	10363.8
4911	42.8014	87.8314	10354
4911	43.0303	87.925	4320.3
4911	43.0303	87.925	4479
4911	43.0303	87.925	4166.2
4911	43.0303	87.925	3585.2
2621	45.6389	89.4275	2956.17
2621	44.2753	88.3283	815.5
2621	44.2753	88.3283	1034.19
2621	44.2753	88.3283	1138.48
2621	44.2825	88.2533	1430.05
2621	44.2825	88.2533	5337.45
2621	44.2722	88.3006	851.01
4911	43.3908	87.8686	1809.7
4911	43.3908	87.8686	2227.3
4911	43.3908	87.8686	3142.2
4911	43.3908	87.8686	1990.6
2951	44.73	92.43	2941.34
4911	42.5808	89.0356	1337.1
4911	42.5808	89.0356	1389.3
4911	43.7156	87.705	1481.7
4911	43.7156	87.705	7378
4911	43.7156	87.705	10071.2
4911	43.5592	91.2333	11420
3321	44.3631	89.0856	502.91
3714	44.0267	88.5547	1222.02

3713	44.0686	88.6447	945.25
2621	44.4281	89.7878	5145.5
2621	44.3364	89.8586	577.41
2621	44.3364	89.8586	615.04
2621	44.3364	89.8586	1586.08
2621	44.3364	89.8586	1221.85
2621	44.3139	89.8964	818.69
2621	44.3139	89.8964	924.25
2621	44.3139	89.8964	3042.29
1311	44.5834	107.8828	807.4
4911	44.25	105.54	841.49
4911	44.2833	105.4	10012.1
4911	44.2477	105.5462	710.11
2911	41.763	107.111	1681.13
2911	41.763	107.111	731.8
2911	41.763	107.111	588
4911	42.8333	105.7667	5421.4
4911	42.8333	105.7667	5607.1
4911	42.8333	105.7667	8802.2
4911	42.8333	105.7667	10178.9
2819	43.018	108.392	534
2819	43.018	108.392	575.1
1311	42.941	108.342	2999
1311	43.273	107.6	4095.7
1311	43.7697	108.4535	558.5
2911	41.128	104.786	1109
2999	41.727	110.581	992.8
4911	41.7572	110.5986	7146.4
4911	41.7572	110.5986	7555.9
4911	41.7572	110.5986	6398
1311	41.884	110.087	736.5
2911	42.858	106.241	548
2911	42.858	106.241	564
1311	44.529	108.854	1217.7
4911	42.1086	104.8711	3793.7
4911	42.1086	104.8711	2812.5
4911	42.1086	104.8711	3775.9

1474	41.593	109.753	2153.8
1474	41.593	109.753	3433.1
3312	41.524	109.22	868.03
2874	41.538	109.127	1210.26
2812	41.62	109.803	2361.5
2812	41.62	109.803	2894.4
4911	41.75	108.8	6272.2
4911	41.75	108.8	7165.2
4911	41.75	108.8	6180.3
4911	41.75	108.8	4868.5
1311	41.454	110.889	13295
4911	43.84	104.56	972.2
4911	43.84	104.56	1079.26
4911	43.84	104.56	1042.07

Figure 1 - 5-Minute SO₂ Monitors in the Continental US

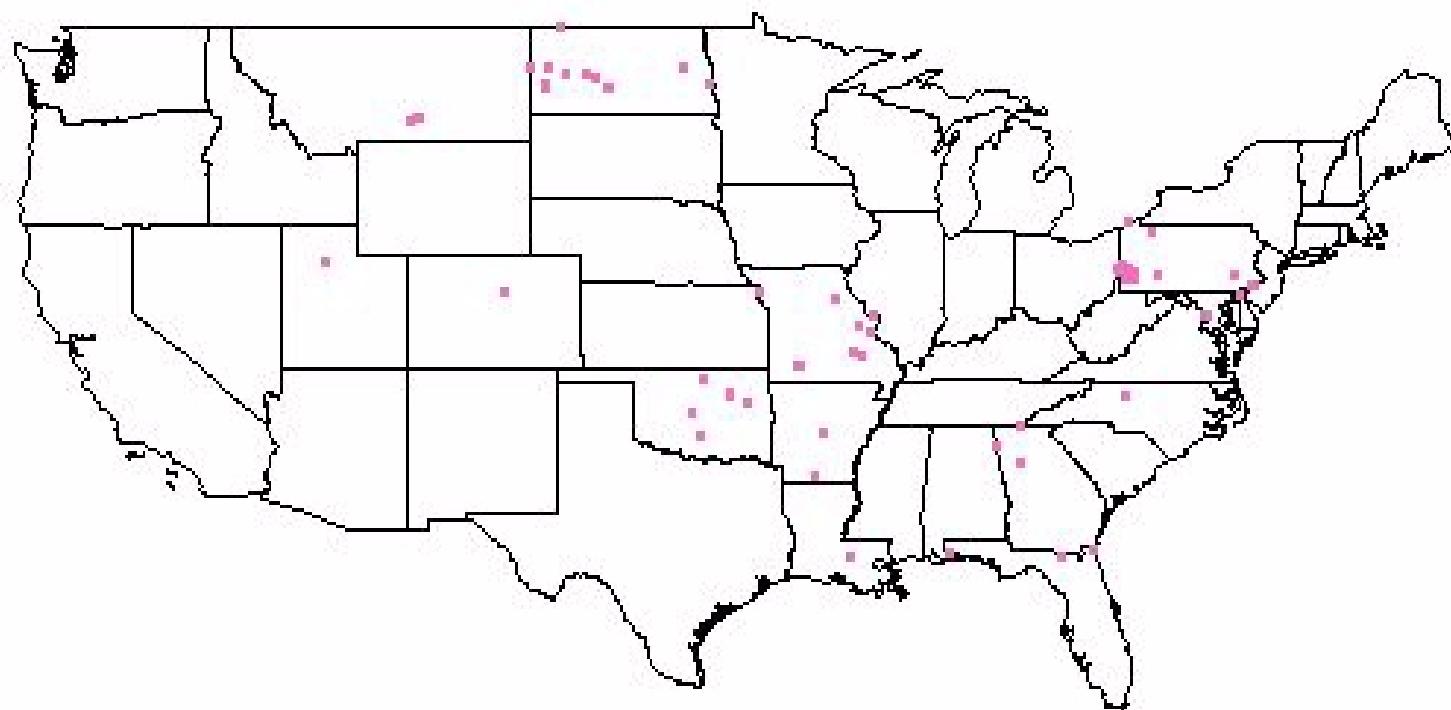
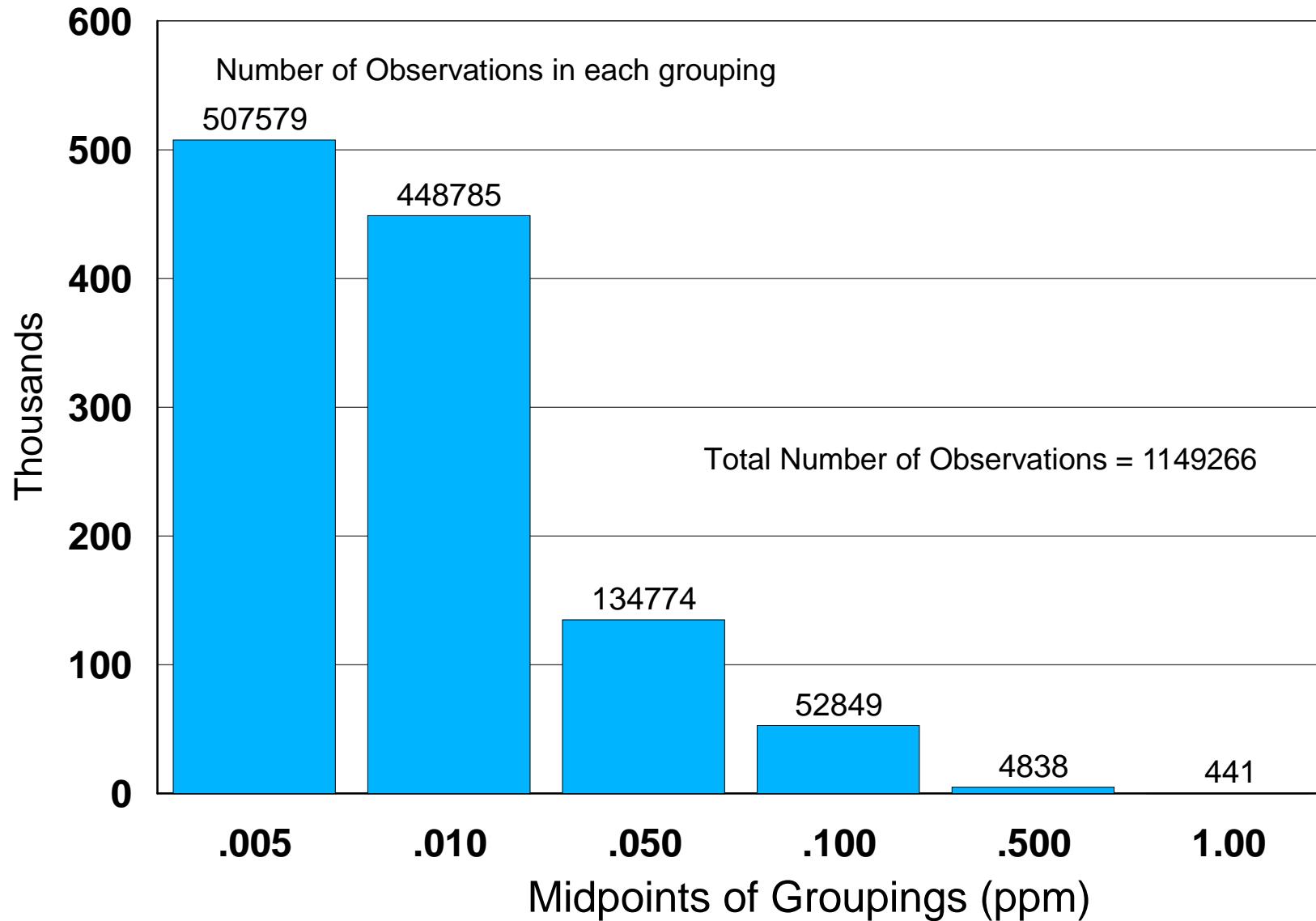


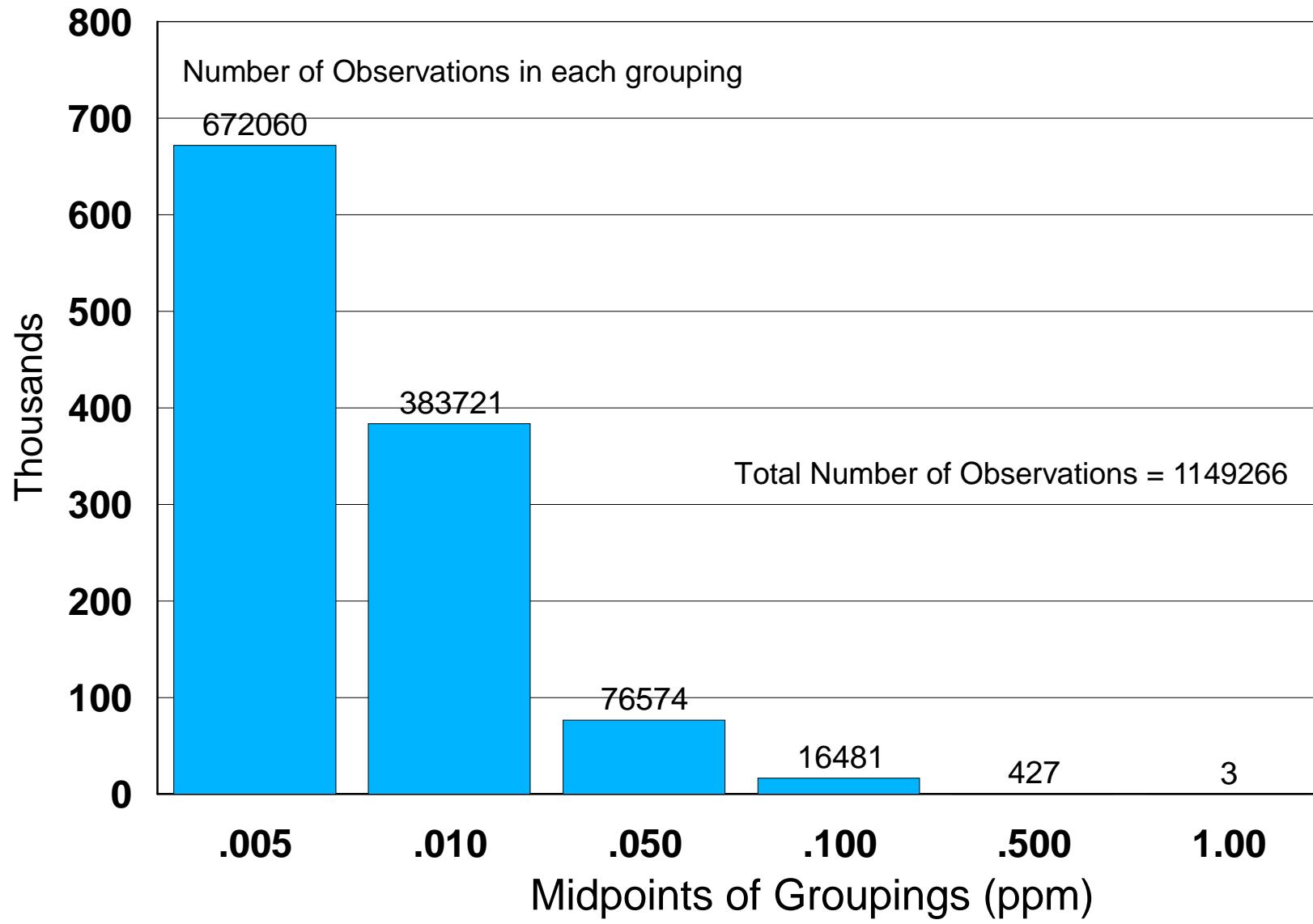
Figure 2 - Distribution of 5-Minute Peak SO₂ Data



(for ratios such that $1 < \text{Ratio} \leq 12$)

Figure 3 - Distribution of 1-Hour Mean SO₂ Data

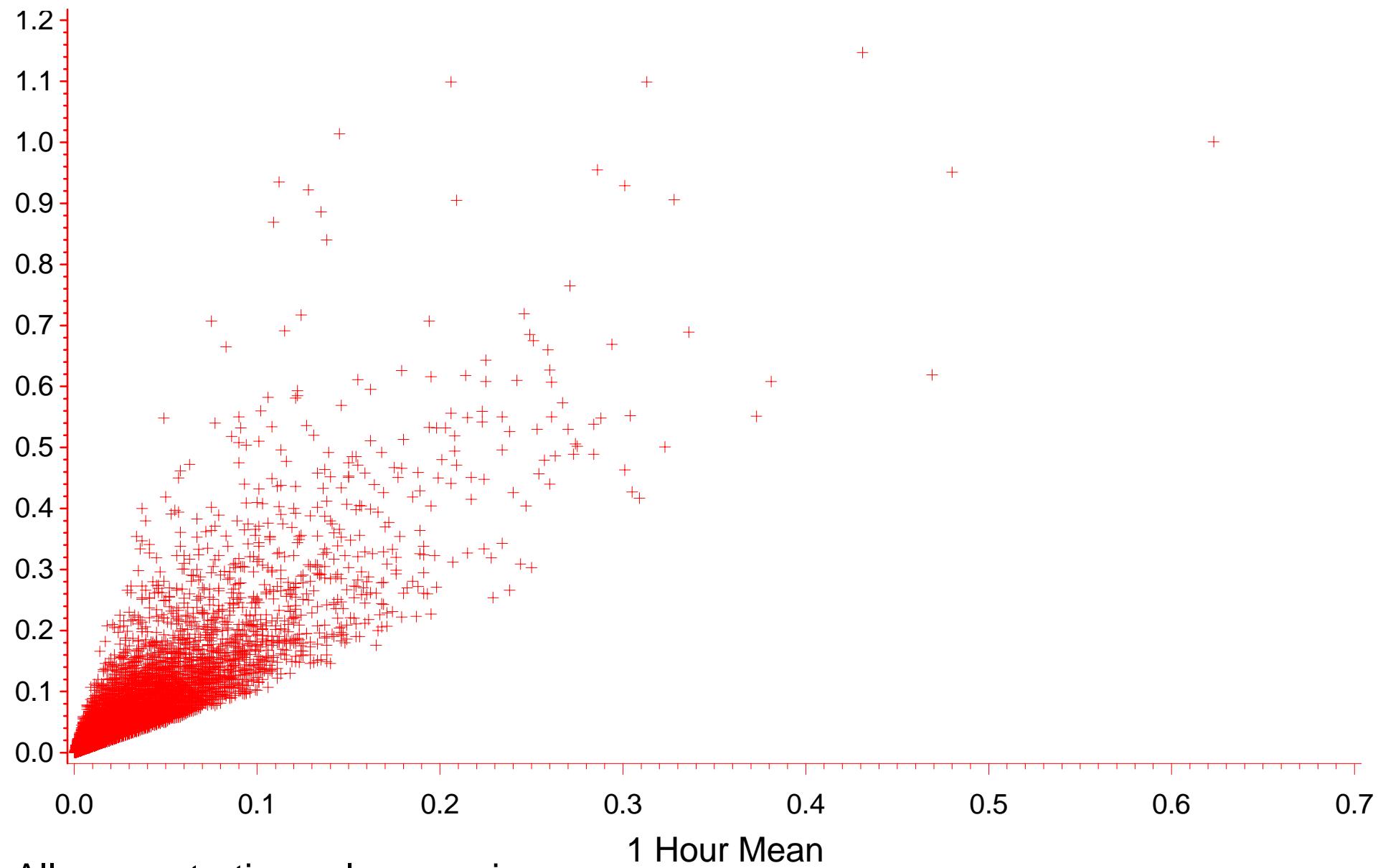
1 Hour Mean Data from same monitor and Hour as 5-minute data



(for ratios such that $1 < \text{Ratio} \leq 12$)

Figure 4 - 5-Minute Peak vs 1-Hour Mean Values

5 Minute Peak



All concentration values are in ppm

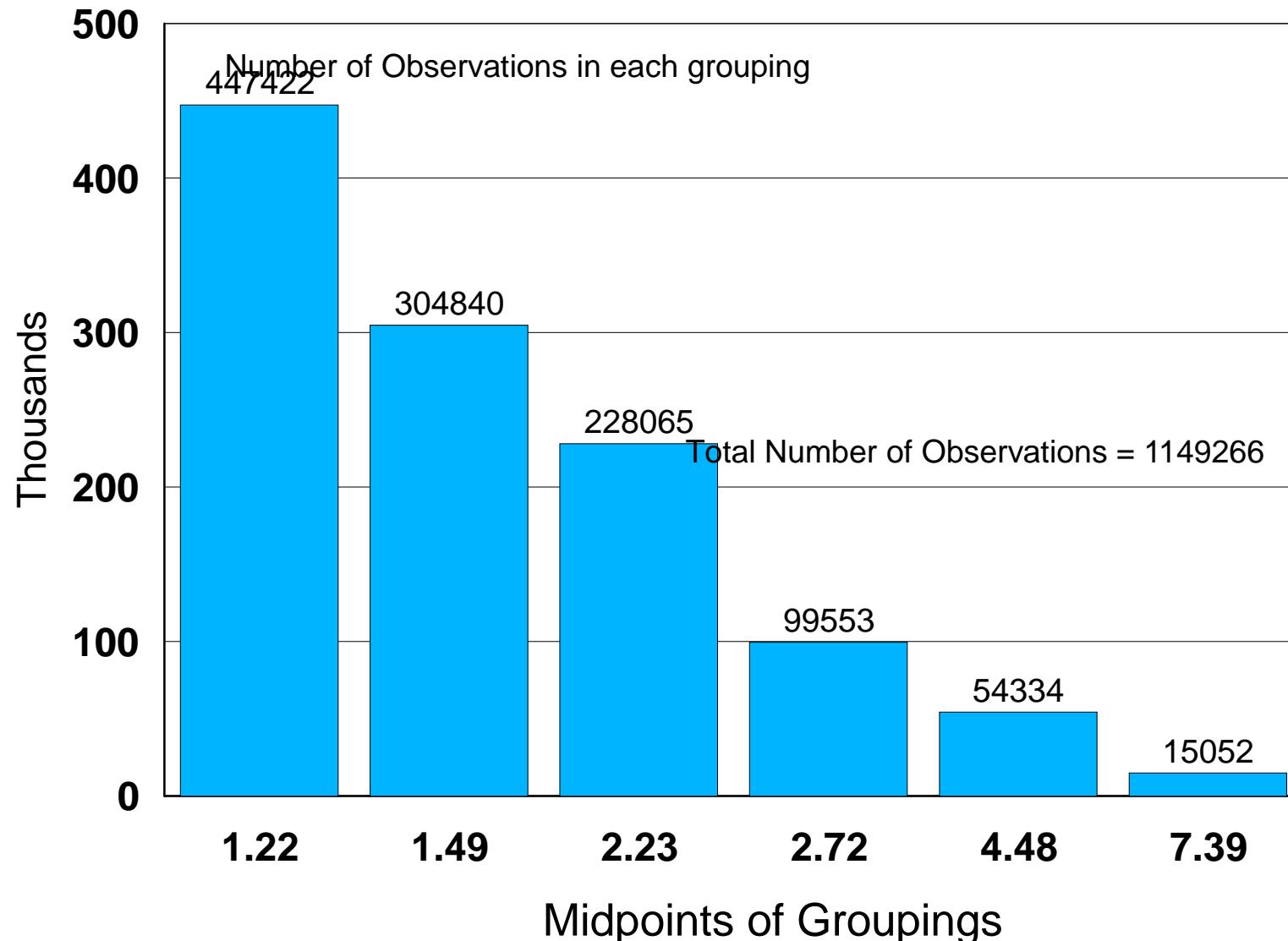
Every 20th point plotted

1 Hour Mean

(Points from ratios such that $1 < \text{Ratio} \leq 12$)

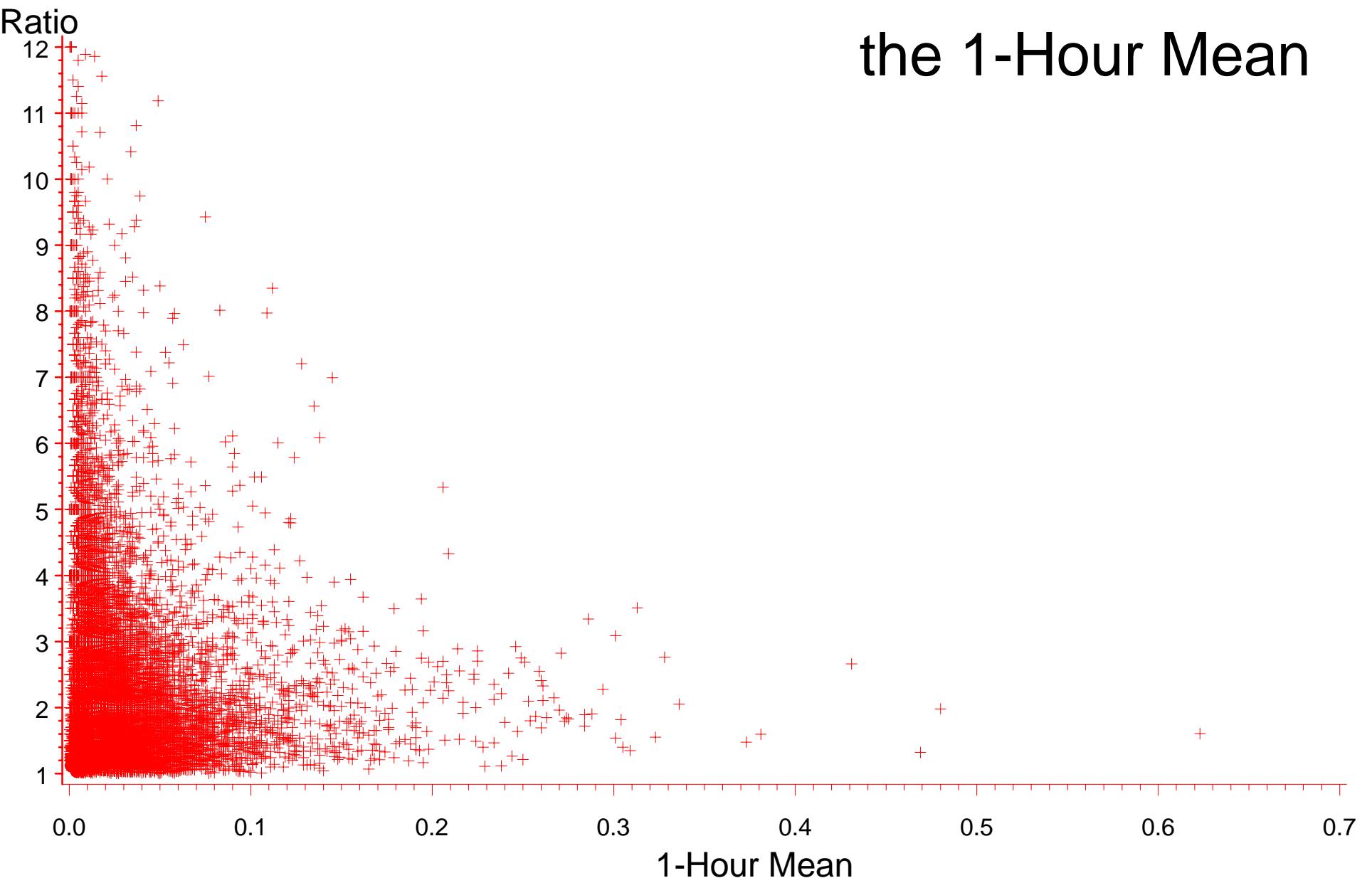
Figure 5 - Distribution of 5-Minute Peak to 1-Hour Mean Ratio

1-Hour Mean Data from same monitor and Hour as 5-Minute Peak data



(for ratios such that $1 < \text{Ratio} \leq 12$)

Figure 6 - 5-Minute Peak to 1-Hour Mean Ratio vs the 1-Hour Mean



All concentration values are in ppm

Every 20th point plotted

(Points from ratios such that $1 < \text{Ratio} \leq 12$)

Figure 7 - Ratio Statistics vs 1-Hour Bins

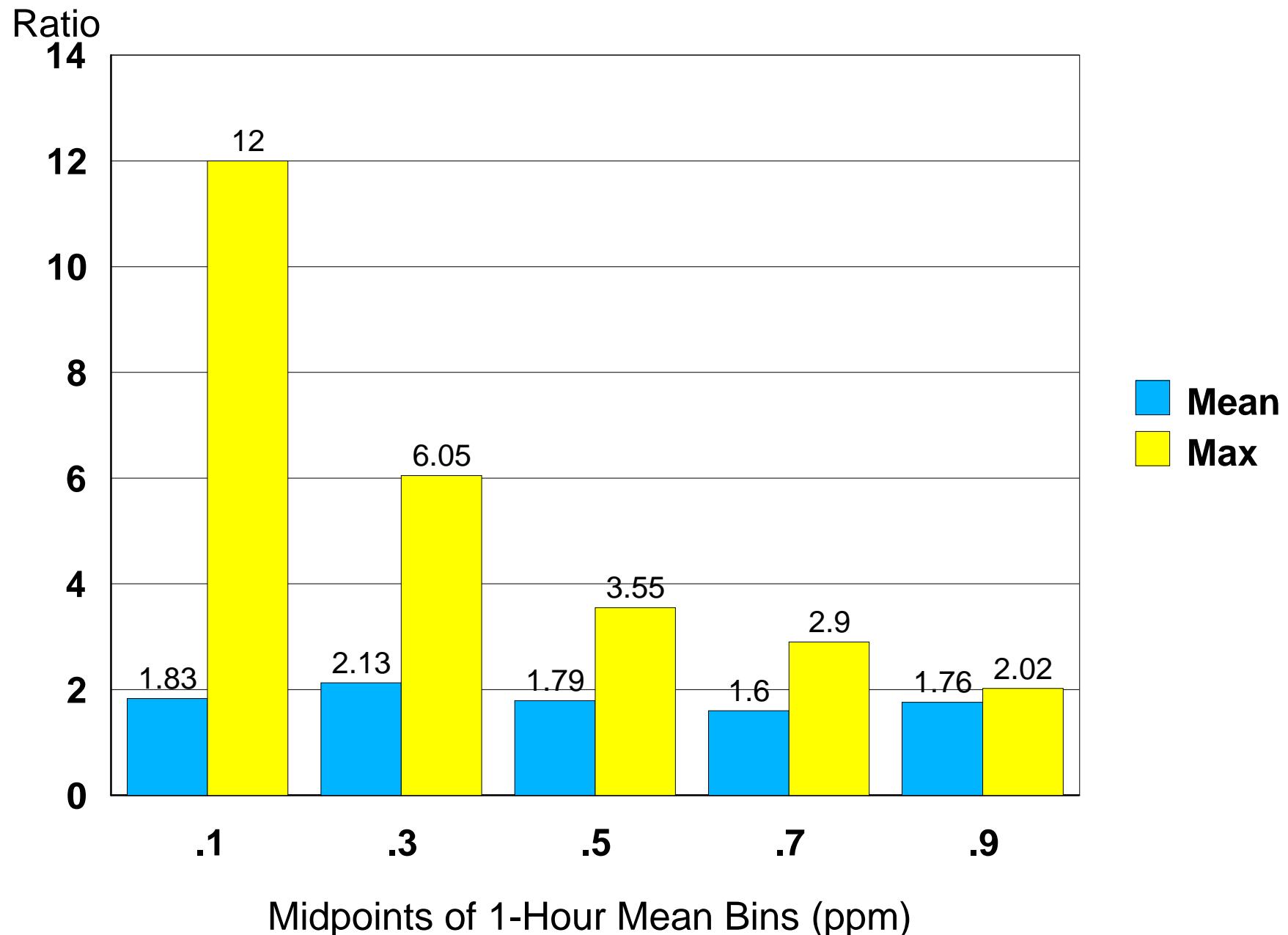
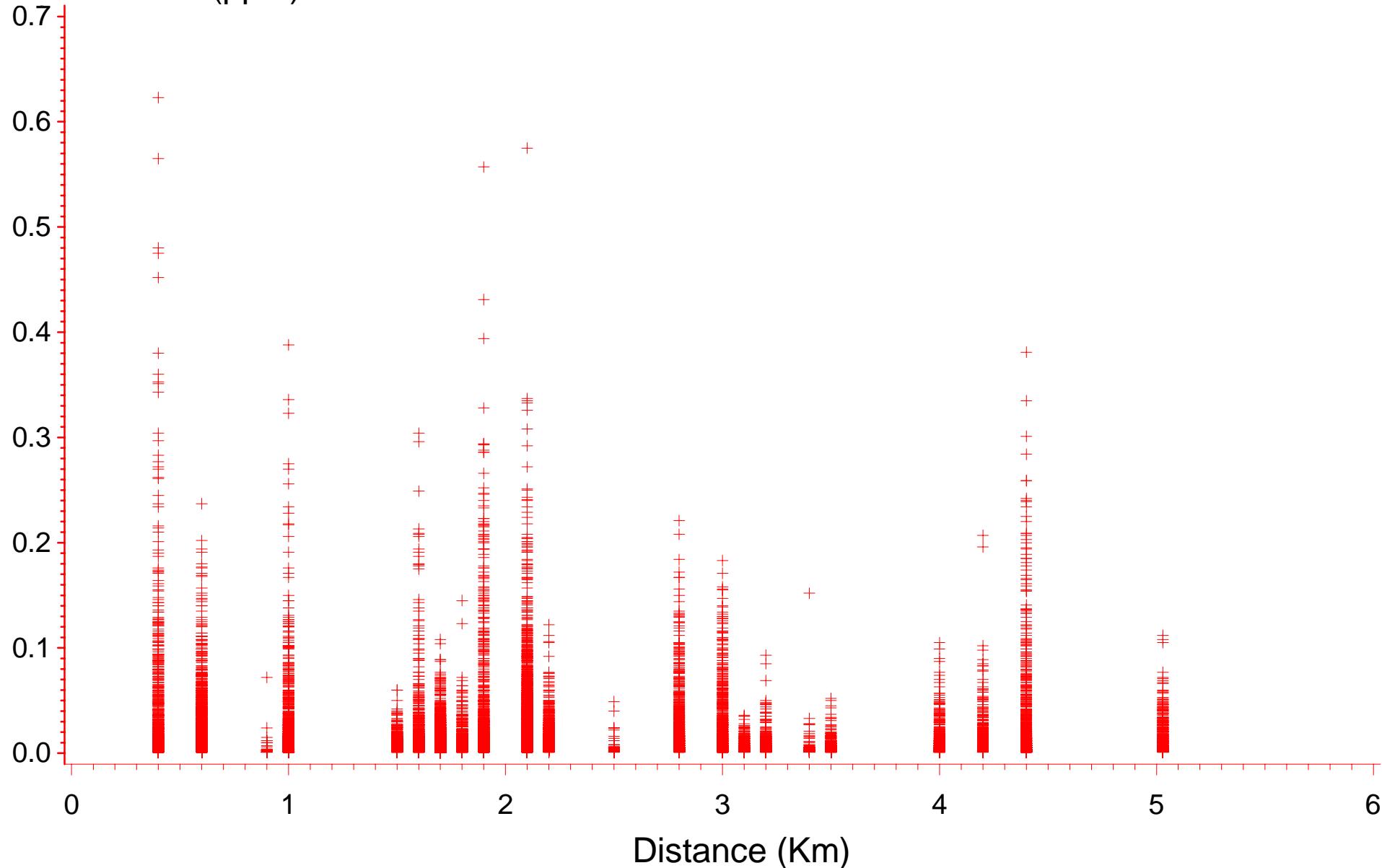


Figure 8 - 1-Hour Mean Values vs Distance

1-Hour Mean (ppm)

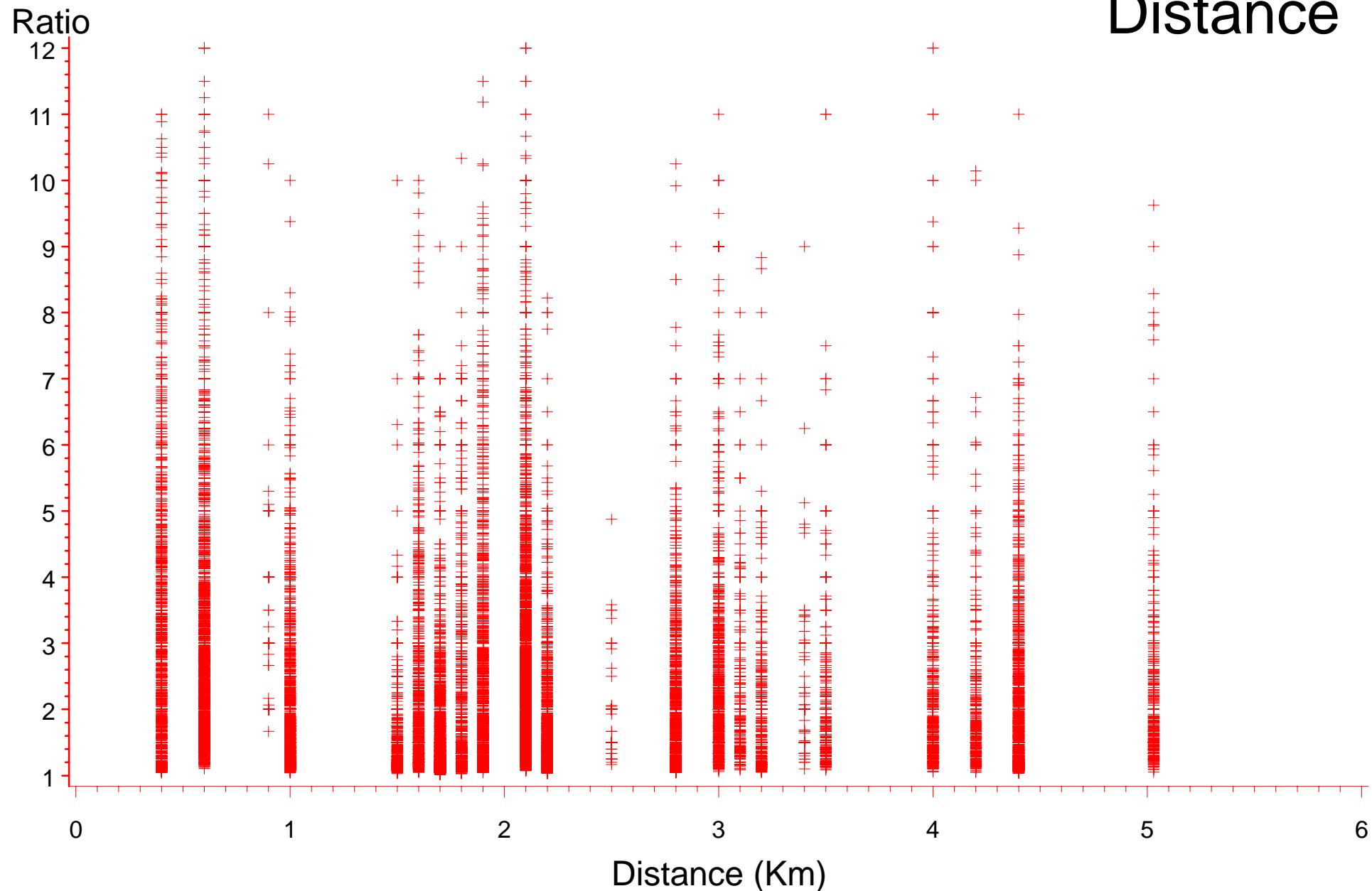


for 29 monitors near 21 isolated sources

Every 10th point plotted

(Points from ratios such that $1 < \text{Ratio} \leq 12$)

Figure 9 - 5-Minute Peak to 1-Hour Mean Ratio vs Distance



for 29 monitors near 21 isolated sources

Every 10th point plotted

(Points from ratios such that $1 < \text{Ratio} \leq 12$)

Figure 10 - Cumulative Frequency Distribution
for Ratios > 1.0

5-minute peak/1-hour mean ratio

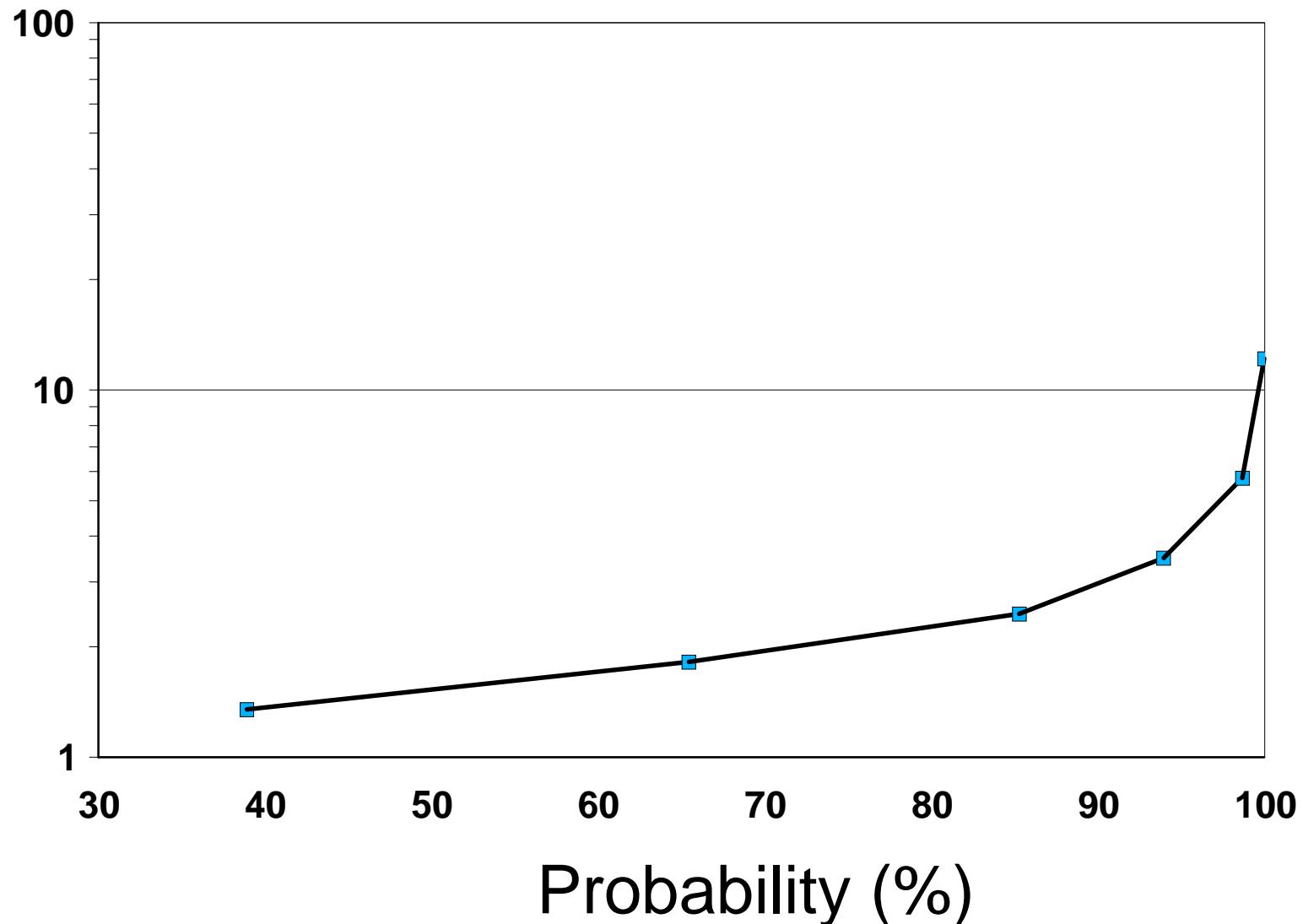


Figure 11 - Frequency Distribution of Sites for Estimated 5-Minute Values > .6 ppm

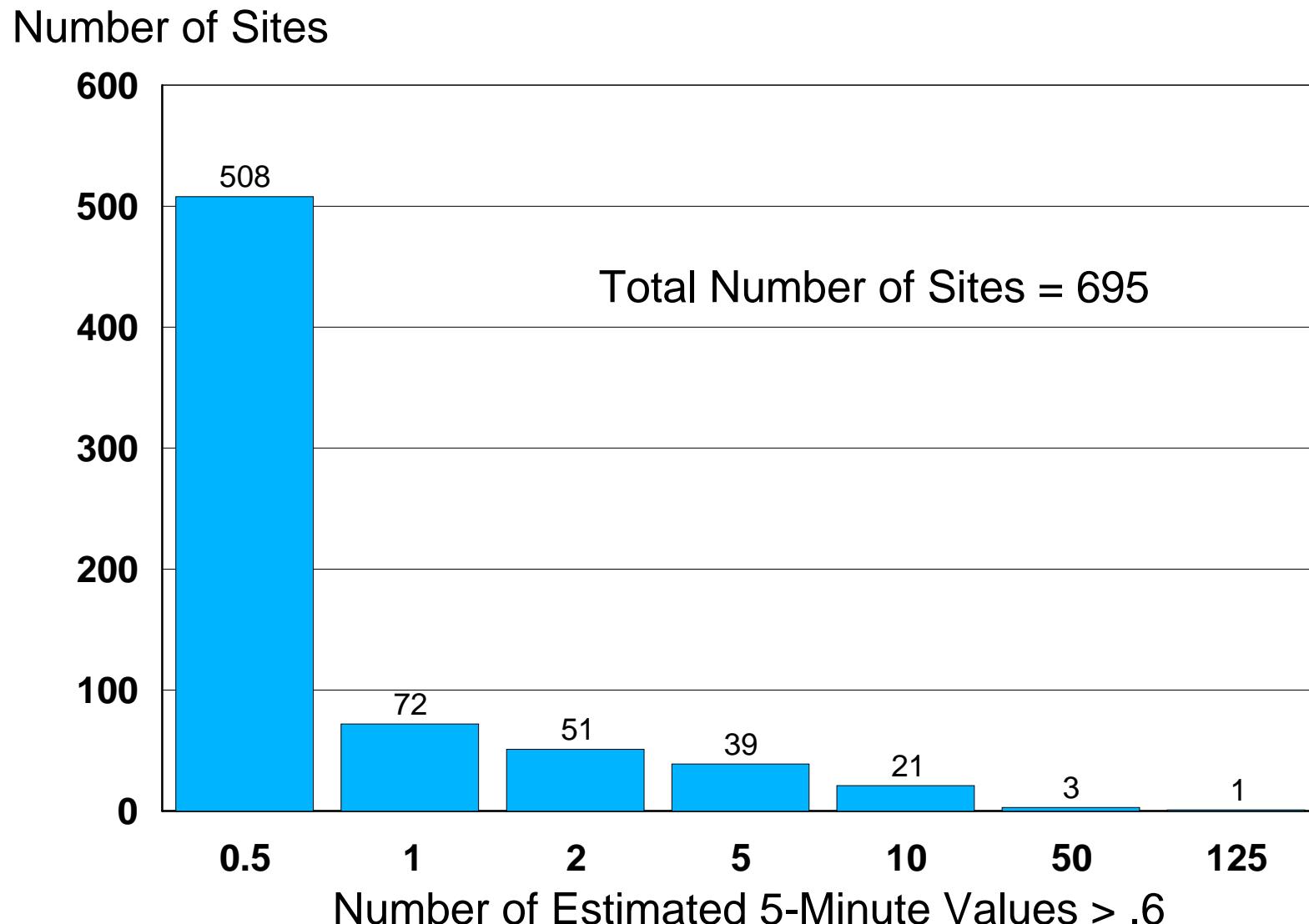
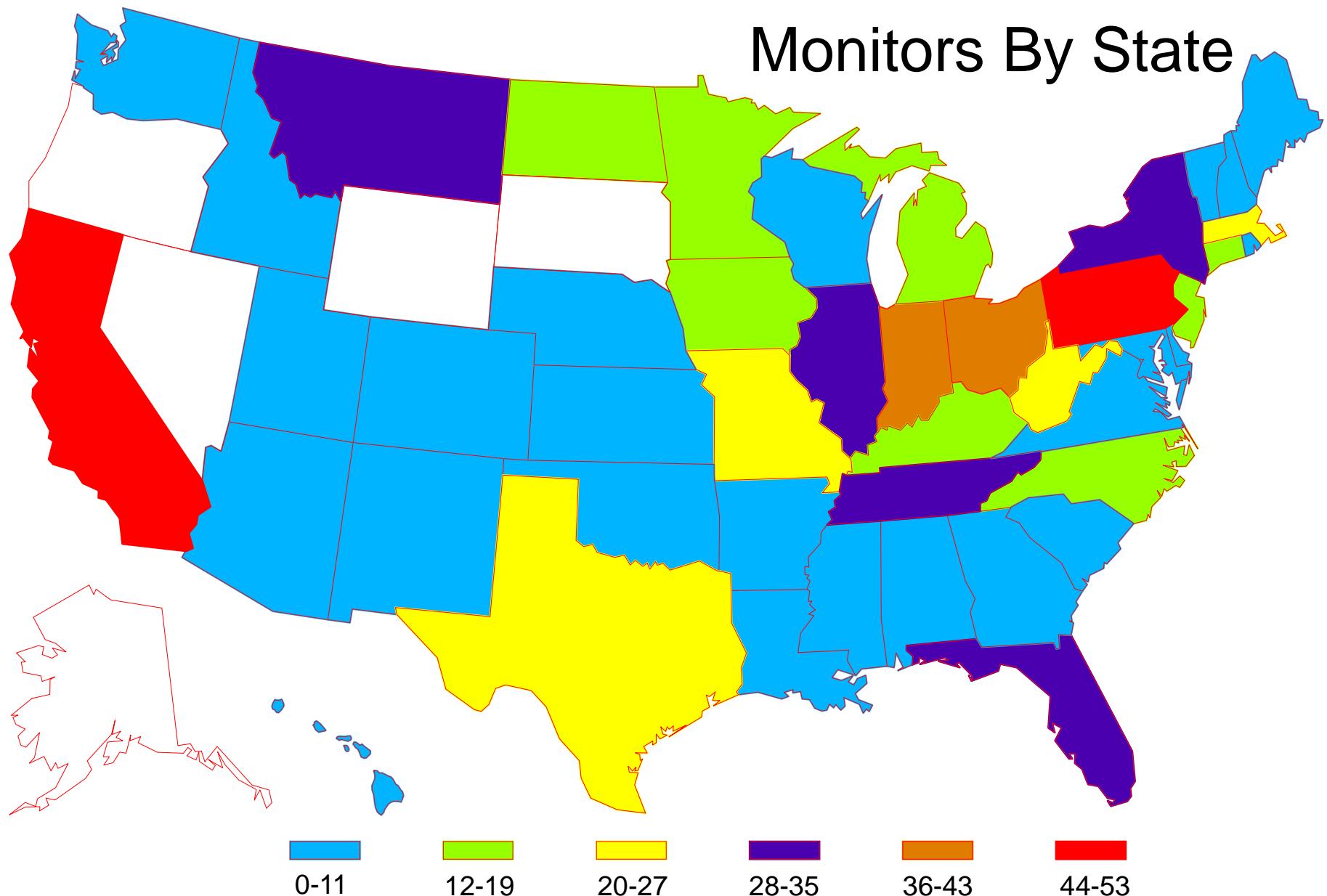
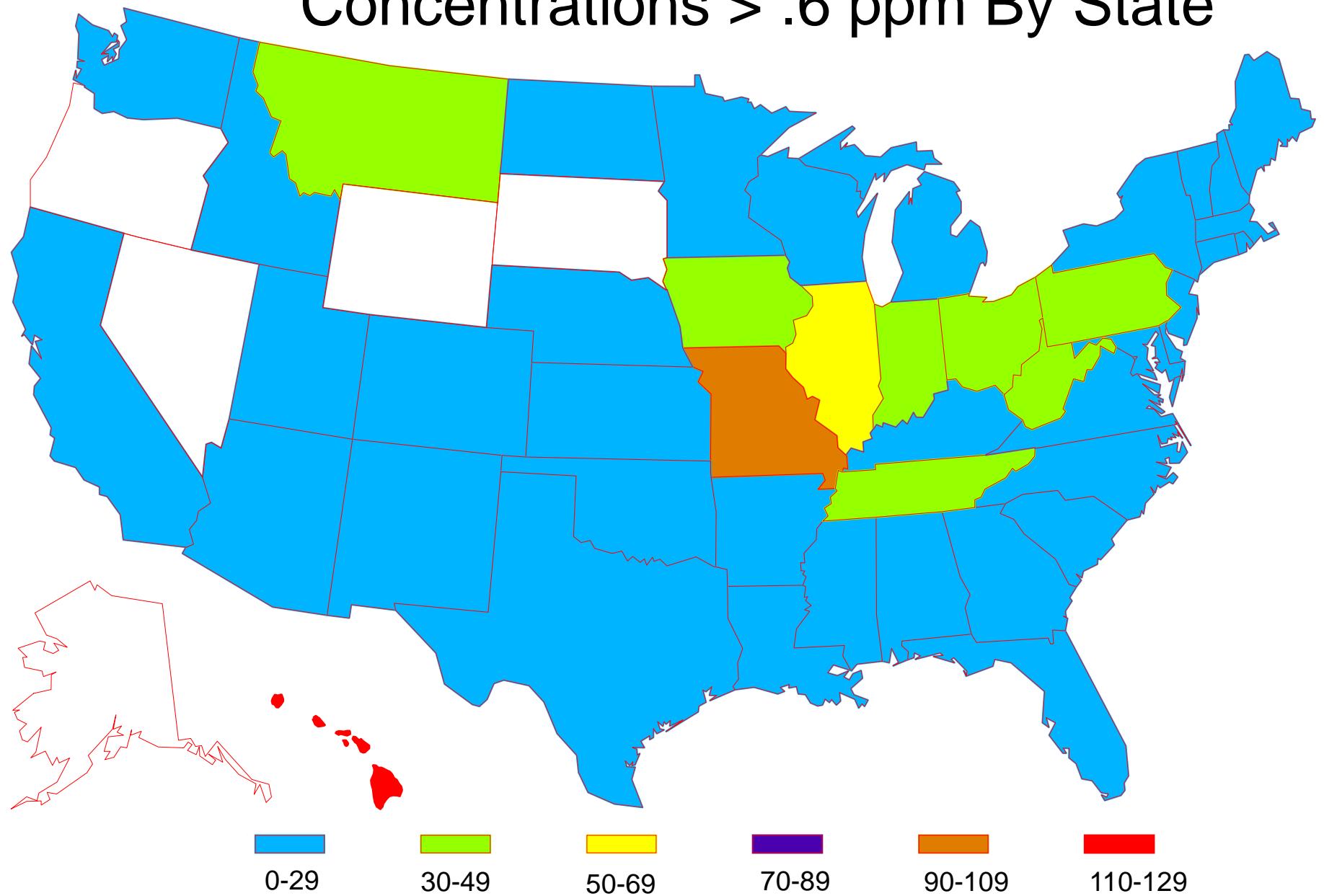


Figure 12 - Number of 1-Hour SO₂ Ambient Monitors By State



Based on 1996 AIRS 1-Hour SO₂ Monitors

Figure 13 - Estimated Number of 5-Minute Peak Concentrations > .6 ppm By State



Based on 1996 AIRS 1-Hour SO₂ Concentrations

Figure 14 - Estimated Maximum Number of
5-Minute Peak Concentrations > .6 ppm at any
one site for each State

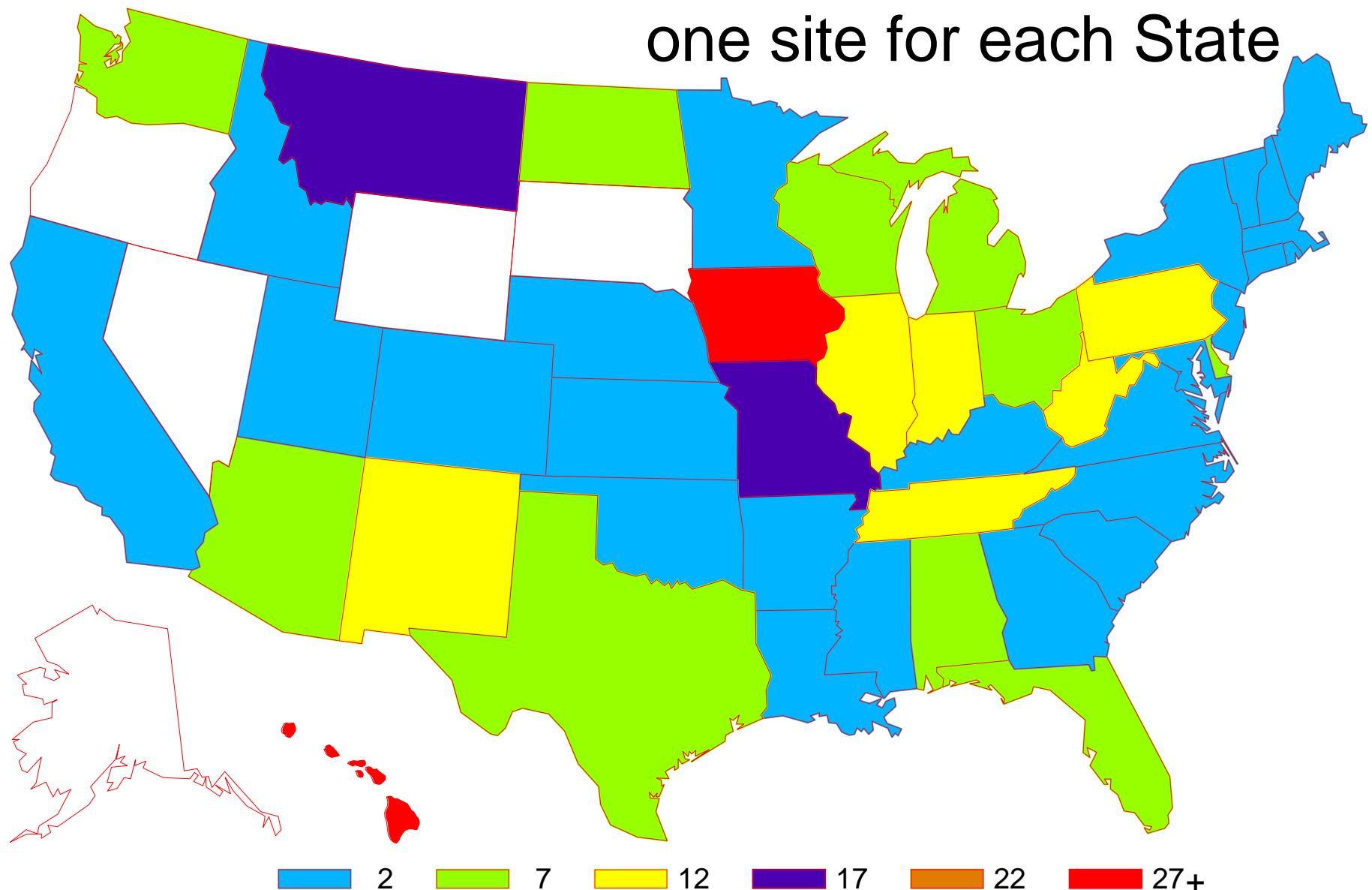


Figure 15 - Distribution of Monitors by Population

Percentage of Total Monitors

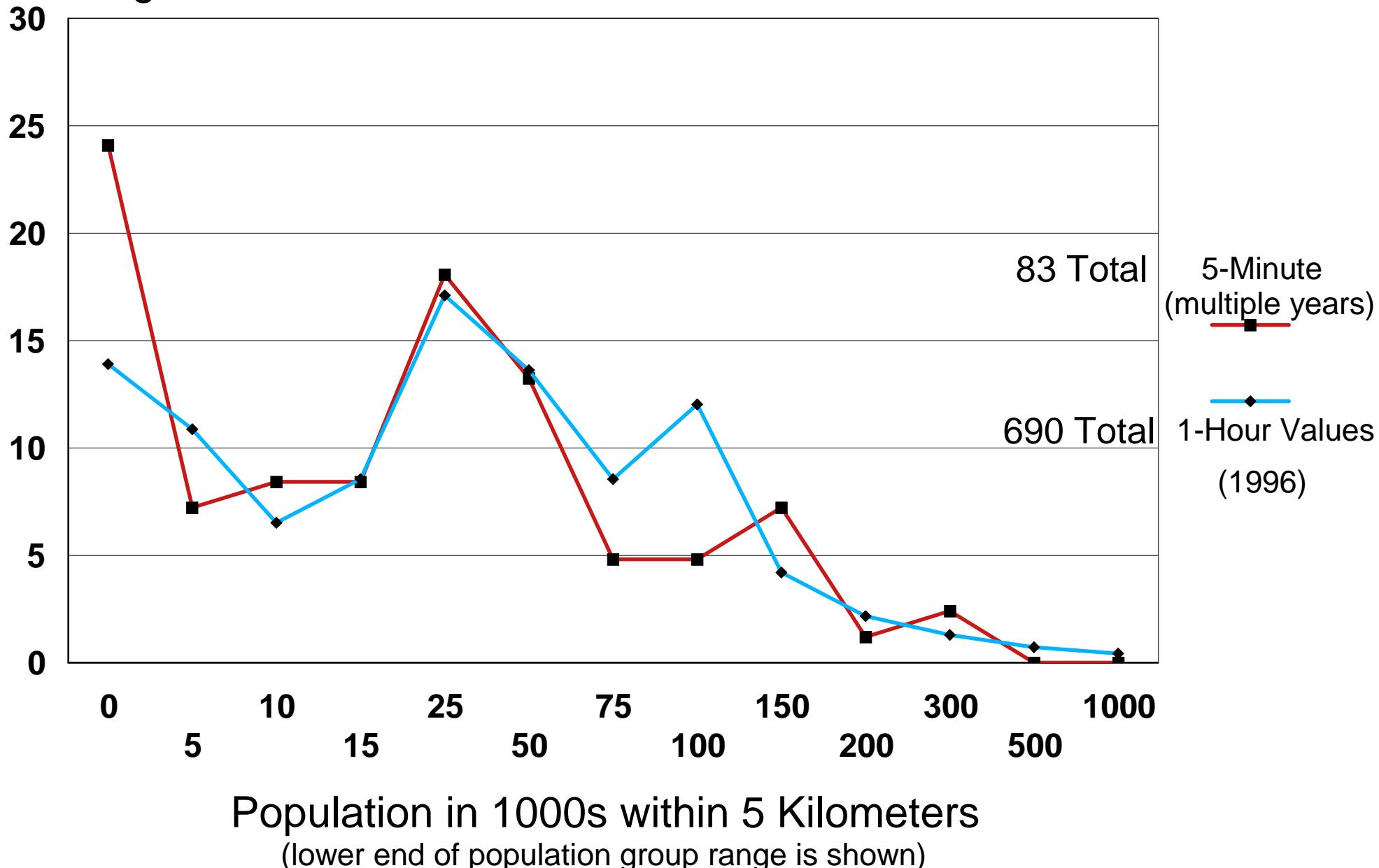


Figure 16 - Distribution of Monitors with Any Values > 0.6 ppm by Population

Percentage of Total Monitors

