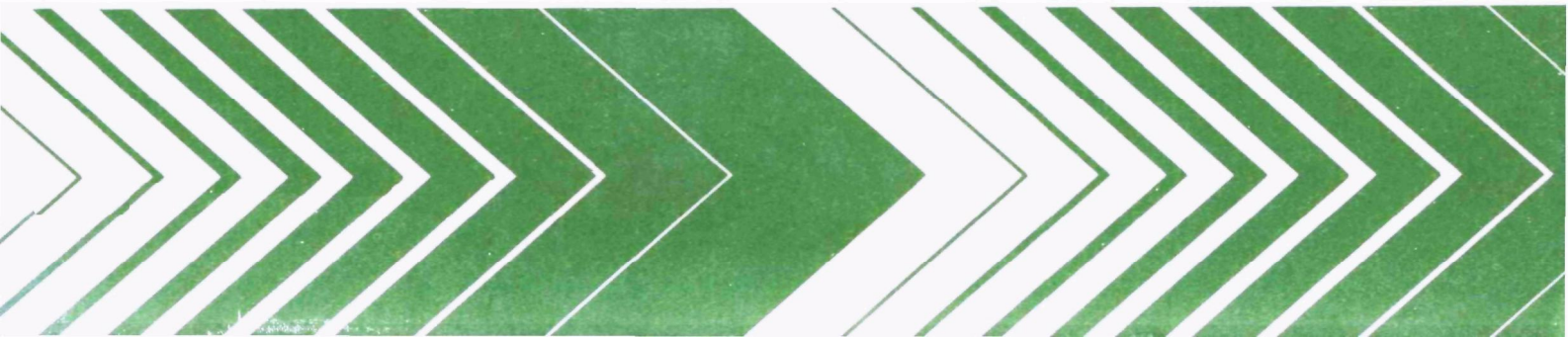


Research and Development

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# Air Quality Data for Metals 1975 from the National Air Surveillance Networks



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AIR QUALITY DATA FOR METALS  
1975  
FROM THE  
NATIONAL AIR SURVEILLANCE NETWORKS

by

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## DISCLAIMER

This report has been reviewed by the Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

## PREFACE

The Environmental Monitoring and Support Laboratory of the Environmental Research Center/Research Triangle Park (formerly the Quality Assurance and Environmental Monitoring Laboratory), with the assistance and cooperation of state and local agencies, conducts a variety of air sampling activities to obtain information about the air quality in the United States. Data on concentrations of metallic ions in particulate matter are listed in this report.

It is planned that this report will be updated on an annual basis. Any changes in the introductory material (site descriptions, data table presentations, laboratory methodology, etc.) made by EPA will be included in future reports.

## ABSTRACT

Particulate pollutant data gathered during calendar year 1975 by the cooperating stations of the National Air Surveillance Networks (NASN) provide the basis for listing the urban and nonurban concentrations of 11 metallic ions in suspended particulate matter.

The data are presented as a composite concentration value for each site for each of the four quarters of the calendar year; a yearly average is reported whenever valid data for all four quarters are obtained.

Three previous EPA publications, APTD-0978, APTD-1467 and EPA 600/4-76-041, list the concentrations of these metals in suspended particulate matter collected during 1966 and 1967, 1968 and 1969, and 1970 through 1974, respectively. In this report overall national summaries are compared for the years 1970 through 1975.

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## ACKNOWLEDGMENTS

The data reported in this publication could not have been gathered without the generous cooperation of the many state and local air pollution control agencies in the operation of the NASN stations. Also, gratitude is due each of the 10 EPA Regions who since 1973 have participated in this program by sending the high volume filters to the centralized laboratory of the Environmental Monitoring and Support Laboratory.

A large portion of the effort devoted to the extraction of filters and the routine operation of the spectrometer was contributed by Louis J. Pranger of the Analytical Chemistry Branch. His efforts are gratefully acknowledged.

The detailed computer tabulations of Table 5-1 were obtained by contract personnel of the Northrop Services, Incorporated.

The authors would like to thank all those who contributed their time and effort to this document.

## SECTION 1

### INTRODUCTION

#### ORGANIZATIONAL STRUCTURE

The Environmental Protection Agency (EPA), with the assistance and cooperation of state and local agencies, conducts a variety of air sampling activities to obtain information about the air quality in the United States. One such program, the National Air Surveillance Networks (NASN), has existed for over 20 years. The network has grown and undergone many modifications since its beginning, especially during the last 5 years. Table 1-1 catalogues these recent changes.

The first change, in sampling schedule, was brought about to encourage synoptic sampling with state/local ambient monitoring programs. In addition to assisting in the operation of the EPA sampling network, state and local air pollution control agencies administer their own air pollution control programs.

The second change, decentralization, was made to shift air monitoring responsibility from one centralized laboratory to 10 EPA regional laboratories. This modification was implemented over the 14 month period from December 1972 through January 1974. Moreover, in January 1974, the responsibilities of the 10 EPA Regional Offices were extended further to the overall management of the NASN sites. Additional responsibilities of the Regional Offices include weighing the filters and determining the concentrations of total suspended particulates (TSP). Table 1-2 and Figure 1-1 indicate the locations of the Regional Offices and the geographic areas of responsibility.

The EPA regional laboratories send the filters to the Environmental Monitoring and Support Laboratory (EMSL) for routine trace constituent<sup>1</sup> analyses. The filters are then stored in the Filter Bank for future non-routine, special analyses as required.

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<sup>1</sup>Metals, nonmetallic inorganic ions and benzo(a)pyrene (BaP).

TABLE 1-1. NASN NETWORK MODIFICATIONS

Month/Year	Change	Impact*
January 1972	<u>Sample</u> schedule changed from random biweekly to 12-day systematic samples, first sample collected 1/10/72.	All sites
December 1972	<u>Decentralization</u> , Region II	NJ, NY, PR
April 1973	<u>Decentralization</u> , Region I	CT, ME, MA, NH, RI, VT
December 1973	<u>Decentralization</u> , Regions V, VII, VIII, IX, X	IL, IN, MS, MN, OH, WI, IA, KS, MO, NE, CO, MT, ND, SD, UT, WY, AZ, CA, HI, NV, AK, ID, OR, WA
January 1974	<u>Decentralization</u> , Regions III, IV, VI	DE, DC, MD, PA, VA, WV, AL, FL, GA, KY, MS, NC, SC, TN, AR, LA, NM, OK, TX

\*Abbreviations coincide with standard U.S. mail code designations for states.

Although pollutant monitoring was decentralized, the analysis and publication of the trace pollutant data remains the responsibility of one laboratory, the Environmental Monitoring and Support Laboratory (EMSL), Research Triangle Park, North Carolina. Prior to January 1974, filters also were weighed and analyzed for TSP by EMSL; however, since this date, the EPA regional laboratories have been performing these tasks. It should be noted that the weighing of the filters, before and after sample collection, are used for determination of TSP and are not used in the determination for metals. The particulates containing metals are assumed to be collected uniformly across the filter area.

#### SAMPLE COLLECTION

Air particulate samples were collected in 1975 at nearly 300 urban and 35 nonurban NASN sites located across the country. The urban sites are generally located within a city or town or adjacent suburbs. The nonurban sites were originally located in rural or remote areas, although with the passage of time, many of these rural areas, especially in the northeast, have become more heavily populated and thus are subject to increasing influences of spreading urbanization. Voluntary operation of each site is maintained through the generous assistance of local or state agencies and individuals such as park rangers, firemen, or policemen.

Prior to 1972, 24-hour samples (beginning at midnight) were collected according to a biweekly (26 samples per year) modified random sampling schedule. The schedule was modified to ensure equal representation for each of the seven days of the week. Since January 10, 1972, the initial sampling date, samples have been collected every 12th day (30 or 31 samples per year). This sampling schedule eliminates the need for redesignating a new sampling schedule each year. In addition, it is easily implemented in the field.

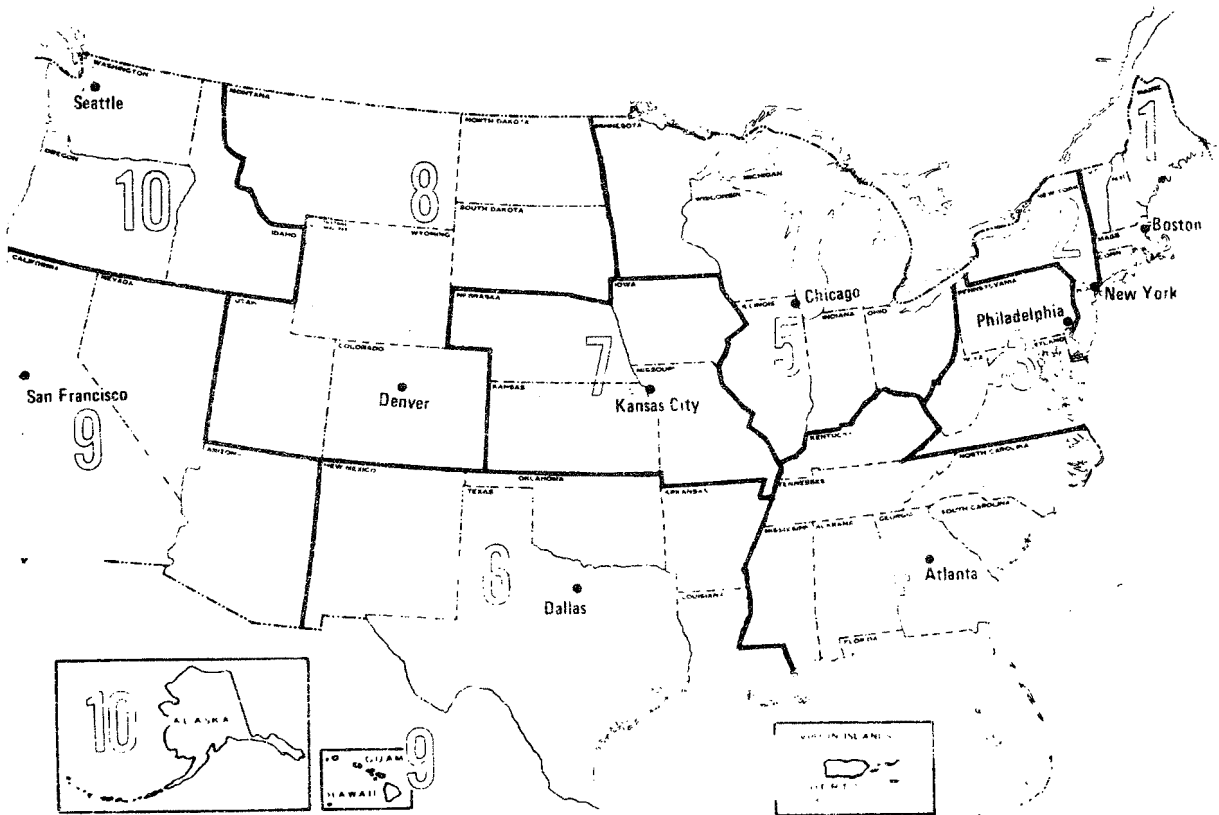
#### DATA HANDLING AND ANALYSIS

Beginning with the 1974 samples, the responsibility for managing the NASN was given to each of the 10 EPA Regions (Table 1-2). Prior to that time one centralized laboratory located at Research Triangle Park, North Carolina, weighed and analyzed the high volume filters. The 10 EPA Regions send the TSP values to the National Aerometric Data Bank (NADB). The results

TABLE 1-2. EPA REGIONS AND LOCATIONS OF REGIONAL OFFICES

Region	Regional Office Location
I	Boston, Massachusetts
II	New York, New York
III	Philadelphia, Pennsylvania
IV	Atlanta, Georgia
V	Chicago, Illinois
VI	Dallas, Texas
VII	Kansas City, Missouri
VIII	Denver, Colorado
IX	San Francisco, California
X	Seattle, Washington

Figure 1-1. EPA Regions and Regional Offices



of chemical analyses are published by EMSL and are sent to the NADB for archiving.

The metallic ion data reported herein were analyzed by EMSL to determine which data to exclude from data summaries because of anomalies. The precision and bias of the data were determined using statistical analyses. The overall accuracy of the sampling data was evaluated to assist in the interpretation of the air quality summaries.

The air quality summaries include annual concentration data classified as urban and nonurban origin and compiled for the nation as a whole (Tables 4-1 and 4-2). The data for individual site locations are presented as quarterly values, and as annual averages where three or four quarterly values are available (Table 5-1).



## SECTION 2

### QUALITY CONTROL

#### INTRODUCTION

Beginning with the previous publication for samples of 1970 through 1974, estimates of analytical performance were given with each data table. This practice is continued for this report for 1975 samples. This section presents the quality control information and the procedures for determining these analytical performance limits.

#### BLANK FILTERS, INSTRUMENT DETECTION LIMITS AND ANALYTICAL DISCRIMINATION LIMITS

For previous years (1970-1974), analyses of blank filters were made by pooling the extracts from a large number of clean (or unexposed) filters, obtaining a single composite extract, and analyzing the extract periodically throughout the analysis period. Consequently, no estimate of homogeneity of the lot of filters was utilized in the processing of sample data.

For 1975, 27 composite samples of filters were obtained. Each composite arbitrarily contained material from five filters. A total of 17.5 square inches of filter material, or  $(17.5) \div 5 = 3.50$  square inches per filter, was used for each composite determination on each of these 27 extracts.

The average of the 27 determinations was statistically tested against zero using an estimated measure of instrument noise at zero concentration. If the average was not significantly different from zero, the average was considered as below the instrument detection limits (BD), and was so indicated for beryllium, cadmium, cobalt, lead, and vanadium in Table 2-1. The average values for the remaining elements, which were significantly different from zero, are listed in Table 2-1 as the blank filter concentrations for routine sample analyses. All of the analyses of the blank filters were made prior to the analyses of the 1975 samples, instead of during the analysis period for routine samples. These average blank values were

subtracted from each sample result to obtain the amount of the element contained only in the particulate.

The analytical limits of discrimination (LD) for 1975 were obtained by multiplying the standard deviation of the 27 composite blank determinations by the factor 3.3.<sup>1</sup> For previous years (1970-1974), when only ten (10) blank analyses were made for each element, the use of the 3.3 factor provided 95%-95% tolerance limits.<sup>2</sup> For 1970-1974, therefore, the analytical limits of discrimination given in Table 2-1 represented the level below which 97.5% of all such blank determinations would fall with a confidence of 95%. However, for 1975, when 27 blank analyses were made, the use of the 3.3 factor provides 95%-98% tolerance limits.<sup>3</sup> Thus the analytical limits of discrimination given in Table 2-1 represents the level below which 99% of all such blank determinations would fall with a confidence of 95%.

It should be noted that except for beryllium and titanium, the analytical limits of discrimination for 1975 are appreciably higher than for previous years. The 1975 values are considered more realistic because the analyses of the blank filters for 1975 introduced for the first time (1) similar filter-to-filter differences and (2) similar variations from extraction-to-extraction, as exist for the analysis of exposed quarterly composite samples. Neither of these sources of variability was included in the determination of limits of discrimination for previous years.

<sup>1</sup>Experimental Statistics, Handbook 91, NBS, page T-11.

<sup>2</sup>The 95%-95% tolerance limits include a two-tailed interval within which 95% of all individual values should fall with a confidence of 95%.

<sup>3</sup>The 95%-98% tolerance limits include a two-tailed interval within which 98% of all individual values should fall with a confidence of 95%.

TABLE 2-1. BLANK FILTER AND ANALYTICAL LIMIT OF DISCRIMINATION  
( $\mu\text{g}/\text{m}^3$ )\*

Element	1975 Blank Filter Concentration	Analytical Limit of Discrimination (LD)**					
		1970	1971	1972	1973	1974	1975
Beryllium	BD***	.00005	.00005	.00004	.00007	.00008	.00006
Cadmium	BD	.00023	.00023	.00019	.00027	.00036	.0064
Chromium	.0015	.00071	.00071	.00062	.00080	.00084	.0027
Cobalt	BD	.00069	.00069	.00052	.00076	.00063	.0039
Copper	.0024	.0011	.0011	.0012	.0010	.0012	.0057
Iron	.0956	.0082	.0082	.0059	.010	.010	.0450
Lead	BD	.022	.022	.015	.029	.014	.1177
Manganese	.0029	.00040	.00040	.00024	.00055	.00064	.0025
Nickel	.0007	.0014	.0014	.0012	.0017	.0019	.0091
Titanium	.0017	.0039	.0039	.0032	.0045	.0061	.0036
Vanadium	BD	.0021	.0021	.0017	.0025	.0028	.0099

\* $\mu\text{g}/\text{m}^3$  are obtained by multiplying  $\mu\text{g}/\text{ml}$  by a factor (37.89) to convert to total  $\mu\text{g}/\text{filter}$  and dividing by an assumed air volume of 2500  $\text{m}^3$ .

\*\*LD is below the analytical limit of discrimination.

\*\*\*BD is below the detection limits of the analytical instrumentation and is therefore considered as zero.

## PRECISION AND BIAS

Table 2-2 presents precision and bias information together with 95% confidence limits for individual reported values. All the data are expressed as percentages because precision and bias are usually concentration dependent.

Precision has been determined from the standard deviation of percent differences between analyses of duplicate composites.<sup>1</sup> Duplicate composites are treated in the same way with the identity of each being unknown to the analyst. Thus, the variability resulting from cutting and extracting, as well as analysis, is included in the precision estimate. An insufficient number of duplicate results above the LD were obtained for the 1975 samples for beryllium, cadmium, cobalt and vanadium. The precision values from the previous report for samples from the years 1970 through 1974 are presented in Table 2-2 for these metallic ions.

Bias is estimated through the use of spiked samples in which known amounts of the metallic ions are added to one of a pair of duplicate composite samples. In this way, the percentage recovery of the known addition can be determined. Although no spiked samples were analyzed during the analysis period for 1975 samples, as they had been for previous years, the results of spiked samples from previous years are considered to be reasonable measures of bias for 1975 as well. The analysis of spiked samples involves the extraction process as well as the analytical process. The percentage loss values, i.e., 100 minus percent recovery, from the previous report are presented in Table 2-2, and used as a basis for the determination of confidence limits.

## PERFORMANCE QUALITY ASSESSMENT

Precision and bias estimates discussed above have been combined to form what is termed "Analytical Quality." The "95% confidence limit" expressions for "Analytical Quality," which appear in Table 2-2 and which are shown on each data table, consist of the correction term for bias (actually 100 minus percent recovery) and a plus or minus term for precision (actually 1.96 times

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<sup>1</sup>The standard deviation of the relative percent differences was divided by  $\sqrt{2}$  to obtain the estimate of precision for an individual reported value.

TABLE 2-2. ANALYTICAL PRECISION, BIAS AND CONFIDENCE LIMITS

Elements	Precision		Bias	95% Confidence Limits, %
	Replicate Extractions No. of Dup.	$C_v$ , % <sup>b</sup>	% Loss = (100 - % Rec.), % <sup>a</sup>	
Be	NA <sup>c</sup> (20)	NA (31)	16	16 ± 62
Cd	NA (41)	NA (23)	9	9 ± 46
Co	NA (20)	NA (29)	14	14 ± 58
Cr	22	26	21	21 ± 52
Cu	25	15	28	28 ± 30
Fe	25	17	25	25 ± 34
Mn	25	11	29	29 ± 22
Ni	16	26	21	21 ± 52
Pb	22	13	14	14 ± 26
Ti	25	27	42	42 ± 54
V	NA (16)	NA (20)	21	21 ± 40

<sup>a</sup>From analyses of spiked samples for years 1970-1974.

<sup>b</sup> $C_v$  - Coefficient of variation.

<sup>c</sup>NA - Not available, insufficient number of replicate tests with values above LD for 1975 samples. 1970-1974 values are shown in parentheses.

the coefficient of variation for individual reported values). These confidence intervals are applied to a given datum point (minimum, maximum or percentile) in the following way.

The approximate upper and lower confidence limits\* ( $L_u$  and  $L_l$ , respectively) are calculated as follows:

$$L_u = X(1 + B/100 + 1.96 C_v/100) \quad (1a)$$

$$L_l = X(1 + B/100 - 1.96 C_v/100) \quad (1b)$$

where  $X$  = the individual analysis value (a quarterly composite value)

$B$  = bias, percent (percent loss)

$C_v$  = coefficient of variation of individual analysis

For example, the first cadmium value above LD in Table 5-1 is  $0.0078 \mu\text{g}/\text{m}^3$  and the confidence limits are indicated as  $9\% \pm 46\%$ . The resulting confidence limits are:

$$L_u = 0.0078(1 + 9/100 + 46/100) = 0.0121 \mu\text{g}/\text{m}^3 \quad (2a)$$

$$L_l = 0.0078(1 + 9/100 - 46/100) = 0.0049 \mu\text{g}/\text{m}^3 \quad (2b)$$

The quarterly composite value is expected to be analytically correct within the above limits.

It is emphasized that the estimates determined by the above formulas consider only variability from sample preparation (i.e., cutting, extraction) and analysis. Further, it is assumed that the bias is constant, and that the inherent variability due to sample preparation and analysis remains unchanged. Furthermore, if additional information were known concerning variation due to factors such as the flow rate or other variables of sampling, then these confidence intervals would be wider. As a result, all confidence limits are under-estimates of the total variability of the total measurement process, which includes sampling, sample handling, and analysis.

\*A more exact equation is presented in Appendix A.

## SECTION 3

### LABORATORY METHODS

#### SAMPLING PROCEDURES

The mass of particulate matter per volume of air is determined by drawing air through a preweighed glass-fiber filter with a high volume (hi-vol) air sampler and then weighing the soiled filter. In order to obtain the flow rate, a calibrated rotameter is read at the start and finish of the sampling period, and the averaged value is used with a calibration table for that rotameter. The known sampling period (24 hours) and the measured flow rate allow for calculation of the volume of air sampled.

The hi-vol samplers, operating at approximately 1.7 cubic meters per minute, collect particulate matter from about 2500 cubic meters of air during the 24-hour sampling period. The filters used are 20.3 by 25.4 centimeter flash-fired glass-fiber filters, selected for low and uniform background concentrations of those substances to be measured.

As a precaution against pinholes or other flaws that could affect air flow, the filters are screened for imperfections on a light table. Prior to weighing, the filters are equilibrated for a minimum of 24 hours at a temperature of 24° Centigrade and a relative humidity of 50 percent or less. Because any crease in a filter can seriously affect the air flow, filters are weighed with a balance that permits weighing without bending.

The filters are then distributed unfolded to the cooperating local agencies for the urban sites or to the designated participant responsible for operating the nonurban site. After sampling, the filters are folded along the lengthwise centerline with the collected particulate matter inside. They are then returned to a laboratory. The filter with the collected particulates is again equilibrated for at least 24 hours at a temperature of 24° Centigrade and a relative humidity of 50% or less, after which they are weighed to determine the amount of particulate matter that was collected.

## METALS

In the analysis for metals, quarterly filter composites are analyzed. A 2.5 by 18.0 centimeter strip is cut across the width from each contributing filter. The length of each strip utilized in the composite is determined by the number of filters included in the quarterly composite. (The total area is fixed at 113 square centimeters.) For example, if there were 5 valid samples in a quarter, a strip approximately 9 cm long would be cut from each filter. The 5-8 strips for the quarter are composited and ashed in an oxygen plasma to oxidize organic material. The metals are then extracted by refluxing for 3 hours with a mixture of nitric and hydrochloric acids.

Quantitative analysis is accomplished by measuring the intensity of the emission line for each metal as the sample extract is excited in an optical emission spectrometer, and by then comparing these measurements with a calibration curve obtained with standard solutions. For the 1975 samples, each reported value is the result of one determination made on each composite extract.

Data for samples collected prior to 1966 may not be directly comparable to the results presented in this report because samples taken from 1957 through 1965 were ashed in a muffle furnace at 500° Centigrade, causing the loss of varying amounts of the elements. For samples collected beginning in 1966, this deficiency has been corrected by ashing in an oxygen plasma at lower temperatures.



## SECTION 4

### NATIONAL SUMMARY OF AIR QUALITY MEASUREMENTS

The data in Tables 4-1 and 4-2 are cumulative frequency distributions by individual element of all quarterly results for urban and nonurban locations, respectively. Consider, for example, the line for urban 1975 lead. The first number, 695, gives the number of site quarters of lead data for the year. The next entry, minimum, is the lowest urban site quarter result of LD  $\mu\text{g}/\text{m}^3$ . Other entries, such as 1.54 under the 90th percentile column, are to be interpreted such that 90 percent of the 695 site-quarter results, i.e.,  $.90 \times 695 = 626$ , were equal to or less than 1.54  $\mu\text{g}/\text{m}^3$ . The usual descriptive statistics, means and standard deviations (arithmetic and geometric) are shown in the last 4 columns. Comparisons among years within a pollutant provide a relative indication of trends. For example, lead values across the country appear to be decreasing--not only on the average but also for most percentiles of the frequency distribution shown in Table 4-1. However, some of the year-to-year variability in the national summary tables may be attributed to different sets of sites being used in the summarization depending upon which sites met the completeness criteria for valid data.

Since typical levels of some pollutants may be geographically dependent, the national frequency distribution is not helpful for judging the localized contribution and relative severity of these pollutants for an individual site. Therefore, local site analyses should be performed with data from surrounding sites within the same general geographical area.

The increase in copper ion concentration for 1975 compared to previous years for both urban and nonurban sites should be noted.

TABLE 4-1. URBAN NATIONAL CUMULATIVE FREQUENCY DISTRIBUTIONS

Element	Year	No.	Min.	Percentiles								Arithmetic		Geometric	
				10	30	50	70	90	95	99	Max.	Mean*	Std. Dev.	Mean*	Std. Dev.
Beryllium**	1970	787	LD	LD	LD	LD	LD	0.2	0.3	0.6	2.9	--	0.2	0.01	4.91
	1971	742	LD	LD	LD	LD	LD	0.2	0.3	0.5	0.7	0.1	0.1	0.03	3.22
	1972	708	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--
	1973	559	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--
	1974	594	LD	LD	LD	LD	LD	LD	LD	LD	0.2	--	--	--	--
	1975	693	LD	LD	LD	LD	LD	0.1	0.1	0.2	1.4	0.03	0.1	0.01	3.89
Cadmium	1970	797	LD	LD	LD	LD	LD	.008	.012	.027	.099	.003	.007	--	4.40
	1971	717	LD	LD	LD	LD	LD	.010	.017	.059	.295	.004	.016	--	5.21
	1972	708	LD	LD	LD	LD	LD	.007	.011	.034	.112	.002	.007	--	4.97
	1973	559	LD	LD	LD	LD	LD	LD	.007	.012	.032	.001	.003	--	4.89
	1974	594	LD	LD	LD	LD	LD	.006	.009	.022	.077	.002	.005	--	4.90
	1975	695	LD	LD	LD	LD	LD	.011	.013	.030	.163	.003	.009	.003	4.38

\*For years prior to 1975, if the calculated means were less than the discrimination limit, they were reported as LD. For 1975 the calculated means are reported as calculated without regard to the LD.

\*\*Expressed in ng/m<sup>3</sup>.

(Continued)

TABLE 4-1 (Continued)

Element	Year	No.	Min.	Percentiles							Max.	Arithmetic		Geometric	
				10	30	50	70	90	95	99		Mean	Std. Dev.	Mean	Std. Dev.
Chromium	1970	797	LD	LD	LD	.006	.009	.017	.024	.046	.130	.008	.011	.006	2.80
	1971	717	LD	LD	LD	.007	.010	.019	.026	.057	.171	.009	.014	.008	2.97
	1972	708	LD	LD	.001	.004	.006	.011	.017	.040	.143	.006	.010	.004	3.17
	1973	559	LD	LD	LD	.004	.007	.015	.023	.074	.228	.007	.015	.004	3.62
	1974	594	LD	LD	.003	.005	.007	.012	.015	.035	.073	.006	.006	.005	2.37
	1975	695	LD	.003	.005	.006	.008	.013	.016	.045	.173	.008	.011	.007	2.76
Cobalt	1970	797	LD	LD	LD	LD	LD	LD	LD	LD	.014	--	.001	--	3.11
	1971	717	LD	LD	LD	LD	LD	LD	LD	LD	.085	.001	.003	--	7.05
	1972	708	LD	LD	LD	LD	LD	LD	LD	LD	.042	--	.002	--	5.97
	1973	559	LD	LD	LD	LD	LD	LD	LD	LD	.027	.001	.002	--	4.45
	1974	594	LD	LD	LD	LD	LD	LD	LD	LD	.029	--	.001	--	4.85
	1975	695	LD	LD	LD	LD	LD	LD	.004	.009	.040	.001	.002	.001	4.73
Copper	1970	790	LD	.04	.06	.10	.16	.32	.50	.99	1.51	.15	.18	.10	2.57
	1971	715	LD	.04	.07	.10	.18	.37	.59	1.28	1.56	.18	.22	.11	2.62
	1972	706	LD	.03	.06	.09	.15	.35	.49	1.00	1.57	.16	.19	.10	2.60
	1973	555	LD	.03	.06	.09	.14	.34	.45	.79	1.44	.15	.17	.10	2.49
	1974	590	LD	.04	.08	.11	.17	.36	.51	.78	1.33	.17	.16	.12	2.26
	1975	695	.02	.06	.12	.18	.28	.52	.69	1.42	3.09	.26	.29	.18	2.45
Iron	1970	796	LD	0.6	1.1	1.4	1.9	3.2	4.2	6.4	14.2	1.7	1.3	1.38	1.98
	1971	717	LD	0.8	1.3	1.7	2.3	3.6	4.9	8.1	16.0	2.1	1.6	1.65	1.98
	1972	708	LD	0.5	0.8	1.0	1.4	2.2	2.8	4.1	6.4	1.2	0.8	1.04	1.83
	1973	558	LD	0.4	0.7	0.9	1.2	1.9	2.6	3.8	6.9	1.1	0.8	0.89	1.89
	1974	594	LD	0.4	0.7	0.9	1.2	1.9	2.4	3.9	6.2	1.1	0.7	0.89	1.87
	1975	695	LD	LD	0.7	1.0	1.3	2.0	2.7	4.5	7.9	1.2	0.8	0.99	1.86

(Continued)

TABLE 4-1 (Continued)

Element	Year	No.	Min.	Percentiles							Max.	Arithmetic Std.		Geometric Std.	
				10	30	50	70	90	95	99		Mean	Dev.	Mean	Dev.
Lead	1970	797	LD	.47	.75	1.05	1.37	2.01	2.59	4.14	5.83	1.19	.80	.99	1.84
	1971	717	LD	.42	.71	1.01	1.42	2.21	2.86	4.38	6.31	1.23	.87	1.00	1.89
	1972	708	LD	.46	.72	.97	1.25	1.93	2.57	3.69	6.88	1.13	.78	.93	1.87
	1973	559	LD	.35	.58	.77	1.05	1.62	2.08	3.03	5.83	.92	.64	.76	1.87
	1974	594	.08	.36	.57	.75	1.00	1.61	1.97	3.16	4.09	.89	.57	.75	1.80
	1975	695	LD	.37	.58	.78	.96	1.54	2.02	3.15	4.94	.89	.59	.74	1.82
Manganese	1970	795	LD	.02	.03	.04	.06	.15	.23	.49	2.10	.07	.12	.04	3.13
	1971	716	LD	.02	.04	.05	.07	.16	.24	.46	1.95	.08	.11	.05	2.81
	1972	708	LD	.01	.02	.03	.04	.09	.12	.22	.86	.04	.06	.03	2.76
	1973	559	LD	.01	.02	.02	.04	.07	.11	.29	.56	.04	.05	.02	2.72
	1974	594	LD	.01	.02	.02	.04	.07	.11	.21	.35	.04	.04	.02	2.39
	1975	695	LD	.01	.02	.03	.04	.07	.10	.18	.72	.04	.04	.02	2.49
Nickel	1970	797	LD	LD	LD	LD	.019	.045	.066	.127	.277	.015	.028	.01	3.41
	1971	717	LD	LD	LD	LD	.018	.045	.064	.126	.347	.015	.028	.01	3.34
	1972	708	LD	LD	LD	LD	.013	.031	.045	.100	.268	.011	.023	.01	3.55
	1973	559	LD	LD	LD	LD	.013	.036	.066	.133	.439	.014	.037	.01	4.19
	1974	594	LD	LD	LD	LD	.012	.026	.034	.057	.639	.009	.029	.001	4.60
	1975	695	LD	LD	LD	.012	.019	.032	.039	.062	.092	.014	.014	.01	2.34
Titanium	1970	797	LD	.02	.03	.04	.06	.09	.12	.18	.26	.05	.03	.04	1.85
	1971	716	LD	LD	LD	.03	.05	.09	.12	.20	.51	.04	.05	.02	2.66
	1972	707	LD	LD	.02	.03	.05	.08	.10	.14	.48	.04	.03	.03	2.21
	1973	559	LD	LD	.02	.04	.05	.08	.10	.14	.23	.04	.03	.03	2.01
	1974	593	LD	LD	.02	.03	.05	.07	.09	.14	.22	.04	.03	.03	2.06
	1975	695	.01	.01	.02	.03	.04	.08	.11	.16	.63	.04	.04	.03	2.35

(Continued)

TABLE 4-1 (Continued)

Element	Year	No.	Min.	Percentiles							Max.	Arithmetic		Geometric	
				10	30	50	70	90	95	99		Mean	Std. Dev.	Mean	Std. Dev.
Vanadium	1970	795	LD	LD	LD	LD	.029	.162	.244	.544	1.222	.052	.116	.020	3.82
	1971	718	LD	LD	LD	LD	.026	.117	.204	.496	1.325	.041	.108	.014	4.20
	1972	708	LD	LD	LD	LD	.075	.100	.195		.858	.022	.056	.006	4.06
	1973	559	LD	LD	LD	LD	.057	.077	.151		.393	.016	.034	.005	3.68
	1974	594	LD	LD	LD	LD	.058	.083	.185		.248	.019	.037	.006	3.51
	1975	695	LD	LD	LD	LD	.020	.050	.069	.152	.296	.018	.031	.015	3.25

TABLE 4-2. NONURBAN NATIONAL CUMULATIVE FREQUENCY DISTRIBUTIONS

Element	Year	No.	Min.	Percentiles							Max.	Arithmetic		Geometric		
				10	30	50	70	90	95	99		Mean	Std. Dev.	Mean	Std. Dev.	
Beryllium*	1970	124	LD	LD	LD	LD	LD	LD	LD	LD	.24	.24	--	.03	--	7.62
	1971	97	LD	LD	LD	LD	LD	LD	LD	LD	.16	.24	.01	.03	--	6.10
	1972	137	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--
	1973	100	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--
	1974	79	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--
	1975	99	LD	LD	LD	LD	LD	LD	LD	.07	.16	.22	.01	.03	.0001	5.58
Cadmium	1970	124	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	.0001	.0000	.0001	1.00
	1971	97	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	.0001	.0000	.0001	1.00
	1972	137	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	.0001	.0000	.0001	1.00
	1973	100	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	.0001	.0000	.0001	1.00
	1974	79	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD	.0002	.0000	.0002	1.00
	1975	98	LD	LD	LD	LD	LD	LD	LD	LD	.0128	.0144	.0005	.0022	.0005	5.40
Chromium	1970	124	LD	LD	LD	LD	LD	.007	.017	.042	.075	.003	.009	--	4.60	
	1971	97	LD	LD	LD	LD	.005	.007	.011	.034	.061	.004	.007	--	3.48	
	1972	137	LD	LD	LD	LD	.002	.005	.006	.009	.039	.002	.004	--	3.58	
	1973	100	LD	LD	LD	LD	.001	.007	.017	.039	.066	.003	.009	--	4.16	
	1974	79	LD	LD	LD	LD	.002	.005	.008	.009	.009	.002	.002	--	2.67	
	1975	98	LD	LD	LD	.003	.004	.007	.008	.011	.014	.003	.003	.0029	2.29	
Cobalt	1970	124	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--	
	1971	97	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--	
	1972	137	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--	
	1973	100	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--	
	1974	79	LD	LD	LD	LD	LD	LD	LD	LD	LD	--	--	--	--	
	1975	98	LD	LD	LD	LD	LD	LD	LD	LD	.005	.006	.002	.001	.0014	3.19

\*Expressed in ng/m<sup>3</sup>

(Continued)

TABLE 4-2 (Continued)

Element	Year	No.	Min.	Percentiles							Max.	Arithmetic		Geometric	
				10	30	50	70	90	95	99		Mean	Std. Dev.	Mean	Std. Dev.
Copper	1970	124	LD	.029	.056	.081	.164	.342	.526	1.053	1.195	.158	.188	.081	2.56
	1971	96	.014	.029	.086	.141	.208	.495	.648	.785	.880	.205	.196	.150	2.24
	1972	137	LD	.025	.058	.116	.193	.377	.660	.804	.812	.178	.183	.116	2.33
	1973	99	.011	.035	.075	.119	.219	.440	.571	.849	.983	.196	.196	.138	2.30
	1974	78	.023	.039	.081	.124	.238	.461	.643	.860	1.147	.208	.210	.147	2.31
	1975	98	.014	.066	.122	.176	.312	.627	1.040	3.717	4.068	.364	.637	.180	3.26
Iron	1970	124	LD	.13	.22	.32	.45	.68	.85	1.58	1.62	.38	.27	.31	1.90
	1971	97	.07	.18	.27	.43	.63	.90	1.04	1.52	2.80	.51	.38	.41	1.95
	1972	137	LD	.05	.12	.19	.31	.56	.68	1.06	1.15	.25	.22	.19	2.11
	1973	99	.01	.02	.11	.16	.21	.34	.47	.88	1.19	.19	.18	.14	2.19
	1974	79	LD	.04	.12	.19	.28	.47	.55	.65	.69	.24	.17	.19	1.92
	1975	98	LD	LD	LD	LD	LD	LD	LD	LD	.67	.99	.23	.16	.19
Lead	1970	124	LD	LD	LD	LD	LD	.267	.383	.628	1.471	.088	.190	.040	3.72
	1971	85	LD	LD	LD	LD	LD	.127	.204	.783	1.134	.047	.155	.008	4.80
	1972	137	LD	LD	LD	.107	.166	.294	.392	.950	1.048	.139	.169	.090	2.59
	1973	100	LD	LD	LD	.132	.233	.392	.698	.939	.939	.110	.149	.068	2.77
	1974	79	LD	LD	.053	.087	.141	.221	.317	.496	.534	.111	.111	.083	2.30
	1975	98	LD	LD	LD	.144	.255	.311	.431	.649	.649	.085	.126	.054	2.95
Manganese	1970	124	LD	.003	.006	.012	.018	.035	.041	.066	.068	.015	.013	.012	2.11
	1971	97	LD	.003	.009	.013	.022	.032	.041	.064	.102	.018	.015	.013	2.09
	1972	137	LD	LD	LD	.003	.007	.016	.029	.039	.046	.007	.009	.003	2.81
	1973	100	LD	LD	LD	.002	.004	.011	.022	.030	.030	.004	.005	.002	2.79
	1974	79	LD	LD	.001	.004	.007	.017	.023	.027	.033	.006	.007	.004	2.52
	1975	98	LD	LD	.004	.006	.009	.014	.018	.031	.040	.007	.007	.015	2.19

(Continued)

TABLE 4-2 (Continued)

Element	Year	No.	Min.	Percentiles							Max.	Arithmetic		Geometric	
				10	30	50	70	90	95	99		Mean	Std. Dev.	Mean	Std. Dev.
Nickel	1970	124	LD	LD	LD	LD	LD	.019	.024	.076	.097	.005	.014	.001	4.58
	1971	97	LD	LD	LD	LD	LD	LD	LD	.046	.083	.003	.011	.001	5.28
	1972	137	LD	LD	LD	LD	LD	.009	.015	.076	.082	.004	.012	.001	4.64
	1973	100	LD	LD	LD	LD	LD	.014	.059	.188	.280	.011	.037	.001	4.93
	1974	79	LD	LD	LD	LD	LD	LD	.006	.020	.026	.002	.004	.001	3.62
	1975	98	LD	LD	LD	LD	LD	.015	.024	.036	.105	.005	.013	.0045	4.16
Titanium	1970	124	LD	LD	.007	.011	.015	.023	.028	.047	.093	.013	.011	.011	2.15
	1971	97	LD	LD	LD	LD	.028	.042	.049	.065	.069	.017	.020	.010	2.54
	1972	137	LD	LD	.011	.024	.038	.054	.069	.081	.092	.027	.022	.024	2.04
	1973	100	LD	LD	.012	.027	.040	.054	.068	.076	.084	.028	.021	.024	1.93
	1974	78	LD	LD	LD	.016	.026	.043	.049	.053	.066	.020	.017	.014	2.09
	1975	98	LD	LD	.007	.010	.013	.035	.047	.131	.167	.016	.024	.014	2.95
Vanadium	1970	124	LD	LD	LD	LD	LD	.021	.035	.112	.112	.008	.019	.001	4.04
	1971	97	LD	LD	LD	LD	LD	LD	.036	.114	.209	.007	.024	.001	5.04
	1972	137	LD	LD	LD	LD	LD	LD	.025	.047	.205	.004	.019	.001	5.77
	1973	100	LD	LD	LD	LD	LD	LD	LD	.028	.035	LD	.005	.001	3.88
	1974	79	LD	LD	LD	LD	LD	LD	LD	.021	.023	LD	.004	.001	3.36
	1975	98	LD	LD	LD	LD	LD	.017	.020	.027	.036	.004	.007	.006	3.42



## Section 5

### DATA TABLES

The data are arranged by urban and nonurban sites. Each monitoring site is assigned a unique code number as described in the SAROAD Station Coding Manual.\*

Data are presented as quarterly composite and yearly average values expressed in micrograms (nanograms in the case of beryllium) per cubic meter of air. Quarterly composites are judged to be representative and are included in the tables (1) if there are at least five valid filters per quarter and (2) if one month lacks any valid samples, the other two months in that quarter have at least two valid samples. If only one quarterly composite has a "zero" concentration (shown as LD in the data tables), the yearly mean is calculated by replacing the LD with a value equal to one-half the LD shown in Table 2-1. If two or more quarters within a site year are below the analytical discrimination value, the yearly average is not calculated. Prior to the analysis of 1970 samples, the general procedure was to analyze for trace metal concentrations only when the entire year was valid, i.e., all 4 quarters were represented. This practice meant that the tables were complete without blanks. This procedure has been liberalized during the period since 1970 to allow for analyses of any valid quarters for a given station even though the entire year may not be represented.

Data table headings present the bias and precision information from Table 2-2. For example, the headings for beryllium include the following:

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\*Fair, D.H. SAROAD Station Coding Manual. U.S. Environmental Protection Agency, Office of Air Programs, Research Triangle Park, North Carolina. Publication No. APTD-0907. February 1972.

95% Confidence Limits	
Bias (%)	Precision (%)
16	±62

The bias and precision values can be used in equations (5a) and (5b) to compute upper and lower 95 percent confidence limits on the true concentration for a given reported concentration, i.e., for a given quarterly composite value. For example, the confidence limits for a reported beryllium concentration of .84 ng/m<sup>3</sup> would be:

$$\begin{aligned}
 L_u &= X(1 + B/100 + 1.96 C_v/100) && (5a) \\
 &= .84(1 + 16/100 + 62/100) \\
 &= 1.495 \text{ ng/m}^3
 \end{aligned}$$

$$\begin{aligned}
 L_l &= X(1 + B/100 - 1.96 C_v/100) && (5b) \\
 &= .84(1 + 16/100 - 62/100) \\
 &= .454 \text{ ng/m}^3
 \end{aligned}$$

Thus, the interval between .45 ng/m<sup>3</sup> and 1.50 ng/m<sup>3</sup> would be expected to include the true value with a confidence of 95 percent.

POLLUTANT : BERYLLIUM  
 METHOD : HI-VOL FISSION SPECTRA MUFFLE FURNACE  
 UNITS : NG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAM  
 RE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .00006  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 16 PRECISION (%) 42

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	LD	LD	.0723	LD	
GADSDEN SITE 001	75	LD	LD	.1058	LD	
HUNTSVILLE SITE 001	75	LD	LD	LD	LD	
MOBILE SITE 001	75	LD	LD	LD	.1008	
MONTGOMERY SITE 001	75	LD	LD	LD	LD	
ALASKA						
ANCHORAGE SITE 003	75	LD	LD	LD	LD	
FAIRBANKS SITE 001	75	LD	LD	LD	LD	
ARIZONA						
DOUGLAS SITE 004	75	LD	LD	LD	LD	
PHOENIX SITE 002	75	LD	LD	LD	.1519	
TUCSON SITE 001	75	LD	LD	LD	.1073	
ARKANSAS						
EL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	LD	LD	.0874	LD	
TEXARKANA SITE 001	75	.1007	LD	LD	LD	
WEST MEMPHIS SITE 001	75	.1370	LD	LD	LD	
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	LD	LD	LD	.0970	
BERKELEY SITE 001	75	LD	LD	LD	LD	
BURBANK SITE 002	75	LD	LD	LD	LD	
FRESNO SITE 002	75	LD	LD	LD	LD	
GLENDALE SITE 001	75	LD	LD	LD	LD	
LONG BEACH SITE 001	75	LD	LD	.0674	LD	
LOS ANGELES SITE 001	75	LD	LD	LD	.0654	
OAKLAND SITE 001	75	LD	LD	LD	LD	
ONTARIO SITE 001	75	LD	LD	LD	LD	
PASADENA SITE 002	75	LD	LD	LD	LD	
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	LD	LD	LD	LD	
SAN BERNARDINO SITE 001	75	LD	LD	LD	LD	
SAN DIEGO SITE 004	75	LD	LD	LD	LD	
SAN FRANCISCO SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	LD	LD	LD	LD	
SANTA ANA SITE 001	75	LD	LD	LD	LD	
TORRANCE SITE 001	75	LD	LD	LD	LD	
COLORADO						
DENVER SITE 001	75	LD	LD	.0944	LD	
DENVER SITE 002	75	.1652	.0946	LD	.1132	.1310
CONNECTICUT						
BRINGEPORT SITE 001	75	LD	LD	LD	LD	
HARTFORD SITE 002	75	LD	LD	LD	LD	
NEW HAVEN SITE 001	75	LD	LD	LD	LD	
WATERBURY SITE 001	75	LD	LD	LD	LD	
WATERBURY SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	LD	LD	LD	LD	
WILMINGTON SITE 002	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	LD	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	.1015	LD	LD	LD	
MIAMI SITE 002	75	LD	LD	LD	LD	
ST PETERSBURG SITE 002	75	LD	LD	LD	LD	
TAMPA SITE 002	75	LD	LD	LD	LD	
GEORGIA						
ATLANTA SITE 001	75	LD	LD	LD	LD	
COLUMBUS SITE 001	75	LD	LD	LD	LD	
SAVANNAH SITE 001	75	LD	LD	LD	LD	
HAWAII						
MAUNA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	LD	LD	LD	LD	
IDaho						
BOISE CITY SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
BLUE ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	LD	.1018	LD	
EAST ST LOUIS SITE 001	75	LD	LD	LD	LD	
JOLIET SITE 001	75	LD	LD	LD	LD	
MOLINE SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12105 - BERYLLIUM  
 METHOD : HT-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : NG/CMETER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 RE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .00004  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 1A PRECISION (Y) 42

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
CHICAGO NORTH CHICAGO SITE 002	75	LD	LD	LD	LD	
PEORIA SITE 001	75	LD	.2355	.1815	LD	
ROCKFORD SITE 001	75	LD	LD	LD	LD	
ROCK ISLAND SITE 001	75	LD	LD	LD	LD	
SPRINGFIELD SITE 001	75	LD	LD	LD	LD	
INDIANA						
CHICAGO EAST CHICAGO SITE 001	75	.0770	.1561	LD	LD	
EVANSVILLE SITE 001	75	LD	LD	.1177	LD	
FORT WAYNE SITE 002	75	LD	LD	LD	LD	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	.1524	LD	.1903	LD	
HAMMOND SITE 002	75	.0446	.0695	.1461	LD	.1014
INDIANAPOLIS SITE 001	75	.0840	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	.0699	LD	LD	
NEW ALBANY SITE 002	75	LD	LD	.1660	LD	
SOUTH BEND SITE 002	75	LD	LD	.1165	LD	
TERRE HAUTE SITE 001	75	.0813	.1070	.1775	LD	.1186
IOWA						
CECER RAPIDS SITE 018	75	.1068	LD	LD	.0846	
DAVENPORT SITE 001	75	LD	LD	LD	LD	
DES MOINES SITE 001	75	LD	LD	LD	.0597	
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	LD	LD	LD	LD	
DUBUQUE SITE 003	75	LD	LD	LD	.0611	
WATERLOO SITE 004	75	.0695	LD	LD	LD	
WATERLOO SITE 004	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	LD	LD	LD	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	.0814	.0851	.1117	.0818	.0900
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	LD	LD	LD	.0587	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	LD	LD	LD	LD	
KENTUCKY						
ASHLAND SITE 002	75	.1490	.1413	.1157	.1386	.1362
HOWLING GREEN SITE 001	75	LD	LD	LD	LD	
COVINGTON SITE 001	75	.1087	LD	.0900	LD	
LEXINGTON SITE 001	75	.1411	.0944	LD	LD	
LOUISVILLE SITE 002	75	LD	LD	LD	.0673	
LOUISIANA						
BATON ROUGE SITE 002	75	LD	LD	LD	LD	
IRREVILLE PAR SITE 002	75	LD	LD	LD	LD	
NEW ORLEANS SITE 002	75	LD	LD	LD	LD	
SHREVEPORT SITE 001	75	LD	LD	LD	LD	
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	LD	
MARYLAND						
BALTIMORE SITE 001	75	LD	LD	LD	LD	
MASSACHUSETTS						
BOSTON SITE 001	75	LD	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	LD	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	LD	
WORCESTER SITE 004	75	LD	LD	LD	LD	
MICHIGAN						
DEARBORN SITE 001	75	.2337	LD	.0770	LD	
DETROIT SITE 001	75	.1672	.1077	.1042	.0689	.1120
FLINT SITE 003	75	LD	LD	LD	LD	
GRAND RAPIDS SITE 001	75	LD	LD	LD	LD	
LANSING SITE 001	75	LD	LD	.1102	LD	
SAGINAW SITE 001	75	LD	LD	LD	LD	
TRENTON SITE 004	75	LD	LD	LD	LD	
MINNESOTA						
DULUTH SITE 001	75	LD	LD	LD	LD	
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12105 - BERYLLIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : NG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 RE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .00006  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 16 PRECISION (%) +/- 62

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	LD	LD	LD	LD	
MOORHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	LD	LD	LD	LD	
MISSISSIPPI						
JACKSON						
SITE 002	75	.0661	LD	LD	LD	
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	LD	.0867	LD	
ST LOUIS						
SITE 001	75	.0676	.0779	.0856	LD	.0770
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	LD	.4266	
NEBRASKA						
LINCOLN						
SITE 002	75	.0017	.0697	LD	.0602	.0705
OMAHA						
SITE 001	75	.1133	LD	LD	LD	
OMAHA						
SITE 030	75	LD	LD	LD	.0793	
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	.0693	LD	LD	LD	
RENO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	LD	LD	LD	LD	
NEW JERSEY						
BAYONNE						
SITE 001	75	LD	LD	LD	LD	
CAMDEN						
SITE 001	75	.0761	.1116	.0770	LD	.0882
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	LD	LD	.0589	
ELIZABETH						
SITE 002	75	LD	LD	LD	LD	
GLASSBORO						
SITE 001	75	.0032	LD	.0764	LD	
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	.0647	LD	LD	LD	
NEWARK						
SITE 001	75	LD	LD	LD	LD	
PATERSON						
SITE 001	75	LD	LD	LD	LD	
PERTH AMBOY						
SITE 001	75	LD	LD	.0848	LD	
TRENTON						
SITE 001	75	.0671	LD	LD	LD	
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	LD	LD	LD	LD	
RUFFALO						
SITE 001	75	.0002	.0029	LD	.0259	.0697
NEW YORK CITY						
SITE 014	75	LD	LD	LD	LD	
NIAGARA FALLS						
SITE 001	75	.1149	.0702	LD	.0644	.0812
ROCHESTER						
SITE 001	75	.0721	.0598	.0600	.0095	.0686
SYRACUSE						
SITE 001	75	.0908	LD	LD	LD	
UTICA						
SITE 001	75	LD	LD	LD	LD	
YONKERS						
SITE 001	75	LD	.1219	.1218	LD	
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	LD	LD	LD	.0694	
DURHAM						
SITE 001	75	LD	.0645	.0730	LD	
DUPHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	LD	LD	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	LD	
WINSTON-SALEM						
SITE 002	75	.0668	LD	.0735	.1721	.1041
NORTH DAKOTA						
BISMARCK						
SITE 001	75	.0700	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	.3825	.1932	.1511	.0652	.2031
CANTON						
SITE 001	75	.1443	.1272	.0805	LD	.1173
CINCINNATI						
SITE 001	75	.1265	.0905	.1100	LD	.1093
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	.0903	.1212	.0906	LD	.1007
DAYTON						
SITE 001	75	.2185	.2458	.1313	.1473	.1912
SPRINTON						
SITE 009	75	.1668	.1304	.1023	.0446	.1160
MANSFIELD						
SITE 008	75	LD	LD	LD	LD	
POPSMOUTH						
SITE 002	75	.0806	.0788	.0803	LD	.0799
ST. CURENVILLE						
SITE 012	75	LD	LD	.2176	.0895	
TOLEDO						
SITE 001	75	.1114	.0998	.0935	LD	.1016
YOUNGSTOWN						
SITE 001	75	.1209	.1831	.1073	.1428	.1435
OKLAHOMA						
CHEROKEE CO						
SITE 480	75	LD	LD	LD	LD	
TULSA						
SITE 110	75	LD	LD	LD	LD	
OREGON						
FUGENE						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12105 - BERYLLIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : NG/CMETER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URAN  
 RE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .00006  
 95 PERCENT CONFIDENCE LIMIT  
 BIAS (B) 16 PRECISION (R) 62

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CONNECTICUT						
MEDFORD SITE 001	75	LD	LD	LD	LD	
CONNECTICUT						
BRITAIN SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
ALLENTOWN SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
ALTOONA SITE 003	75	.0712	LD	.0618	LD	
INDIANA						
RETMLEHEM SITE 002	75	LD	LD	LD	LD	
INDIANA						
PRIF SITE 002	75	LD	.0971	LD	.0933	
PENNSYLVANIA						
HARRISBURG SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
HARRISBURG SITE 161	75	LD	LD	LD	LD	
PENNSYLVANIA						
HAZLETON SITE 001	75	.1507	LD	LD	LD	
PENNSYLVANIA						
JOHNSTOWN SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
LANCASTER CITY SITE 002	75	LD	LD	LD	LD	
PENNSYLVANIA						
PHILADELPHIA SITE 004	75	.0877	.0965	LD	LD	
PENNSYLVANIA						
PITTSBURGH SITE 001	75	.1802	.1317	.1443	.1124	.1427
PENNSYLVANIA						
READING SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
SCRANTON SITE 001	75	.1687	.1248	.0926	LD	.1287
PENNSYLVANIA						
WARRMINSTER SITE 002	75	.0470	.0871	LD	LD	
PENNSYLVANIA						
WEST CHESTER SITE 110	75	LD	.0650	LD	LD	
PENNSYLVANIA						
WILKES-BARRE SITE 001	75	.1100	.0873	.0923	.0826	.0948
PENNSYLVANIA						
YORK SITE 322	75	.1136	LD	LD	LD	
PENNSYLVANIA						
Puerto Rico						
RAYMON SITE 002	75	LD	LD	LD	LD	
Puerto Rico						
CAYANO SITE 002	75	LD	LD	LD	LD	
Puerto Rico						
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
Puerto Rico						
GUAYANILLA SITE 002	75	LD	LD	.0888	LD	
Puerto Rico						
GUAYANILLA SITE 003	75	LD	LD	LD	LD	
Puerto Rico						
AMELIA SITE 001	75	LD	LD	LD	LD	
Puerto Rico						
PONCE SITE 002	75	LD	LD	.0614	LD	
Puerto Rico						
SEBANA SECA SITE 001	75	LD	LD	LD	LD	
Puerto Rico						
SAN JUAN SITE 001	75	LD	LD	LD	LD	
Puerto Rico						
SAN JUAN SITE 001	75	LD	LD	LD	LD	
Puerto Rico						
Rhode Island						
EAST PROVIDENCE SITE 001	75	.0726	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
PROVIDENCE SITE 001	75	.0936	LD	LD	LD	
SOUTH CAROLINA						
COLUMBIA SITE 001	75	LD	LD	LD	LD	
SOUTH CAROLINA						
GROFNVILLE SITE 001	75	LD	LD	LD	LD	
SOUTH DAKOTA						
SIOUX FALLS SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CHATTANOOGA SITE 001	75	.0592	LD	.0733	.1020	.0785
TENNESSEE						
KNOXVILLE SITE 002	75	.0741	LD	.0649	.0847	.0746
TENNESSEE						
MEMPHIS SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
NASHVILLE SITE 001	75	LD	.0983	LD	LD	
TEXAS						
AMARILLO SITE 002	75	LD	LD	LD	LD	
TEXAS						
AUSTIN SITE 010	75	LD	LD	LD	LD	
TEXAS						
BEAUMONT SITE 001	75	LD	LD	LD	LD	
TEXAS						
CORPUS CHRISTI SITE 001	75	LD	LD	LD	LD	
TEXAS						
DALLAS SITE 002	75	LD	LD	LD	LD	
TEXAS						
EL PASO SITE 002	75	.1456	LD	LD	LD	.0482
TEXAS						
FORT WORTH SITE 001	75	LD	LD	LD	LD	
TEXAS						
HOUSTON SITE 001	75	LD	LD	LD	LD	
TEXAS						
LUBROCK SITE 001	75	LD	LD	LD	LD	
TEXAS						
PASADENA SITE 002	75	.0796	LD	LD	LD	
TEXAS						
SAN ANTONIO SITE 034	75	LD	LD	LD	LD	
TEXAS						
WICHITA FALLS SITE 002	75	LD	LD	LD	LD	
UTAH						
OGDEN SITE 001	75	LD	LD	.0848	LD	
UTAH						
SALT LAKE CITY SITE 001	75	.0715	.0702	LD	.0697	.0671
VERMONT						
BURLINGTON SITE 003	75	LD	LD	LD	.0844	
VIRGINIA						
DANVILLE SITE 001	75	.1670	.1675	LD	.3200	.2142
VIRGINIA						
MCFEAN SITE 001	75	LD	LD	LD	LD	
VIRGINIA						
HAMPTON SITE 001	75	LD	LD	LD	LD	.0641
VIRGINIA						
LYNCHBURG SITE 001	75	.0883	.0635	LD	.0687	.0735
VIRGINIA						
LYNCHBURG SITE 002	75	LD	LD	.1020	LD	
VIRGINIA						
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12105 - BERYLLIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : µG/CMETER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 BE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .00006  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (R) 1A PRECISION (R) +/- A2

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
ARIZONA						
HERICOPA CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	LD	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MESA VERDE NAT PAR						
SITE 002	75	LD	LD	LD	LD	
DELAWARE						
KENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	LD	
FLORIDA						
HARDEE CO						
SITE 001	75	LD	LD	LD	LD	
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BUTTE CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.0636	LD	LD	LD	
INDIANA						
MONROE CO						
SITE 001	75	LD	LD	.1143	LD	
PARKE CO						
SITE 001	75	LD	LD	LD	LD	
IRREVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	LD	LD	LD	LD	
MARYLAND						
CALVERT CO						
SITE 001	75	LD	LD	LD	LD	
MISSISSIPPI						
JACKSON CO						
SITE 001	75	LD	LD	LD	LD	
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	LD	LD	LD	LD	
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	LD	LD	
FORT HOWES						
SITE 008	75	LD	LD	LD	LD	
ASHLAND						
SITE 026	75	LD	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
COOS CO						
SITE 001	75	LD	.1559	.2223	LD	
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	LD	LD	LD	LD	
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
RUXTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0723	LD	.0712	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	.0910	LD	.1131	.1065	.1015
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	.1306	.1144	
OREGON						
CURRY CO						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	.0703	LD	LD	LD	
INDIANA CO						
SITE 002	75	.1552	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	LD	LD	LD	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	LD	LD	LD	LD	
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	LD	LD	LD	LD	
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
MATAGORDA CO						
SITE 001	75	LD	LD	LD	LD	
TOM GREFFN CO						
SITE 001	75	LD	LD	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	LD	LD	LD	LD	
VIRGINIA						
SHEMANOAH NAT PAR						
SITE 001	75	LD	LD	LD	LD	
WYTHE CO						
SITE 001	75	.0719	LD	LD	LD	
WASHINGTON						
KING CO						
SITE 002	75	LD	LD	LD	LD	



POLLUTANT : BERYLLIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : NG/CU METER (75 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 RE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) 0.0006  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 16 PRECISION (%) 67

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN DOOR CO SITE 001	75	LD	LD	LD	LD	
WYOMING GRAND TETON NAT PA SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA SITE 001	75	LD	LD	LD	LD	
VIRGIN ISLANDS ST THOMAS SITE 002	75	LD	LD	LD	LD	
ST CROIX SITE 004	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

POLLUTANT : 12110 - CADMIUM  
 METHOD : HJ-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 L)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CD

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0064  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 9 PRECISION (Z) +- 46

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	LD	LD	LD	LD	
CADSDEN SITE 001	75	LD	LD	LD	LD	
HUNTSVILLE SITE 001	75	LD	LD	LD	LD	
MOBILE SITE 001	75	.0078	LD	LD	LD	
MONTGOMERY SITE 001	75	LD	LD	LD	LD	
ALASKA						
ANCHORAGE SITE 003	75	LD	LD	LD	LD	
FAIRBANKS SITE 001	75	LD	LD	LD	LD	
ARIZONA						
DOUGLAS SITE 004	75	.0093	.0076	LD	LD	
PHOENIX SITE 002	75	LD	.0430	LD	LD	
TUCSON SITE 001	75	.0101	.0184	.0115	LD	.0133
ARKANSAS						
FL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	LD	LD	LD	.0082	
TEXARKANA SITE 001	75	.0127	LD	LD	LD	
WEST MEMPHIS SITE 001	75	.0108	LD	LD	LD	
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	LD	LD	LD	.0118	
BERKELEY SITE 001	75	LD	LD	.0092	.0096	
BURBANK SITE 002	75	LD	LD	LD	LD	
FRESNO SITE 002	75	LD	LD	LD	LD	
GLENDALE SITE 001	75	LD	LD	LD	LD	
LONG BEACH SITE 001	75	LD	LD	LD	LD	
LOS ANGELES SITE 001	75	LD	LD	LD	LD	
OAKLAND SITE 001	75	LD	LD	LD	LD	
ONTARIO SITE 001	75	LD	LD	LD	LD	
PASADENA SITE 002	75	LD	LD	LD	LD	
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	LD	LD	LD	LD	
SAN BERNARDINO SITE 001	75	LD	.0112	LD	LD	
SAN DIEGO SITE 004	75	LD	LD	LD	LD	
SAN FRANCISCO SITE 001	75	LD	LD	.0073	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	.0067	LD	.0112	LD	
SANTA ANA SITE 001	75	LD	.0122	LD	.0099	
TORRANCE SITE 001	75	.0117	.0112	LD	.0076	.0102
COLORADO						
DENVER SITE 001	75	LD	LD	.0074	LD	
DENVER SITE 002	75	.0155	LD	.0084	LD	
CONNECTICUT						
BRIDGEPORT SITE 001	75	.0118	.0136	LD	.0119	.0124
HARTFORD SITE 002	75	LD	.0069	LD	LD	
NEW HAVEN SITE 001	75	LD	.0110	.0108	.0095	.0104
WATERBURY SITE 001	75	.1626	.0402	.0122	LD	.0717
WATERBURY SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	LD	LD	LD	LD	
WILMINGTON SITE 002	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	LD	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	LD	LD	LD	LD	
MIAMI SITE 002	75	LD	LD	LD	LD	
ST PETERSBURG SITE 002	75	LD	LD	LD	LD	
TAMPA SITE 002	75	LD	LD	LD	LD	
GEORGIA						
ATLANTA SITE 001	75	LD	LD	LD	LD	
COLUMBUS SITE 001	75	LD	LD	LD	LD	
SAVANNAH SITE 001	75	LD	LD	LD	LD	
HAWAII						
MAUNA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	LD	LD	LD	LD	
IDAHO						
BOISE CITY SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
BLUE ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	LD	.0114	.0102	
EAST ST LOUIS SITE 001	75	LD	LD	.0113	.0250	
JOLIET SITE 001	75	LD	LD	LD	LD	
MOLINE SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12110 - CADMIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/GU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CD

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0064  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 9 PRECISION (X) +- 46

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	LD	LD	LD	.0068	
PEORIA SITE 001	75	LD	LD	.0090	.0085	
POCKFORD SITE 001	75	.0102	.0081	LD	.0297	.0160
ROCK ISLAND SITE 001	75	LD	LD	LD	LD	
SPRINGFIELD SITE 001	75	LD	LD	LD	.0107	
INDIANA						
EAST CHICAGO SITE 001	75	.0131	.0109	LD	.0090	.0110
EVANSVILLE SITE 001	75	LD	LD	LD	LD	
FORT WAYNE SITE 002	75	LD	LD	LD	.0085	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	LD	LD	.0093	.0111	
HAMMOND SITE 002	75	.0069	.0066	LD	.0099	.0085
INDIANAPOLIS SITE 001	75	.0220	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	LD	.0120	LD	
NEW ALBANY SITE 002	75	LD	LD	LD	.0117	
SOUTH BEND SITE 002	75	LD	LD	LD	.0083	
TERRE HAUTE SITE 001	75	LD	LD	LD	.0101	
IOWA						
CEDAR RAPIDS SITE 018	75	LD	LD	LD	LD	
DAVENPORT SITE 001	75	.0259	LD	LD	LD	
DES MOINES SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	LD	LD	LD	LD	
DUBUQUE SITE 008	75	LD	LD	LD	LD	
WATERLOO SITE 004	75	LD	LD	LD	LD	
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	LD	LD	LD	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	LD	.0083	LD	LD	
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	LD	LD	LD	LD	
KENTUCKY						
ASHLAND SITE 002	75	.0066	LD	LD	LD	
BOWLING GREEN SITE 001	75	LD	LD	LD	LD	
COVINGTON SITE 001	75	LD	LD	LD	LD	
LEXINGTON SITE 001	75	LD	LD	LD	LD	
LOUISVILLE SITE 002	75	LD	LD	LD	LD	
LOUISIANA						
BATON ROUGE SITE 002	75	LD	LD	LD	LD	
IBERVILLE PAR SITE 002	75	LD	LD	LD	LD	
NEW ORLEANS SITE 002	75	LD	LD	LD	LD	
SHREVEPORT SITE 001	75	LD	LD	LD	LD	
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	LD	
MARYLAND						
BALTIMORE SITE 001	75	LD	LD	LD	LD	
MASSACHUSETTS						
BOSTON SITE 001	75	LD	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	LD	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	LD	
WORCESTER SITE 004	75	LD	LD	.0075	LD	
MICHIGAN						
DEARBORN SITE 001	75	.0106	LD	LD	.0084	
DETROIT SITE 001	75	LD	.0077	LD	.0073	
FLINT SITE 008	75	LD	LD	LD	LD	
GRAND RAPIDS SITE 001	75	LD	.0070	.0074	LD	
LANSING SITE 001	75	.0101	.0114	LD	LD	
SAGINAW SITE 001	75	LD	.0168	.0096	LD	
TRENTON SITE 004	75	LD	LD	LD	.0074	
MINNESOTA						
DULUTH SITE 001	75	.0076	LD	LD	LD	
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12110 - CADMIUM  
 METHOD : NI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU PETER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CD

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0064  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (Z) 9 PRECISION (Z) +- 46

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	LD	LD	.0106	.0070	
WOODHULL						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	LD	LD	.0096	LD	
MISSISSIPPI						
JACKSON						
SITE 002	75	LD	LD	LD	LD	
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	LD	LD	LD	
ST LOUIS						
SITE 001	75	.0074	LD	.0157	.0083	.0105
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	.0107	.0382	
NEBRASKA						
LINCOLN						
SITE 002	75	LD	LD	LD	LD	
OMAHA						
SITE 001	75	LD	LD	LD	LD	
OMAHA						
SITE 030	75	LD	LD	LD	LD	
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
PENNSYLVANIA						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	LD	LD	LD	LD	
NEW JERSEY						
PAYSONE						
SITE 001	75	.0089	LD	.0065	.0103	.0086
CAMDEN						
SITE 001	75	LD	LD	.0101	LD	
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	LD	.0277	.0075	
ELIZABETH						
SITE 002	75	.0090	LD	.0126	.0112	.0109
GLASSBORO						
SITE 001	75	.0119	.0093	.0196	.0095	.0126
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	.0094	LD	.0105	.0067	.0089
NEWARK						
SITE 001	75	.0088	LD	.0071	.0098	.0086
PATERSON						
SITE 001	75	.0074	LD	.0072	LD	
PERTH AMBOY						
SITE 001	75	.0067	LD	.0137	.0100	.0101
TRENTON						
SITE 001	75	LD	LD	.0109	LD	
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	LD	LD	LD	LD	
BUFFALO						
SITE 001	75	LD	LD	LD	.0083	
NEW YORK CITY						
SITE 014	75	LD	.0115	.0080	.0078	.0091
NIAGARA FALLS						
SITE 001	75	LD	LD	LD	LD	
ROCHESTER						
SITE 001	75	LD	LD	LD	.0077	
SYRACUSE						
SITE 001	75	LD	LD	LD	LD	
UTICA						
SITE 001	75	LD	LD	LD	LD	
YONKERS						
SITE 001	75	LD	.0064	.0114	LD	
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	LD	LD	LD	LD	
DURHAM						
SITE 001	75	LD	LD	LD	LD	
DURHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	LD	LD	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	LD	
WINSTON-SALEM						
SITE 002	75	.0080	LD	LD	LD	
NORTH DAKOTA						
BISMARCK						
SITE 001	75	LD	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	LD	LD	LD	LD	
CANTON						
SITE 001	75	LD	LD	.0082	LD	
CINCINNATI						
SITE 001	75	LD	LD	LD	.0067	
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	.0076	LD	.0067	.0146	.0096
DAYTON						
SITE 001	75	LD	LD	LD	.0116	
IRONTON						
SITE 009	75	LD	LD	LD	LD	
MANSFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	LD	LD	LD	LD	
STEUBENVILLE						
SITE 012	75	LD	LD	.0122	LD	
TOLEDO						
SITE 001	75	LD	LD	LD	LD	
YOUNGSTOWN						
SITE 001	75	LD	.0076	LD	LD	
OKLAHOMA						
CHEROKEE CO						
SITE 480	75	.0165	LD	LD	LD	
TULSA						
SITE 110	75	LD	.0135	LD	LD	
OREGON						
EUGENE						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12110 - CADMIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CD

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0064  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 9 PRECISION (X) +- 46

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
OREGON						
MEDFORD						
SITE 001	75	LD	LD	LD	LD	
PORTLAND						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
ALLENTOWN						
SITE 001	75	.0096	.0067	.0186	.0081	.0108
ALTOONA						
SITE 001	75	LD	LD	LD	LD	
ELZHEMER						
SITE 002	75	LD	LD	LD	LD	
ERIE						
SITE 002	75	LD	LD	LD	.0140	
HARRISBURG						
SITE 001	75	LD	LD	LD	LD	
HARRISBURG						
SITE 361	75	LD	LD	LD	LD	
HAZLETON						
SITE 001	75	.0067	LD	LD	.0200	
JOHNSTOWN						
SITE 803	75	LD	LD	LD	LD	
LANCASTER CITY						
SITE 002	75	LD	LD	LD	LD	
PHILADELPHIA						
SITE 004	75	LD	.0084	LD	LD	
PITTSBURGH						
SITE 001	75	.0102	.0067	LD	.0094	.0088
READING						
SITE 001	75	LD	.0098	LD	LD	
SCRANTON						
SITE 001	75	.0075	.0133	.0076	LD	.0095
WARMINSTER						
SITE 002	75	LD	LD	.0104	LD	
WEST CHESTER						
SITE 110	75	LD	LD	.0077	LD	
WILKES-BARRE						
SITE 001	75	LD	.0130	LD	LD	
YORK						
SITE 322	75	LD	LD	LD	LD	
PUERTO RICO						
BAYAMON						
SITE 002	75	LD	LD	LD	LD	
CATANO						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 003	75	LD	LD	LD	LD	
AMELIA						
SITE 001	75	LD	LD	LD	LD	
PONCE						
SITE 002	75	.0069	LD	LD	.0094	
SEBANA SECA						
SITE 001	75	LD	LD	LD	.0091	
SAN JUAN						
SITE 001	75	LD	LD	LD	LD	
SAN JUAN						
SITE 001	75	LD	LD	LD	.0095	
RHODE ISLAND						
EAST PROVIDENCE						
SITE 001	75	.0087	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE						
SITE 001	75	.0083	LD	LD	.0075	
SOUTH CAROLINA						
COLUMBIA						
SITE 001	75	.0095	.0161	LD	.0096	.0117
GREENVILLE						
SITE 001	75	LD	LD	LD	LD	
SOUTH DAKOTA						
SIOUX FALLS						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CHATTANOOGA						
SITE 001	75	LD	LD	LD	LD	
KNOXVILLE						
SITE 002	75	LD	LD	LD	LD	
MEMPHIS						
SITE 001	75	LD	LD	LD	LD	
NASHVILLE						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
AMARILLO						
SITE 002	75	LD	LD	LD	LD	
AUSTIN						
SITE 010	75	LD	LD	LD	LD	
BEAUMONT						
SITE 001	75	LD	LD	LD	LD	
CORPUS CHRISTI						
SITE 001	75	.0142	LD	.0114	LD	
DALLAS						
SITE 002	75	LD	LD	LD	LD	
EL PASO						
SITE 002	75	.0948	.0698	.0115	.0430	.0548
FORT WORTH						
SITE 001	75	LD	LD	LD	LD	
HOUSTON						
SITE 001	75	LD	LD	LD	LD	
LUBBOCK						
SITE 001	75	LD	LD	.0137	LD	
PASADENA						
SITE 002	75	LD	LD	LD	LD	
SAN ANTONIO						
SITE 034	75	LD	LD	LD	LD	
WICHITA FALLS						
SITE 002	75	LD	LD	LD	LD	
UTAH						
OGDEN						
SITE 001	75	LD	LD	LD	.0089	
SALT LAKE CITY						
SITE 001	75	LD	LD	LD	LD	
VERMONT						
BURLINGTON						
SITE 003	75	LD	.0239	LD	LD	
VIRGINIA						
DANVILLE						
SITE 001	75	LD	LD	LD	LD	
MCLEAN						
SITE 001	75	LD	LD	LD	LD	
HAMPTON						
SITE 001	75	.0066	LD	LD	LD	
LYNCHBURG						
SITE 001	75	LD	LD	LD	.0065	
LYNCHBURG						
SITE 002	75	LD	LD	LD	LD	
NEWPORT NEWS						
SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12110 - CADMIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 CD

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0049  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 9 PRECISION (%) 4.4

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	LD	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MESA VERDE NAT PAR						
SITE 002	75	LD	LD	LD	LD	
DELAWARE						
KENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	LD	
FLORIDA						
HARDEE CO						
SITE 001	75	LD	LD	.0144	LD	
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BLAINE CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	LD	LD	LD	LD	
INDIANA						
MONROE CO						
SITE 001	75	LD	LD	LD	.0084	
PARKE CO						
SITE 001	75	LD	LD	LD	LD	
IRRVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.0065	LD	LD	LD	
MARYLAND						
CALVERT CO						
SITE 001	75	LD	LD	LD	LD	
MISSISSIPPI						
JACKSON CO						
SITE 001	75	LD	LD	LD	LD	
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	LD	LD	LD	LD	
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	LD	LD	
FORT HOWES						
SITE 008	75	LD	LD	LD	LD	
ASHLAND						
SITE 076	75	LD	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
COOS CO						
SITE 001	75	LD	LD	LD	LD	
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	LD	LD	LD	LD	
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
BUXTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0093	LD	LD	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	.0198	
OREGON						
CURRY CO						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	LD	LD	LD	LD	
INDIANA CO						
SITE 002	75	LD	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.0065	LD	LD	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	LD	LD	LD	LD	
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	LD	LD	LD	LD	
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
HATAGORDA CO						
SITE 001	75	LD	LD	LD	LD	
TOW GREEN CO						
SITE 001	75	LD	LD	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	LD	LD	LD	LD	
VIRGINIA						
SHENANDOAH NAT PAR						
SITE 001	75	LD	LD	LD	LD	
WYTHE CO						
SITE 001	75	LD	LD	LD	LD	
WASHINGTON						
KING CO						
SITE 002	75	LD	LD	LD	LD	

POLLUTANT : 12110 - CADMIUM  
 METHOD : WI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URRAN  
 CD

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0064  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 9 PRECISION (%) +/- 46

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN						
DOOR CO						
SITE 001	75	LD	LD	LD	LD	
WYOMING						
GRAND TETON NAT PA						
SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA						
SITE 001	75	LD	LD	LD	LD	
VIRGIN ISLANDS						
ST THOMAS						
SITE 002	75	LD	LD	LD	LD	
ST CROIX						
SITE 004	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.



POLLUTANT : 12112 - CHROMIUM  
 METHOD : HI-VAL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : .0027  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 21 PRECISION (%) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM						
SITE 001	75	.0050	.0055	.0077	LD	.0061
GADSDEN						
SITE 001	75	.0043	.0045	.0058	LD	.0049
HUNTSVILLE						
SITE 001	75	.0040	LD	.0045	.0050	.0045
MORILE						
SITE 001	75	.0051	.0048	LD	.0063	.0054
MONTGOMERY						
SITE 001	75	LD	.0044	.0032	.0070	.0049
ALASKA						
ANCHORAGE						
SITE 001	75	LD	.0070	.0058	.0061	.0063
FAIRBANKS						
SITE 001	75	.0046	LD	LD	.0033	
ARIZONA						
DOUGLAS						
SITE 004	75	.0055	.0035	LD	LD	
PHOENIX						
SITE 002	75	.0080	.0058	LD	.0095	.0081
TUCSON						
SITE 001	75	.0043	.0035	.0041	.0064	.0046
ARKANSAS						
EL DORADO						
SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK						
SITE 001	75	.0033	.0056	.0066	.0046	.0050
TEXARKANA						
SITE 001	75	.0105	.0080	LD	.0070	.0085
WEST MEMPHIS						
SITE 001	75	.0095	.0058	.0052	LD	.0068
WEST MEMPHIS						
SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM						
SITE 001	75	.0056	.0041	.0055	.0045	.0064
BERKELEY						
SITE 001	75	.0071	LD	.0063	.0075	.0070
BURBANK						
SITE 002	75	.0110	.0091	.0079	.0120	.0090
FRESNO						
SITE 002	75	.0073	.0033	.0082	.0070	.0065
GLENDALE						
SITE 001	75	LD	LD	.0058	.0077	
LONG BEACH						
SITE 001	75	.0096	.0058	.0078	.0083	.0079
LOS ANGELES						
SITE 001	75	LD	.0082	.0070	.0121	.0091
OAKLAND						
SITE 001	75	.0067	.0047	.0071	.0133	.0080
ONTARIO						
SITE 001	75	.0109	LD	LD	LD	
PASADENA						
SITE 002	75	.0094	.0063	.0083	.0068	.0077
RIVERSIDE						
SITE 001	75	LD	LD	LD	LD	
SACRAMENTO						
SITE 001	75	.0045	LD	.0070	.0054	.0056
SAN BERNARDINO						
SITE 001	75	.0100	.0121	.0123	.0090	.0109
SAN DIEGO						
SITE 004	75	.0074	.0081	.0078	.0069	.0063
SAN FRANCISCO						
SITE 001	75	.0065	LD	.0032	.0054	.0050

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE						
SITE 004	75	.0101	.0072	.0081	.0101	.0089
SANTA ANA						
SITE 001	75	.0047	.0058	.0044	.0144	.0073
TORRANCE						
SITE 001	75	.0124	.0057	.0081	.0160	.0108
COLORADO						
DENVER						
SITE 001	75	LD	.0042	.0098	LD	
DENVER						
SITE 002	75	.0128	.0090	.0059	.0118	.0099
CONNECTICUT						
BRIDGEPORT						
SITE 001	75	.0144	.0150	.0041	.0066	.0100
HARTFORD						
SITE 002	75	.0056	.0080	.0057	.0072	.0066
NEW HAVEN						
SITE 001	75	.0102	.0066	.0062	.0088	.0079
WATERBURY						
SITE 001	75	.0169	.0169	.0084	.0106	.0112
WATERBURY						
SITE 103	75	LD	LD	LD	LD	
DELAWARE						
NEWARK						
SITE 001	75	.0056	.0032	.0052	.0040	.0047
WILMINGTON						
SITE 002	75	.0076	LD	.0087	.0088	.0083
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 001	75	.0088	LD	LD	LD	
FLORIDA						
JACKSONVILLE						
SITE 002	75	.0085	.0054	.0043	.0086	.0067
MIAMI						
SITE 002	75	.0052	.0075	.0057	.0073	.0064
ST PETERSBURG						
SITE 002	75	.0050	.0047	LD	.0041	.0046
TAMPA						
SITE 002	75	LD	LD	.0043	LD	
GEORGIA						
ATLANTA						
SITE 001	75	.0032	.0070	.0052	.0037	.0048
COLUMBUS						
SITE 001	75	.0041	.0038	.0037	LD	.0041
SAVANNAH						
SITE 001	75	.0053	.0035	.0046	.0030	.0041
HAWAII						
MAUNA LOA OBSERV						
SITE 002	75	LD	LD	LD	LD	
HONOLULU						
SITE 001	75	.0043	LD	LD	LD	
IDAHO						
BOISE CITY						
SITE 001	75	LD	LD	.0048	.0040	
ILLINOIS						
BLUE ISLAND						
SITE 001	75	LD	LD	LD	LD	
CHICAGO						
SITE 001	75	LD	.0064	.0130	.0111	.0102
EAST ST LOUIS						
SITE 001	75	LD	LD	.0089	.0093	
JOLIET						
SITE 001	75	.0061	LD	.0095	.0044	.0067
MOLINE						
SITE 001	75	.0064	.0053	.0103	.0036	.0064

POLLUTANT : 12112 - CHROMIUM  
 METHOD : HE-VOL EMISSION SPECTRA MUFFLE FURNACE  
 METERS : DRYED METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

SPRAY  
 CR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0027  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 21 PRECISION (Y) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
FOREN CHICAGO SITE 002	75	.0057	LD	.0059	LD	
GEORGIA						
SITE 001	75	.0064	.0114	.0145	.0088	.0101
ROCKFORD						
SITE 001	75	.0041	.0038	LD	.0037	.0039
ROCK ISLAND						
SITE 001	75	.0050	.0052	.0068	.0075	.0061
SPRINGFIELD						
SITE 001	75	.0041	.0032	LD	.0053	.0042
INDIANA						
EAST CHICAGO SITE 001	75	.0289	.0411	LD	.0450	.0383
EVANSVILLE						
SITE 001	75	.0196	.0038	.0073	.0050	.0092
FORT WAYNE						
SITE 002	75	LD	.0077	LD	.0060	
FORT WAYNE						
SITE 003	75	LD	LD	LD	LD	
GARY						
SITE 001	75	.0465	LD	.0165	.0145	.0258
HAMMOND						
SITE 002	75	.0223	.0187	.0140	.0068	.0155
INDIANAPOLIS						
SITE 001	75	.0068	LD	LD	LD	
INDIANAPOLIS						
SITE 002	75	LD	LD	LD	LD	
MUNCIE						
SITE 001	75	LD	.0196	.0062	LD	
NEW ALBANY						
SITE 002	75	LD	LD	.0093	.0059	
SOUTH BEND						
SITE 002	75	.0089	.0086	.0077	LD	.0084
TERRACE HAUTE						
SITE 001	75	.0064	.0057	.0060	.0084	.0066
INDIANA						
CECILE RAPIDS						
SITE 018	75	.0067	.0074	.0074	.0051	.0067
DAVENPORT						
SITE 001	75	.0054	LD	.0045	.0052	.0050
DES MOINES						
SITE 001	75	.0028	.0038	.0042	.0056	.0041
DURHOE						
SITE 001	75	LD	LD	LD	LD	
DURHOE						
SITE 002	75	LD	.0036	LD	LD	
DURHOE						
SITE 008	75	LD	LD	LD	.0038	
WATERLOO						
SITE 009	75	.0060	.0061	.0039	.0054	.0054
WATERLOO						
SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY						
SITE 002	75	.0040	LD	.0051	LD	
KANSAS CITY						
SITE 011	75	LD	LD	LD	LD	
KANSAS CITY						
SITE 012	75	.0133	.0117	.0115	.0106	.0118
KANSAS CITY						
SITE 015	75	LD	LD	LD	LD	
TOPEKA						
SITE 001	75	.0036	.0033	.0036	.0045	.0038

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA						
SITE 001	75	.0029	LD	.0035	.0064	.0043
KENTUCKY						
ASHLAND						
SITE 002	75	.0112	.0067	.0047	.0052	.0088
BOWLING GREEN						
SITE 001	75	LD	LD	LD	LD	
COVINGTON						
SITE 001	75	.0051	.0033	.0044	LD	.0050
LEXINGTON						
SITE 001	75	.0076	.0055	LD	LD	
LOUISVILLE						
SITE 002	75	.0044	.0049	.0038	.0066	.0049
LOUISIANA						
BATON ROUGE						
SITE 002	75	LD	LD	.0068	.0036	
LOUISVILLE PAR						
SITE 002	75	.0063	LD	.0061	LD	
NEW ORLEANS						
SITE 002	75	.0036	LD	.0048	.0048	.0044
SUPERSPARY						
SITE 001	75	.0060	.0046	.0067	.0083	.0063
MAINE						
PORTLAND						
SITE 004	75	LD	LD	LD	.0046	
MARYLAND						
BALTIMORE						
SITE 001	75	.0704	.0467	.0143	.0400	.0429
MASSACHUSETTS						
BOSTON						
SITE 001	75	.0070	LD	LD	LD	
BOSTON						
SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE						
SITE 001	75	.0046	LD	LD	LD	
FALL RIVER						
SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD						
SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD						
SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD						
SITE 002	75	LD	LD	LD	.0047	
WORCESTER						
SITE 004	75	LD	LD	.0054	.0057	
MICHIGAN						
DEARBORN						
SITE 001	75	.0165	LD	.0105	.0086	.0119
DETROIT						
SITE 001	75	.0134	.0079	.0041	.0091	.0086
FLINT						
SITE 008	75	.0074	LD	LD	.0036	
GRAND RAPIDS						
SITE 001	75	.0050	.0048	.0050	.0061	.0052
LANSING						
SITE 001	75	.0072	.0047	.0097	LD	.0072
SARASOTA						
SITE 001	75	.0030	.0042	.0046	.0042	.0040
TRENTON						
SITE 004	75	LD	LD	.0078	.0051	
MINNESOTA						
DULUTH						
SITE 001	75	.0046	LD	.0043	.0045	.0045
MINNEAPOLIS						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12112 - CHROMIUM  
 MTHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METEP (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0027  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 2) PRECISION (X) +.52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	.0050	.0030	.0064	.0052	.0051
MOORHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	.0064	LD	.0056	.0070	.0065
MISSISSIPPI						
JACKSON						
SITE 002	75	.0058	LD	.0047	.0050	.0052
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	.0073	.0068	LD	
ST LOUIS						
SITE 001	75	.0115	.0103	.0069	.0077	.0091
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	.0042	.0312	
NEBRASKA						
LINCOLN						
SITE 002	75	.0056	.0054	.0050	.0041	.0050
OMAHA						
SITE 001	75	.0083	LD	LD	LD	
OMAHA						
SITE 030	75	LD	.0053	.0054	.0062	.0056
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	.0063	.0036	LD	.0046	.0048
RENO						
SITE 001	75	.0076	.0059	.0045	.0054	.0059
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	.0083	LD	LD	.0039	
NEW JERSEY						
BAYONNE						
SITE 001	75	.0219	LD	.0114	.0199	.0177
CAMDEN						
SITE 001	75	.0107	.0218	.0124	.0165	.0154
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	.0070	.0056	.0071	.0066
ELIZABETH						
SITE 002	75	.0092	.0112	.0054	.0100	.0090
GLASSBORO						
SITE 001	75	.0146	.0042	.0105	.0037	.0083
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	.0323	LD	.0618	.0304	.0415
NEWARK						
SITE 001	75	.0151	LD	.0114	.0146	.0137
PATERSON						
SITE 001	75	.0089	LD	.0058	LD	
PERTH AMBOY						
SITE 001	75	.0063	LD	.0107	.0093	.0088
TRFNTON						
SITE 001	75	.0069	.0058	.0092	.0056	.0069
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	.0057	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	.0049	.0057	.0038	.0047	.0048
BUFFALO						
SITE 001	75	.0086	.0093	.0070	.0077	.0082
NEW YORK CITY						
SITE 014	75	.0091	.0131	.0109	.0087	.0104
NIAGARA FALLS						
SITE 001	75	.0175	.1728	.1283	.0101	.0822
ROCHESTER						
SITE 001	75	.0071	.0046	.0074	.0047	.0065
SYRACUSE						
SITE 001	75	.0090	LD	.0066	.0056	.0071
UTICA						
SITE 001	75	.0088	.0063	.0069	.0170	.0088
YONKERS						
SITE 001	75	.0058	.0159	.0125	.0116	.0115
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	.0051	.0034	.0040	.0049	.0044
DURHAM						
SITE 001	75	LD	.0042	.0073	LD	
DURHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	.0044	.0045	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	.0078	
WINSTON-SALFM						
SITE 002	75	.0037	.0029	.0032	.0042	.0035
NORTH DAKOTA						
RISMARCK						
SITE 001	75	.0002	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	.0143	.0075	.0093	.0062	.0093
CANTON						
SITE 001	75	.0285	.0148	.0256	LD	.0230
CINCINNATI						
SITE 001	75	.0082	.0093	.0075	.0049	.0075
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	.0075	.0110	.0090	.0062	.0084
DAYTON						
SITE 001	75	.0092	.0085	.0083	.0099	.0090
FRONTON						
SITE 009	75	.0078	.0049	.0042	.0089	.0065
MANFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	.0051	.0057	.0060	LD	.0056
STUBENVILLE						
SITE 012	75	LD	LD	.1181	.0144	
TOLDO						
SITE 001	75	.0085	.0076	.0061	LD	.0074
YOUNGSTOWN						
SITE 001	75	.0085	.0108	.0141	.0102	.0109
OKLAHOMA						
CHEROKEE CO						
SITE 480	75	LD	LD	LD	LD	
TULSA						
SITE 110	75	.0091	.0051	LD	LD	
OREGON						
EUCLENE						
SITE 001	75	LD	LD	LD	LD	

OCCIDENTAL : 12112 - CHROMIUM  
 METHOD : HI-VAL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 CR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0027  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 21 PRECISION (X) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CONNECTICUT						
MIDDLETOWN SITE 001	75	LD	LD	LD	LD	
PORTLAND SITE 001	75	LD	.0119	.0114	.0094	.0116
PENNSYLVANIA						
ALLENTOWN SITE 001	75	.0067	.0068	.0044	.0044	.0054
ALTOONA SITE 001	75	.0182	LD	.0054	.0049	.0095
BERKELEY SITE 002	75	LD	LD	LD	LD	
COLE SITE 002	75	LD	.0048	.0050	.0073	.0057
HARRISBURG SITE 001	75	LD	LD	LD	LD	
HARRISBURG SITE 361	75	LD	LD	LD	LD	
HAZLETON SITE 001	75	.0081	LD	LD	.0080	
JOHNSTOWN SITE 003	75	LD	LD	LD	LD	
LANCASTER CITY SITE 002	75	LD	LD	LD	.0043	
PHILADELPHIA SITE 004	75	.0090	.0085	.0060	.0069	.0074
PITTSBURGH SITE 001	75	.0167	.0084	.0131	.0077	.0114
READING SITE 001	75	LD	.0059	LD	LD	
SCRANTON SITE 001	75	.0129	.0083	.0133	LD	.0115
WARMINSTER SITE 002	75	.0121	.0168	.0052	LD	.0114
WEST CHESTER SITE 110	75	.0100	.0090	.0077	.0044	.0074
WILKES-BARRE SITE 001	75	.0148	.0067	.0163	.0046	.0106
YORK SITE 322	75	.0248	.0094	.0081	LD	.0141
Puerto Rico						
RAYMOND SITE 002	75	LD	LD	LD	LD	
CATANO SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	.0040	.0059	.0092	.0061	.0063
GUAYANILLA SITE 003	75	LD	LD	LD	LD	
AMELIA SITE 001	75	.0053	LD	.0090	.0049	.0064
PONCE SITE 002	75	LD	LD	.0046	.0054	
SEBANA SECA SITE 001	75	.0058	.0056	.0037	.0069	.0055
SAN JUAN SITE 001	75	LD	LD	LD	LD	
SAN JUAN SITE 001	75	.0049	.0044	.0043	.0048	.0046
Rhode Island						
FAST PROVIDENCE SITE 001	75	.0084	.0047	.0055	LD	.0062

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE SITE 001	75	.0089	LD	.0070	.0047	.0069
SOUTH CAROLINA						
COLUMBIA SITE 001	75	.0052	.0060	.0031	.0049	.0048
GREENVILLE SITE 001	75	.0029	.0045	.0043	LD	.0039
SOUTH DAKOTA						
SIOUX FALLS SITE 001	75	LD	LD	.0044	LD	
TENNESSEE						
CHATTANOOGA SITE 001	75	.0067	.0042	.0094	.0111	.0084
KNOXVILLE SITE 002	75	LD	.0032	.0051	.0094	.0059
MEMPHIS SITE 001	75	.0053	.0071	.0073	.0056	.0063
NASHVILLE SITE 001	75	.0045	.0075	.0057	LD	.0059
TEXAS						
AMARILLO SITE 002	75	LD	LD	LD	LD	
AUSTIN SITE 010	75	.0049	.0019	LD	LD	
BEAUMONT SITE 001	75	LD	LD	.0050	LD	
CORPUS CHRISTI SITE 001	75	.0155	LD	.0099	.0064	.0106
DALLAS SITE 002	75	.0099	.0124	.0124	.0118	.0117
EL PASO SITE 002	75	.0104	.0045	.0043	.0065	.0064
FORT WORTH SITE 001	75	.0059	.0080	.0064	.0059	.0066
HOUSTON SITE 001	75	.0090	.0141	.0144	.0111	.0122
LUBBOCK SITE 001	75	.0049	LD	LD	.0078	
PASADENA SITE 002	75	.0106	.0125	LD	.0171	.0134
SAN ANTONIO SITE 034	75	.0037	LD	LD	LD	
WICHITA FALLS SITE 002	75	.0043	.0048	LD	LD	
UTAH						
OGDEN SITE 001	75	LD	.0033	.0055	.0075	.0054
SALT LAKE CITY SITE 001	75	.0078	.0042	.0059	.0128	.0077
VERMONT						
BURLINGTON SITE 003	75	.0048	LD	.0047	.0060	.0052
VIRGINIA						
DANVILLE SITE 001	75	.0048	.0067	LD	.0038	.0063
MCIFAN SITE 001	75	LD	LD	LD	LD	
HAMPTON SITE 001	75	.0063	.0045	.0055	.0047	.0053
LYNCHBURG SITE 001	75	.0053	.0059	LD	.0052	.0055
LYNCHBURG SITE 002	75	LD	LD	.0057	LD	
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12112 - CHROMIUM  
 METHOD : HI-VOL EMISSION SPECTRA HUFFLE FURNACE  
 UNITS : UG/CH METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 CR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0027  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 21 PRECISION (%) +/- 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
ARIZONA						
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
KANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	.0043	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MEGA VERDE NAT PAR						
SITE 002	75	LD	LD	LD	.0033	
DELAWARE						
DELT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	.0075	
FLORIDA						
HARDEE CO						
SITE 001	75	LD	LD	LD	LD	
FLORIDA						
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 002	75	.0036	LD	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BLAINE CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.0136	.0077	.0112	LD	.0108
INDIANA						
HONROE CO						
SITE 001	75	LD	.0090	.0046	.0036	.0057
INDIANA						
PARK CO						
SITE 001	75	LD	.0072	LD	LD	
INDIANA						
SPRERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.0082	.0066	LD	.0028	.0059
MARYLAND						
CALVERT CO						
SITE 001	75	LD	.0067	LD	.0038	
MISSISSIPPI						
JACKSON CO						
SITE 001	75	.0030	.0044	LD	.0036	.0037
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
MISSOURI						
SHANNON CO						
SITE 002	75	.0030	.0031	.0058	LD	.0039
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	.0044	LD	
MONTANA						
FORT HONES						
SITE 008	75	LD	LD	.0038	LD	
MONTANA						
ASHLAND						
SITE 026	75	.0043	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	.0038	.0028	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINN CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
COOS CO						
SITE 001	75	.0079	.0107	.0138	.0056	.0095
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	.0099	.0042	.0038	LD	.0060
NORTH CAROLINA						
CAMP HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
NORTH CAROLINA						
RUXTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0074	LD	.0075	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	.0089	.0051	.0065	.0061	.0067
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	.0073	.0057	.0096	.0129	.0089
OREGON						
CURRY CO						
SITE 001	75	LD	.0044	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	.0078	LD	LD	LD	
INDIANA CO						
SITE 002	75	.0109	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.0079	LD	.0054	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	.0034	LD	.0033	.0047	.0038
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	LD	LD	LD	.0037	
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	.0032	.0011	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	LD	LD	.0028	.0033	
TEXAS						
MATAGORDA CO						
SITE 001	75	.0030	LD	.0031	.0029	.0030
TOM GREFFN CO						
SITE 001	75	LD	.0050	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	.0080	.0069	.0056	LD	.0068
VIRGINIA						
SHEPARDOWN NAT PAR						
SITE 001	75	LD	LD	LD	LD	
WYTHE CO						
SITE 001	75	.0045	LD	.0029	LD	
WASHINGTON						
KING CO						
SITE 002	75	.0031	.0050	.0063	.0028	.0043

POLLUTANT : 12112 - CHROMIUM  
 METHOD : HI-VOL FISSION SPECTRA MUFFLE FURNACE  
 UNITS : UF/OU METER (25 C)  
 DATA TYP: : QUARTERLY COMPOSITE

NON-URAN  
 CR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0027  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (% ) 21      PRECISION (%) +/- 57

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN						
DOOR CO						
SITE 01	75	LD	LD	LD	LD	
WYOMING						
GRAND TET						
SITE	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA						
SITE 001	75	LD	.0061	LD	LD	
VIRGIN ISLANDS						
ST THOMAS						
SITE 002	75	LD	.0040	.0033	LD	
ST CROIX						
SITE 004	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

POLLUTANT : 12113 - COBALT  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : (UG/CM METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CO

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : .0039  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 14 PRECISION (X) 4.88

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	LD	LD	LD	LD	
MOBILE SITE 001	75	LD	.0053	LD	LD	
HUNTSVILLE SITE 001	75	LD	LD	LD	LD	
MOBILE SITE 001	75	LD	LD	LD	LD	
MONTGOMERY SITE 001	75	LD	LD	LD	LD	
ALASKA						
ANCHORAGE SITE 001	75	LD	LD	LD	LD	
FAIRBANKS SITE 001	75	LD	LD	LD	LD	
ARIZONA						
DOUGLAS SITE 004	75	LD	LD	LD	LD	
PHOENIX SITE 002	75	LD	LD	LD	LD	
TUCSON SITE 001	75	LD	LD	LD	LD	
ARKANSAS						
FL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	LD	LD	LD	LD	
TEXARKANA SITE 001	75	LD	LD	LD	LD	
WEST MEMPHIS SITE 001	75	LD	LD	LD	LD	
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	LD	LD	LD	LD	
BERKELEY SITE 001	75	LD	LD	LD	LD	
BURBANK SITE 002	75	LD	LD	LD	LD	
FRESNO SITE 002	75	LD	LD	LD	LD	
GLENDALE SITE 001	75	LD	LD	LD	LD	
LONG BEACH SITE 001	75	LD	LD	LD	LD	
LOS ANGELES SITE 001	75	LD	LD	LD	LD	
OAKLAND SITE 001	75	LD	LD	LD	LD	
ONTARIO SITE 001	75	LD	LD	LD	LD	
PASADENA SITE 002	75	.0045	LD	LD	LD	
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	LD	LD	LD	LD	
SAN BERNARDINO SITE 001	75	LD	LD	LD	LD	
SAN DIEGO SITE 004	75	LD	LD	LD	LD	
SAN FRANCISCO SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	LD	LD	LD	LD	
SANTA ANA SITE 001	75	LD	LD	LD	LD	
TORRANCE SITE 001	75	LD	LD	LD	.0078	
COLORADO						
DENVER SITE 001	75	LD	LD	LD	LD	
DENVER SITE 002	75	.0049	.0055	LD	LD	
CONNECTICUT						
BRIDGEPORT SITE 001	75	LD	LD	LD	LD	
HARTFORD SITE 002	75	LD	LD	LD	LD	
NEW HAVEN SITE 001	75	.0066	LD	LD	LD	
WATERBURY SITE 001	75	LD	LD	LD	LD	
WATERBURY SITE 103	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	.0396	.0105	LD	LD	
WILMINGTON SITE 002	75	LD	LD	LD	.0065	
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	LD	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	.0050	LD	LD	LD	
MIAMI SITE 002	75	LD	LD	LD	LD	
ST PETERSBURG SITE 002	75	LD	LD	LD	LD	
TAMPA SITE 002	75	LD	LD	LD	LD	
GEORGIA						
ATLANTA SITE 001	75	LD	LD	LD	LD	
COLUMBUS SITE 001	75	LD	LD	LD	LD	
SAVANNAH SITE 001	75	LD	LD	LD	LD	
HAWAII						
MAIHA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	LD	LD	LD	LD	
IDAHOO						
BOISE CITY SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
BLUE ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	LD	LD	LD	.0059
EAST ST LOUIS SITE 001	75	LD	LD	LD	LD	
JOLIET SITE 001	75	LD	LD	LD	LD	
MOIINE SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12113 - COBALT  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CO

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0039  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 14 PRECISION (%) 48

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	LD	LD	LD	LD	
PEORIA SITE 001	75	LD	LD	LD	LD	.0095
ROCKFORD SITE 001	75	LD	LD	LD	LD	
ROCK ISLAND SITE 001	75	LD	LD	LD	LD	
SPRINGFIELD SITE 001	75	LD	LD	LD	LD	
INDIANA						
EAST CHICAGO SITE 001	75	LD	LD	LD	LD	.0091
EVANSVILLE SITE 001	75	LD	LD	LD	LD	.0087
FORT WAYNE SITE 002	75	LD	LD	LD	LD	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	LD	LD	LD	LD	
HAMMOND SITE 002	75	LD	LD	LD	LD	
INDIANAPOLIS SITE 001	75	LD	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	LD	LD	LD	
NEW ALBANY SITE 002	75	LD	LD	LD	LD	
SOUTH BEND SITE 002	75	LD	LD	LD	LD	
TERRE HAUTE SITE 001	75	LD	LD	LD	LD	
IOWA						
CEDAR RAPIDS SITE 018	75	LD	LD	LD	LD	
DAVENPORT SITE 001	75	LD	LD	LD	LD	
DES MOINES SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	LD	LD	LD	LD	
DUBUQUE SITE 008	75	LD	LD	LD	LD	
WATERLOO SITE 004	75	LD	LD	LD	LD	
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	LD	LD	LD	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	LD	LD	LD	LD	
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	LD	LD	LD	LD	
KENTUCKY						
ASHLAND SITE 002	75	LD	LD	LD	LD	
BOWLING GREEN SITE 001	75	LD	LD	LD	LD	
COVINGTON SITE 001	75	LD	LD	LD	LD	
LEXINGTON SITE 001	75	LD	LD	LD	LD	
LOUISVILLE SITE 002	75	LD	LD	LD	LD	
LOUISIANA						
BATON ROUGE SITE 002	75	LD	LD	LD	LD	
IRRVILLE PAR SITE 002	75	LD	LD	LD	LD	
NEW ORLEANS SITE 002	75	LD	LD	LD	LD	
SHREVEPORT SITE 001	75	LD	LD	LD	LD	
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	LD	
MARYLAND						
BALTIMORE SITE 001	75	LD	LD	LD	LD	
MASSACHUSETTS						
BOSTON SITE 001	75	LD	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	LD	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	LD	
WORCESTER SITE 004	75	LD	LD	LD	LD	
MICHIGAN						
DEARBORN SITE 001	75	LD	LD	LD	LD	
DETROIT SITE 001	75	LD	LD	LD	LD	
FLINT SITE 008	75	LD	LD	LD	LD	
GRAND RAPIDS SITE 001	75	LD	LD	LD	LD	
LANSING SITE 001	75	LD	LD	LD	LD	
SAGINAW SITE 001	75	LD	LD	LD	LD	
TRENTON SITE 004	75	LD	LD	LD	LD	
MINNESOTA						
DULUTH SITE 001	75	LD	LD	LD	LD	
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12113 - COPALY  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : HA/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

UPRAID  
 CO

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : .0039  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 14 PRECISION (X) 4.5 ER

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	LD	LD	LD	LD	
MOORHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	LD	LD	LD	LD	
MISSISSIPPI						
JACKSON						
SITE 002	75	LD	LD	LD	LD	
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	LD	LD	LD	
ST LOUIS						
SITE 001	75	LD	.0044	LD	LD	
ST LOUIS						
SITE 022	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	LD	.0045	
NEBRASKA						
LINCOLN						
SITE 002	75	LD	LD	LD	LD	
OMAHA						
SITE 001	75	LD	LD	LD	LD	
OMAHA						
SITE 030	75	LD	LD	LD	LD	
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	LD	LD	LD	LD	
RENO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	LD	LD	LD	LD	
NEW JERSEY						
RAYONNE						
SITE 001	75	LD	LD	LD	LD	
CAMDEN						
SITE 001	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	LD	LD	LD	
ELIZABETH						
SITE 002	75	LD	LD	LD	LD	
GLASSBORO						
SITE 001	75	LD	LD	LD	LD	
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	LD	LD	LD	LD	
NEWARK						
SITE 001	75	LD	LD	LD	LD	
PATERSON						
SITE 001	75	LD	LD	LD	LD	
PERTH AMBOY						
SITE 001	75	LD	LD	.0042	LD	
TRENTON						
SITE 001	75	LD	LD	.0043	.0044	
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	LD	LD	LD	.0053	
BUFFALO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK CITY						
SITE 014	75	LD	LD	.0048	.0045	
NIAGARA FALLS						
SITE 001	75	LD	LD	LD	.0049	
ROCHESTER						
SITE 001	75	LD	LD	LD	LD	
SYRACUSE						
SITE 001	75	LD	LD	LD	LD	
UTICA						
SITE 001	75	LD	LD	.0054	LD	
YONKERS						
SITE 001	75	LD	LD	.0056	LD	
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	LD	LD	LD	LD	
DUPHAM						
SITE 001	75	LD	LD	LD	LD	
DUPHAM						
SITE 004	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	LD	LD	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	LD	
WINSTON-SALEM						
SITE 002	75	LD	LD	LD	LD	
NORTH DAKOTA						
BISMARCK						
SITE 001	75	LD	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	LD	LD	LD	LD	
CANTON						
SITE 001	75	LD	LD	LD	LD	
CINCINNATI						
SITE 001	75	LD	LD	LD	LD	
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	LD	LD	LD	LD	
DAYTON						
SITE 001	75	LD	LD	LD	LD	
IRANTON						
SITE 009	75	LD	LD	LD	.0135	
MANSFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	LD	LD	LD	LD	
STEUBENVILLE						
SITE 012	75	LD	LD	.0049	LD	
TOLEDO						
SITE 001	75	LD	LD	LD	LD	
YOUNGSTOWN						
SITE 001	75	LD	LD	LD	LD	
OKLAHOMA						
CHEROKEE CO						
SITE 400	75	LD	LD	LD	LD	
TULSA						
SITE 110	75	LD	LD	LD	LD	
OREGON						
EUGENE						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12113 - CORALY  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 CO

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0039  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (B) 14 PRECISION (P) 4.8

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CONNECTICUT						
HARTFORD						
SITE 001	75	LD	LD	LD	LD	
PORTLAND						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
ALLENTOWN						
SITE 001	75	LD	LD	LD	LD	
ALTOONA						
SITE 001	75	LD	LD	LD	LD	
HEATHLEHEM						
SITE 002	75	LD	LD	LD	LD	
ERIE						
SITE 002	75	LD	LD	LD	LD	
HARRISBURG						
SITE 001	75	LD	LD	LD	LD	
HARRISBURG						
SITE 361	75	LD	LD	LD	LD	
HAZLETON						
SITE 001	75	LD	LD	LD	LD	
JOHNSTOWN						
SITE 003	75	LD	LD	LD	LD	
LANCASTER CITY						
SITE 002	75	LD	LD	LD	LD	
PHILADELPHIA						
SITE 004	75	LD	LD	LD	LD	
PITTSBURGH						
SITE 001	75	LD	LD	LD	LD	
READING						
SITE 001	75	LD	LD	LD	LD	
SCRANTON						
SITE 001	75	LD	LD	LD	LD	
WARRMINSTER						
SITE 002	75	LD	LD	LD	LD	
WEST CHESTER						
SITE 110	75	LD	LD	LD	LD	
WILKES-BARRE						
SITE 001	75	LD	LD	LD	LD	
YORK						
SITE 322	75	LD	LD	LD	LD	
Puerto Rico						
PAYAMON						
SITE 002	75	LD	LD	LD	LD	
CATANO						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	.0042	.0057	.0053	LD	.0051
GUAYANILLA						
SITE 003	75	LD	LD	LD	LD	
AMELIA						
SITE 001	75	LD	LD	LD	LD	
PONCE						
SITE 002	75	LD	LD	LD	LD	
SFBANA SFCA						
SITE 001	75	.0049	LD	LD	LD	
SAN JUAN						
SITE 001	75	LD	LD	LD	LD	
SAN JUAN						
SITE 001	75	LD	LD	LD	LD	
RHODE ISLAND						
EAST PROVIDENCE						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE						
SITE 001	75	LD	LD	LD	LD	
SOUTH CAROLINA						
COLUMBIA						
SITE 001	75	LD	LD	LD	LD	
GREENVILLE						
SITE 001	75	LD	LD	LD	LD	
SOUTH DAKOTA						
SIOUX FALLS						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CHATTANOOGA						
SITE 001	75	LD	LD	LD	LD	
KNOXVILLE						
SITE 002	75	LD	LD	LD	LD	
MEMPHIS						
SITE 001	75	LD	LD	LD	LD	
NASHVILLE						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
AMARILLO						
SITE 002	75	LD	LD	LD	LD	
AUSTIN						
SITE 010	75	LD	LD	LD	LD	
REAU MONT						
SITE 001	75	LD	LD	LD	LD	
CORPUS CHRISTI						
SITE 001	75	LD	LD	LD	LD	
DALLAS						
SITE 002	75	LD	LD	LD	LD	
EL PASO						
SITE 002	75	LD	LD	LD	LD	
FORT WORTH						
SITE 001	75	LD	LD	LD	LD	.0071
HOUSTON						
SITE 001	75	LD	LD	LD	LD	
LURROCK						
SITE 001	75	LD	LD	LD	LD	
PASADENA						
SITE 002	75	LD	LD	LD	LD	
SAN ANTONIO						
SITE 034	75	LD	LD	LD	LD	
WICHITA FALLS						
SITE 002	75	LD	LD	LD	LD	
UTAH						
OGDEN						
SITE 001	75	LD	LD	LD	LD	
SALT LAKE CITY						
SITE 001	75	LD	LD	LD	LD	
VERMONT						
BURLINGTON						
SITE 003	75	LD	.0109	LD	LD	
VIRGINIA						
DANVILLE						
SITE 001	75	LD	LD	LD	LD	
MCLFAN						
SITE 001	75	LD	LD	LD	LD	
HAMPTON						
SITE 001	75	LD	LD	LD	LD	
LYNCHBURG						
SITE 001	75	LD	LD	LD	LD	
LYNCHBURG						
SITE 002	75	LD	LD	LD	LD	
NEWPORT NEWS						
SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12113 - COBALT  
 METHOD : HI-VOL EMISSION SPECTRA HUFFLE FURNACE  
 UNITS : UG/CU MEYER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URRAN  
 CO

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0010  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 14 PRECISION (%) ± 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	LD	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MESA VERDE NAT PAR						
SITE 002	75	LD	LD	LD	LD	
DELAWARE						
KENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	LD	
FLORIDA						
HARDEE CO						
SITE 001	75	LD	LD	LD	LD	
HIGHLANDS CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BUTTE CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.0047	LD	LD	LD	
INDIANA						
MONROE CO						
SITE 001	75	LD	LD	LD	LD	
PARKE CO						
SITE 001	75	LD	LD	LD	LD	
IRERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	LD	LD	LD	LD	
MARYLAND						
CALVERT CO						
SITE 001	75	LD	LD	LD	LD	
MISSISSIPPI						
JACKSON CO						
SITE 001	75	LD	LD	.0063	LD	
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	LD	LD	LD	LD	
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	LD	LD	
FORT HOWES						
SITE 008	75	LD	LD	LD	LD	
ASHLAND						
SITE 026	75	LD	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINN CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
CORS CO						
SITE 001	75	LD	LD	.0051	LD	
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	LD	LD	LD	LD	
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
RUXTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	LD	LD	LD	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OREGON						
CUPRY CO						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	LD	LD	LD	LD	
INDIANA CO						
SITE 002	75	LD	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	LD	LD	LD	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	LD	LD	LD	LD	
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	LD	LD	LD	LD	
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
HATAGORDA CO						
SITE 001	75	LD	LD	LD	LD	
TOM GREEN CO						
SITE 001	75	LD	LD	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	LD	LD	LD	LD	
VIRGINIA						
SHEPANDDAH NAT PAR						
SITE 001	75	LD	LD	LD	LD	
WYTHE CO						
SITE 001	75	LD	LD	LD	LD	
WASHINGTON						
KING CO						
SITE 002	75	LD	LD	LD	LD	



POLLUTANT : 12114 - COPPER  
 METHOD : HI-VOL. EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

UPRAW  
 CU

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) = .0057  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 28 PRECISION (%) 30

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	.1892	.1810	.3746	LD	.2483
CADSDEN SITE 001	75	.1917	.2032	.3008	LD	.2319
HUNTSVILLE SITE 001	75	.2088	LD	.4348	.2271	.2896
MOBILE SITE 001	75	.1902	.3551	LD	.2088	.2514
MONTGOMERY SITE 001	75	.1255	.1353	.2019	.1895	.1630
ALASKA						
ANCHORAGE SITE 003	75	LD	.2057	.5868	.4038	.3988
FATPANKS SITE 001	75	.4433	LD	LD	.1529	
ARIZONA						
DOUGLAS SITE 004	75	.7648	.3885	.2325	.8123	.5495
PHOENIX SITE 002	75	.1275	.1312	LD	.1140	.1242
TUCSON SITE 001	75	.2838	.2624	.3086	.2829	.2844
ARKANSAS						
EL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	.2654	.4655	.9484	.3699	.5123
TEXARKANA SITE 001	75	.0635	.0551	LD	.0448	.0545
WEST MEMPHIS SITE 001	75	.1604	.2320	.2457	LD	.2127
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	.0673	.0904	.1562	.0749	.0972
BERKELEY SITE 001	75	.0614	.0535	.1009	.0687	.0711
BURBANK SITE 002	75	.2802	.5026	.3826	.2213	.3467
FRESNO SITE 002	75	.1319	.0319	.0553	.1308	.0875
GLENDALE SITE 001	75	LD	LD	.3344	.2920	
LONG BEACH SITE 001	75	.1470	.1942	.1093	.0642	.1292
LOS ANGELES SITE 001	75	LD	.0949	.0846	.0677	.0824
OAKLAND SITE 001	75	.1056	.1501	.1766	.1220	.1386
ONTARIO SITE 001	75	.1784	LD	LD	LD	
PASADENA SITE 002	75	.5893	.9996	.4578	.7340	.9452
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	.3102	.2137	.2448	.5023	.3178
SAN BERNARDINO SITE 001	75	.2266	.3448	.4961	.3780	.3614
SAN DIEGO SITE 004	75	.5241	.5406	.5223	.2121	.4498
SAN FRANCISCO SITE 001	75	.0655	.0659	.0470	.0487	.0568

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	.1232	.0917	.0860	.0743	.0940
SANTA ANA SITE 001	75	.5462	.0677	.0897	.1692	.2155
TORRANCE SITE 001	75	.2185	.6564	.4561	.3408	.3930
COLORADO						
DENVER SITE 001	75	LD	.1242	.4219	LD	
DENVER SITE 002	75	.2520	.1463	.2718	.1456	.1964
CONNECTICUT						
BRIDGEPORT SITE 001	75	.2421	.2062	.3086	.1705	.2319
HARTFORD SITE 002	75	.1472	.3493	.2628	.1072	.2166
NEW HAVEN SITE 001	75	.0718	.0629	.0524	.1012	.0721
WATERBURY SITE 001	75	.0924	.1308	.0857	.1111	.1051
WATERBURY SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	.2383	.2902	.3122	.1748	.2546
WILMINGTON SITE 002	75	.1252	LD	.5112	.7412	.4592
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	.3186	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	.27305	.2519	.5900	.4299	.4006
MIAMI SITE 002	75	.2232	.1412	.1565	.1292	.1625
ST PETERSBURG SITE 002	75	.0703	.1835	.2097	.3545	.2045
TAMPA SITE 002	75	LD	LD	.3112	LD	
GEORGIA						
ATLANTA SITE 001	75	.0596	.1635	.3594	.2275	.2025
COLUMBUS SITE 001	75	.1616	.4402	.2959	.1667	.2661
SAVANNAH SITE 001	75	.2946	.2769	.6201	.5142	.4265
HAWAII						
MAUNA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	.1414	.0602	.1105	.1557	.1170
IDAHO						
BOISE CITY SITE 001	75	LD	LD	.4185	.5099	
ILLINOIS						
BLUF ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	.1963	.4051	.2136	.2783
FAST ST LOUIS SITE 001	75	LD	LD	.4899	.5285	
JOI IET SITE 001	75	.0519	LD	.1485	.2030	.1645
MOLINE SITE 001	75	.1489	.1534	.1427	.1209	.1415

POLLUTANT : 12114 - COPPER  
 METHOD : HT-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CU

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0057  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 28 PRECISION (%) +/- 30

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	.1587	LD	.2699	.2372	.2219
PEORIA SITE 001	75	.1598	.1073	.1265	.1326	.1316
ROCKFORD SITE 001	75	.1043	.1109	LD	.3268	.1807
ROCK ISLAND SITE 001	75	.0736	.1254	.1999	.1317	.1327
SPRINGFIELD SITE 001	75	.0367	.0947	LD	.1908	.1072
INDIANA						
EAST CHICAGO SITE 001	75	.2777	.3573	LD	.5168	.3839
EVANSVILLE SITE 001	75	.1694	.2146	.4972	.2469	.2820
FORT WAYNE SITE 002	75	LD	.4931	LD	.6479	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	.2599	LD	.3151	.2374	.2691
HAMMOND SITE 002	75	.2581	.3976	.2579	.1953	.2772
INDIANAPOLIS SITE 001	75	.3500	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	.1171	.3610	LD	
NEW ALBANY SITE 002	75	LD	LD	.10212	.9242	
SOUTH BEND SITE 002	75	.1332	.2430	.4093	.2845	.2675
TERRE HAUTE SITE 001	75	.2143	.3786	.3799	.3207	.3234
IOWA						
CFDAR RAPIDS SITE 018	75	.0471	.0785	.0759	.0403	.0605
DAVENPORT SITE 001	75	.2077	LD	.4467	.3139	.3228
DES MOINES SITE 001	75	.2281	.3126	.3621	.1665	.2673
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	.0767	.0917	.1393	.0946	.1006
DUBUQUE SITE 003	75	.0611	.0906	.1579	.0985	.1020
WATERLOO SITE 004	75	.1039	.1441	.1738	.1612	.1458
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	.4487	LD	.9949	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	.1145	.0757	.0813	.1960	.1149
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	.2550	.3725	.5320	.2728	.3581

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	.1940	.2297	.2291	.1794	.2331
KENTUCKY						
ASHLAND SITE 002	75	.1444	.2164	.2263	.1670	.1860
ROWLING GREEN SITE 001	75	LD	.1003	.2193	.1170	.1502
COVINGTON SITE 001	75	.1087	.2635	.2932	LD	.2718
LEXINGTON SITE 001	75	.1882	.2337	LD	LD	
LOUISVILLE SITE 002	75	.0581	.1295	.2700	.1370	.1489
LOUISIANA						
RATON ROUGE SITE 002	75	.0988	.1275	.0591	.1289	.1016
IRFRVILLE PAR SITE 002	75	.1793	LD	.0961	.1753	.1499
NEW ORLEANS SITE 002	75	.1469	.1473	.2509	.3164	.2154
SHREVEPORT SITE 001	75	.0505	.0304	.1284	.2250	.1086
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	.1657	
MARYLAND						
BAITIMORE SITE 001	75	.4032	.5765	.6222	.5773	.5186
MASSACHUSETTS						
BOSTON SITE 001	75	.0424	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	.4401	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	.0468	
WORCESTER SITE 004	75	LD	LD	.3871	.2337	
MICHIGAN						
DEARBORN SITE 001	75	.1025	LD	.1345	.0423	.0931
DETROIT SITE 001	75	.0828	.0956	.0915	.1387	.1070
FLINT SITE 008	75	.0608	LD	LD	.2393	
GRAND RAPIDS SITE 001	75	.0796	.0566	.1170	.3708	.1560
LANSING SITE 001	75	.2641	.1898	.4509	LD	.3016
SAGINAW SITE 001	75	.0721	.1989	.0748	.0652	.1003
TRFNTON SITE 004	75	LD	LD	.2010	.2050	
MINNESOTA						
DULUTH SITE 001	75	.1070	LD	.2878	.2407	.2118
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12114 - COPPER  
 METHOD : 41-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UR/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 CU

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0057  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 2R PRECISION (Y) 30

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS SITE 027	75	.1643	.2794	.4207	.3974	.3155
MOOREHEAD SITE 001	75	LD	LD	LD	LD	
ST PAUL SITE 031	75	.1026	LD	.5240	.3319	.3195
MISSISSIPPI						
JACKSON SITE 002	75	.2030	LD	.1847	.1409	.1762
MISSOURI						
KANSAS CITY SITE 002	75	LD	.1169	.1597	LD	
ST LOUIS SITE 001	75	.1423	.4294	.2899	.2494	.2778
ST LOUIS SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELFNA SITE 001	75	LD	LD	.1344	.1090	
NEBRASKA						
LINCOLN SITE 002	75	.3372	.5043	.4514	.2069	.3750
OMAHA SITE 001	75	.1612	LD	LD	LD	
OMAHA SITE 030	75	LD	.1081	.1383	.1244	.1236
OMAHA SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS SITE 001	75	.2619	.8030	.2893	.5607	.4787
RENO SITE 001	75	.3269	.3166	.2756	.2534	.2931
NEW HAMPSHIRE						
CONCORD SITE 002	75	.5202	LD	LD	.5519	
NEW JERSEY						
RAYONNE SITE 001	75	.1511	LD	.1497	.1211	.1406
CAMDEN SITE 001	75	.4081	.3063	.2427	.2388	.2990
CAMDEN CO SITE 002	75	LD	LD	LD	LD	
CAMDEN CO SITE 003	75	LD	.0475	.0635	.0982	.0697
ELIZABETH SITE 002	75	.1035	.1541	.2386	.1536	.1625
GLASSBORO SITE 001	75	.3092	.2344	.2424	.1873	.2434
HAMILTON SITE 001	75	LD	LD	LD	LD	
JERSEY CITY SITE 001	75	.1004	LD	.1362	.0983	.1116
NEWARK SITE 001	75	.0804	LD	.2886	.2548	.2079
PATERSON SITE 001	75	.0980	LD	.0788	LD	
PERTH AMBOY SITE 001	75	.1215	LD	.2860	.2331	.2135
TRENTON SITE 001	75	.1105	.0889	.1658	.1301	.1238
NEW MEXICO						
ALBUQUERQUE SITE 001	75	LD	.4717	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY SITE 001	75	.0758	.0640	.0640	.0449	.0672
RUFFALO SITE 001	75	.0383	.0563	.1092	.1477	.0926
NEW YORK CITY SITE 014	75	.1415	.2775	.4018	.3503	.2933
NIAGARA FALLS SITE 001	75	.1360	.1585	.2170	.2281	.1849
ROCHESTER SITE 001	75	.0642	.1055	.1161	.0622	.0845
SYRACUSE SITE 001	75	.3613	LD	.4655	.2906	.3691
UTICA SITE 001	75	.1917	.0878	.1212	.0623	.1208
YONKERS SITE 001	75	.2066	.2711	.8931	.3916	.4906
NORTH CAROLINA						
CHARLOTTE SITE 001	75	.1146	.4638	.6240	.3190	.3804
DURHAM SITE 001	75	LD	.2108	.2109	LD	
DURHAM SITE 006	75	LD	LD	LD	LD	
GREENSBORO SITE 001	75	.1823	.1641	LD	LD	
GREENSBORO SITE 009	75	LD	LD	LD	.1662	
WINSTON-SALEM SITE 002	75	.1834	.2459	.4178	.1724	.2549
NORTH DAKOTA						
RISMARCK SITE 001	75	.2768	LD	LD	LD	
OHIO						
AKRON SITE 014	75	.2856	.3652	.4493	.3600	.3650
CANTON SITE 001	75	.1725	.2809	.2658	LD	.2397
CINCINNATI SITE 001	75	.2528	.1584	.3271	.3390	.0193
CLEVELAND SITE 001	75	LD	LD	LD	LD	
COLUMBUS SITE 001	75	.2661	.2474	.2195	.1794	.2269
DAYTON SITE 001	75	.2662	.1457	.1226	.0848	.1548
FRONTON SITE 009	75	.3607	.4177	.5670	.6024	.4870
HANSFIELD SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH SITE 002	75	.4291	.1033	.2310	LD	.2551
STUBENVILLE SITE 012	75	LD	LD	.5782	.2058	
TRIPOD SITE 001	75	.9821	.1463	.1655	LD	.4313
YOUNGSTOWN SITE 001	75	.0506	.0996	.1340	.6445	.2372
OKLAHOMA						
CHEROKEE CO SITE 480	75	.1492	LD	LD	LD	
TULSA SITE 110	75	.1290	.1751	.1019	LD	.1353
OREGON						
EUGENE SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12114 - COPPER  
 METHOD : MELT-EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICROGRAMS PER CUBIC METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 CU

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0057  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 28 PRECISION (Y) +/- 30

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
DELAWARE						
WILMINGTON						
SITE 001	75	LD	LD	LD	LD	
PORTLAND						
SITE 001	75	LD	.4044	.4684	.7324	.5351
PENNSYLVANIA						
ALLENTOWN						
SITE 001	75	.2496	.2392	.1944	.0857	.1920
ALTOONA						
SITE 001	75	.2631	LD	.1258	.1451	.1780
MEYERLEIGH						
SITE 002	75	LD	LD	LD	LD	
ERIE						
SITE 002	75	LD	.1544	.2339	.1218	.1707
HARRISBURG						
SITE 001	75	LD	LD	LD	LD	
HARRISBURG						
SITE 161	75	LD	LD	LD	LD	
HAZLETON						
SITE 001	75	.1379	LD	LD	.3355	
JOHNSTOWN						
SITE 803	75	LD	LD	LD	LD	
LANCASTER CITY						
SITE 002	75	LD	LD	LD	.3214	
PHILADELPHIA						
SITE 004	75	.3276	.6049	.3821	.2622	.3947
PITTSBURGH						
SITE 001	75	.1164	.0984	.1355	.1444	.1237
READING						
SITE 001	75	LD	.1204	LD	LD	
SCRANTON						
SITE 001	75	.0827	.1364	.1195	LD	.1129
WARMINSTER						
SITE 002	75	.0752	.2297	.0741	LD	.1263
WEST CHESTER						
SITE 110	75	.0631	.0939	.1392	.2217	.1295
WILKES-BARRE						
SITE 001	75	.0762	.0787	.0819	.1247	.0904
YORK						
SITE 322	75	.0605	.1122	.1416	LD	.1048
Puerto Rico						
RAYMOND						
SITE 002	75	LD	LD	LD	LD	
CATANO						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	.0739	.0366	.2611	.2553	.1567
GUAYANILLA						
SITE 003	75	LD	LD	LD	LD	
AMELIA						
SITE 001	75	.3477	LD	.7315	.5677	.5490
PONCE						
SITE 002	75	.0490	LD	.4036	.4415	.6314
SEBANA SECA						
SITE 001	75	.3462	.1580	.2545	.4175	.7941
SAN JUAN						
SITE 001	75	LD	LD	LD	LD	
SAN JUAN						
SITE 001	75	.0651	.0835	.5350	.4008	.2711
Rhode Island						
EAST PROVIDENCE						
SITE 001	75	.0975	.0896	.0486	LD	.0786

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
Rhode Island						
PROVIDENCE						
SITE 001	75	.2715	LD	.5280	.2852	.3622
SOUTH CAROLINA						
COLUMBIA						
SITE 001	75	.2252	.0736	.4831	.4537	.5589
GREENVILLE						
SITE 001	75	.0883	.2644	.2773	.1749	.2017
SOUTH DAKOTA						
SIOUX FALLS						
SITE 001	75	LD	LD	.1291	LD	
TENNESSEE						
CHATTANOOGA						
SITE 001	75	.0339	.0447	.0944	.0791	.0610
KNOXVILLE						
SITE 002	75	.0867	.0423	.3138	.2983	.1903
MEMPHIS						
SITE 001	75	.0783	.0717	.0746	.1049	.0824
NASHVILLE						
SITE 001	75	.3723	.1329	.1836	LD	.2296
TEXAS						
AMARILLO						
SITE 002	75	LD	LD	LD	LD	
AUSTIN						
SITE 010	75	.5594	.5308	.4677	LD	.5193
BEAUMONT						
SITE 001	75	LD	LD	.0347	LD	
CORPUS CHRISTI						
SITE 001	75	.0185	LD	.0710	.0271	.0222
DALLAS						
SITE 002	75	.1807	.1527	.2099	.1957	.1848
EL PASO						
SITE 002	75	.0020	.5946	.2944	.2765	.7919
FORT WORTH						
SITE 001	75	.0757	.0613	.1046	.1015	.0851
HOUSTON						
SITE 001	75	.2050	.2745	.2255	.2028	.2275
LURBOCK						
SITE 001	75	.0167	LD	.0912	.0322	.0300
PASADENA						
SITE 002	75	.0865	.1036	LD	.1045	.0982
SAN ANTONIO						
SITE 034	75	.0282	.0312	.0457	.0336	.0347
WICHITA FALLS						
SITE 002	75	.0549	.1849	LD	LD	
UTAH						
OGDEN						
SITE 001	75	LD	.0380	.0583	.0762	.0575
SALT LAKE CITY						
SITE 001	75	.1079	.1231	.2813	.2737	.1965
VERMONT						
BURLINGTON						
SITE 003	75	.1434	.4410	.3943	.5345	.3833
VIRGINIA						
DANVILLE						
SITE 001	75	.0579	.0764	LD	.0378	.0574
MCLFAN						
SITE 001	75	LD	LD	LD	LD	
HAMPTON						
SITE 001	75	.0323	.0242	.0514	.0733	.0453
LYNCHBURG						
SITE 001	75	.0742	.1551	LD	.2153	.1489
LYNCHBURG						
SITE 002	75	LD	LD	.3007	LD	
NEWPORT NEWS						
SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12114 - COPPER  
 METHOD : NI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 CU

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0057  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 28 PRECISION (%) +/- 30

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.	LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA GRAPE CANYON NAT P SITE 001	75	LD	LD	LD	LD		NEVADA WHITE PINE CO SITE 001	75	.0456	.0641	.1109	.0715	.0730
ARIZONA MARICOPA CO SITE 005	75	LD	LD	LD	LD		NEW HAMPSHIRE COOS CO SITE 001	75	.7598	2.9318	3.7174	1.8171	2.3065
ARKANSAS MONTGOMERY CO SITE 001	75	LD	.0856	.1686	.0220	.0921	NEW MEXICO RIO ARRIBA CO SITE 001	75	LD	LD	LD	LD	
CALIFORNIA HUMBOLDT CO SITE 001	75	LD	LD	LD	LD		NEW YORK JEFFERSON CO SITE 001	75	.2397	.3204	.1690	LD	.2430
COLORADO PESA VERDE NAT PAR SITE 002	75	.2920	LD	.1622	.1482	.2008	NORTH CAROLINA CAPE HATTERAS NAT SITE 001	75	LD	LD	LD	LD	
DELAWARE DELTA CO SITE 001	75	LD	LD	LD	LD		OHIO BUXTON SITE 002	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA WASHINGTON SITE 003	75	LD	LD	LD	.1366		OHIO CINCINNATI SITE 003	75	.5172	LD	.4949	LD	
FLORIDA HARDEE CO SITE 001	75	.0399	.3866	.3538	LD	.5934	OKLAHOMA OKLAHOMA CITY SITE 001	75	.1471	.2349	.3876	.1260	.2239
FLORIDA HIGHLANDS CO. SITE 002	75	LD	LD	LD	LD		OKLAHOMA CITY SITE 015	75	LD	LD	LD	LD	
HAWAII HAWAII CO SITE 001	75	.0137	.0796	.0605	.0687	.0556	OKLAHOMA CITY SITE 015	75	.0688	.0354	.0976	.1438	.0864
HAWAII HAWAII CO SITE 002	75	.3494	.2205	LD	.1873	.2524	OREGON CURRY CO SITE 001	75	LD	.1253	LD	LD	
HAWAII VOLCANOES N SITE 001	75	.1293	.1072	LD	LD		PENNSYLVANIA CLARION CO SITE 001	75	.1502	LD	LD	LD	
IDAHO BUTTE CO SITE 001	75	.0966	.0724	.3898	LD	.1863	INDIANA CO SITE 002	75	.2381	LD	LD	LD	
ILLINOIS CHICAGO SITE 002	75	.1573	.1506	.1427	LD	.1502	PHILADELPHIA SITE 002	75	.3608	LD	.2492	LD	
INDIANA MONROE CO SITE 001	75	LD	.1944	.7616	.4326	.4629	RHODE ISLAND WASHINGTON CO SITE 002	75	.0721	LD	.0934	.0528	.0728
INDIANA PARK CO SITE 001	75	LD	.3912	LD	LD		SOUTH CAROLINA RICHLAND CO SITE 002	75	.3300	.2012	.2646	.3091	.2762
KENTUCKY LIGERTVILLE PAR LOUISIANA SITE 001	75	LD	LD	LD	LD		SOUTH DAKOTA BLACK HILLS NAT FO SITE 001	75	.1759	.3553	.3307	LD	.2873
MAINE ACADIA NAT PARK SITE 001	75	.1131	.0852	LD	.1330	.1104	TENNESSEE CUMBERLAND CO SITE 001	75	.1399	.1844	.4316	.2580	.2535
MARYLAND CALVERT CO SITE 001	75	LD	1.2862	.4684	.1406	1.0317	TEXAS MATAGORDA CO SITE 001	75	.1870	.7826	.6275	.6037	.5502
MISSISSIPPI JACKSON CO SITE 001	75	.0966	.1643	.4453	.2365	.2357	TOM GREEN CO SITE 001	75	LD	.0658	.1155	.1090	.0968
MISSOURI ST LOUIS SITE 002	75	LD	LD	LD	LD		UTAH EMERY COUNTY SITE 003	75	LD	LD	LD	LD	
MISSOURI SHANNON CO SITE 002	75	.1529	.2397	.1471	.1398	.1699	VERMONT ORANGE CO SITE 001	75	.2929	.1747	.1471	LD	.2049
MONTANA GLACIER NAT PARK SITE 001	75	LD	LD	.3286	.0664		VIRGINIA SHEPANOAH NAT PAR SITE 001	75	.0871	LD	.4265	.1694	.2277
MONTANA FORT HOWES SITE 008	75	LD	LD	.1066	.1048		WYTHE CO SITE 001	75	.2955	LD	.5715	.2498	.3723
NEBRASKA ASHLAND SITE 026	75	.0290	LD	LD	LD		WASHINGTON KING CO SITE 002	75	.0581	.1480	.3165	.3466	.2173
NEBRASKA THOMAS CO SITE 001	75	.3119	.2633	.6460	LD	.4071							

POLLUTANT : 12114 - COPPER  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 CU

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0057  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 28      PRECISION (%) +/- 30

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN						
DOOR CO						
SITE 001	75	LD	LD	LD	LD	
WYCHING						
GRAND TETON NAT PA						
SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA						
SITE 001	75	LD	.1937	.1224	LD	
VIRGIN ISLANDS						
ST THOMAS						
SITE 002	75	LD	.217E	.4966	LD	
ST CROIX						
SITE 004	75	LD	.2515	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

POLLUTANT : 12126 - IRON  
 METHOD : 41-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 FE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .005  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (+) 25 PRECISION (+) +/- 14

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM						
SITE 003	75	1.0077	1.1802	1.0221	LD	1.0700
BIRMINGHAM						
SITE 001	75	1.3794	1.2231	1.2880	LD	1.2968
HUNTSVILLE						
SITE 001	75	.4994	LD	.2964	.3506	.3809
MOBILE						
SITE 001	75	1.4306	.9837	LD	1.2015	1.2053
MONTGOMERY						
SITE 001	75	.2004	.3971	.4586	.5641	.4276
ALASKA						
ANCHORAGE						
SITE 003	75	LD	2.8171	1.3627	1.8017	1.9938
ANCHORAGE						
SITE 001	75	.4658	LD	LD	.3957	
ARIZONA						
DOUGLAS						
SITE 004	75	2.0101	1.5768	.7003	1.1068	1.3484
PHOENIX						
SITE 002	75	2.6617	2.4529	LD	2.7468	2.6205
PHOENIX						
SITE 001	75	1.2123	1.0846	.7693	1.5877	1.1635
ARKANSAS						
EL DORADO						
SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK						
SITE 001	75	.6619	.8125	.7310	.4640	.6674
TEXARKANA						
SITE 001	75	.9194	.4143	LD	.5110	.6254
WEST MEMPHIS						
SITE 001	75	1.1648	1.4172	.8203	LD	1.1341
WEST MEMPHIS						
SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM						
SITE 001	75	1.3496	.8393	1.3575	1.3747	1.2303
BERKELEY						
SITE 001	75	.6016	.2017	.4179	.5615	.4457
BIRMBANK						
SITE 002	75	2.0491	.9622	1.4075	2.0646	1.6209
FRESNO						
SITE 002	75	1.7125	1.2479	2.6687	1.1948	1.7060
GLENDALE						
SITE 001	75	LD	LD	1.1543	1.3634	
LONG BEACH						
SITE 001	75	1.5458	1.1490	1.2345	1.3636	1.3285
LOS ANGELES						
SITE 001	75	LD	1.1749	1.1040	1.9180	1.3990
OAKLAND						
SITE 001	75	.7009	1.0166	1.0674	1.3437	1.0372
ONTARIO						
SITE 001	75	3.0443	LD	LD	LD	
PASADENA						
SITE 002	75	1.1729	.7658	.9042	1.0137	.9642
RIVERSIDE						
SITE 001	75	LD	LD	LD	LD	
SACRAMENTO						
SITE 001	75	.3327	.4389	.8396	.8304	.5104
SAN BERNARDINO						
SITE 001	75	1.3720	2.8109	3.3857	1.7457	2.3286
SAN DIEGO						
SITE 004	75	1.5076	1.7747	.6945	1.1394	1.2791
SAN FRANCISCO						
SITE 001	75	.6713	.5347	.3493	.3852	.4851

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE						
SITE 004	75	1.2255	1.1085	1.3384	1.1713	1.2110
SANTA ANA						
SITE 001	75	.9143	1.1588	1.0931	1.0063	1.0656
TORRANCE						
SITE 001	75	1.9469	1.4549	.6340	1.0145	1.2378
COLORADO						
DENVER						
SITE 001	75	LD	.9361	2.2045	LD	
DENVER						
SITE 002	75	5.1140	.9875	1.6806	4.5412	3.3308
CONNECTICUT						
BRIDGEPORT						
SITE 001	75	1.1804	.9680	.6497	.6074	.8719
HARTFORD						
SITE 002	75	1.2122	.8806	.5111	.4651	.7648
NEW HAVEN						
SITE 001	75	1.5003	1.1452	.7829	.6110	1.0105
WATERBURY						
SITE 001	75	1.6175	1.7594	1.4440	.7094	1.3923
WATERBURY						
SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK						
SITE 001	75	.9782	1.0559	1.3847	.8038	1.0542
WILMINGTON						
SITE 002	75	1.1074	LD	.9349	.9771	1.0065
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 001	75	1.0948	LD	LD	LD	
FLORIDA						
JACKSONVILLE						
SITE 002	75	.4918	1.4535	.7447	.6644	.8366
MIAMI						
SITE 002	75	.4945	.6146	.4207	.3221	.4630
ST PETERSBURG						
SITE 002	75	.5096	.4260	.3277	.2431	.3766
TAMPA						
SITE 002	75	LD	LD	.6943	LD	
GEORGIA						
ATLANTA						
SITE 001	75	.6967	.6717	.8509	.5882	.7019
COLUMBUS						
SITE 001	75	.4842	.4486	.4216	.4598	.4536
SAVANNAH						
SITE 001	75	.6540	.6291	.8255	.9117	.7551
HAWAII						
MAUIA LOA OBSERV						
SITE 002	75	LD	LD	LD	LD	
HONOLULU						
SITE 001	75	.3637	.5437	.4884	.5321	.4819
IDAHO						
BOISE CITY						
SITE 001	75	LD	LD	1.5415	.8639	
ILLINOIS						
RIEF ISLAND						
SITE 001	75	LD	LD	LD	LD	
CHICAGO						
SITE 001	75	LD	1.3310	3.0247	1.5718	1.9768
FAST ST LOUIS						
SITE 001	75	LD	LD	2.2077	2.8617	
JOLIET						
SITE 001	75	1.2848	LD	1.6040	1.0412	1.3113
MOLINE						
SITE 001	75	1.0055	1.0632	1.0792	.9415	1.0224

POLLUTANT : 12126 - IRON  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UC/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 FE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) = 0.05  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 25 PRECISION (Y) ± 24

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	.6770	LD	1.0628	.8691	.8693
PEORIA SITE 001	75	1.0128	1.3695	1.0999	2.0775	2.3872
ROCKFORD SITE 001	75	.6703	.6273	LD	.7441	.6806
ROCK ISLAND SITE 001	75	.7366	1.2046	1.1331	1.1281	1.0506
SPRINGFIELD SITE 001	75	.4817	.9131	LD	1.1017	.8322
INDIANA						
EAST CHICAGO SITE 001	75	.4588	1.0992	LD	1.6110	1.3828
EVANSVILLE SITE 001	75	.5599	.6112	1.2775	.8023	.8127
FORT WAYNE SITE 002	75	LD	.7789	LD	.9360	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	1.3941	LD	1.1147	1.4272	1.5677
HAMMOND SITE 002	75	1.3434	1.3732	1.0758	1.5069	1.6023
INDIANAPOLIS SITE 001	75	1.0076	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	.7202	.9410	LD	
NEW ALBANY SITE 002	75	LD	LD	1.0317	.9931	
SOUTH BEND SITE 002	75	.7694	1.0584	1.2016	.8420	.9679
TERRE HAUTE SITE 001	75	.8197	1.3635	1.4277	1.0595	1.1676
IOWA						
CEDAR RAPIDS SITE 018	75	1.1105	1.1117	.9957	.9054	1.0308
DAVENPORT SITE 001	75	.7853	LD	1.1000	1.0949	.9941
DES MOINES SITE 001	75	.8823	1.4177	1.7044	1.3474	1.3380
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	.4449	.5245	.6215	.3577	.4875
DUBUQUE SITE 008	75	.4260	.6283	.6614	.8063	.6305
WATERLOO SITE 004	75	.6455	.9985	.8869	1.4063	1.0093
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	1.3816	LD	1.5339	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	1.7768	1.4734	2.0206	1.9085	1.7948
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	.6516	.5201	.7137	.7468	.6329

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	.4963	.4562	.8014	.9027	.7017
KENTUCKY						
ASHLAND SITE 002	75	1.2740	1.5331	1.7564	2.2845	2.5786
BOWLING GREEN SITE 001	75	LD	.4297	.2790	.2037	.3341
COVINGTON SITE 001	75	.9843	.9147	.9608	LD	1.2873
LEXINGTON SITE 001	75	.5650	1.1505	LD	LD	
LOUISVILLE SITE 002	75	.6817	1.1180	1.0708	.7911	.9173
LOUISIANA						
BATON ROUGE SITE 002	75	.3009	.3705	.4307	.3151	.3566
IRRVILLE PAR SITE 002	75	.4210	LD	.2241	.2202	.2884
NEW ORLEANS SITE 002	75	.6849	.5457	.5205	.5144	.5664
SHREVEPORT SITE 001	75	1.3048	1.7414	1.7328	2.2693	1.7620
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	.5066	
MARYLAND						
BALTIMORE SITE 001	75	1.2359	1.6250	1.1935	1.5678	1.4031
MASSACHUSETTS						
BOSTON SITE 001	75	1.0710	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	.7904	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	.5098	
WORCESTER SITE 004	75	LD	LD	.7008	.6712	
MICHIGAN						
DEARBORN SITE 001	75	1.4700	LD	2.0069	1.7461	1.1179
DETROIT SITE 001	75	1.6934	1.3551	2.1201	2.5457	2.1858
FLINT SITE 008	75	.9497	LD	LD	.7409	
GRAND RAPIDS SITE 001	75	1.0520	1.0807	1.4543	1.0387	1.1574
LANSING SITE 001	75	1.2171	1.0967	1.5603	LD	1.2914
SAGINAW SITE 001	75	.6496	1.1633	1.1707	1.1554	.0798
TRENTON SITE 004	75	LD	LD	1.2810	1.6541	
MINNESOTA						
DULUTH SITE 001	75	1.7348	LD	1.7395	1.2549	1.5763
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12126 - IRON  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICROGRAM PER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URANIUM  
 FE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .045  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (+) 25 PRECISION (+) +/- 34

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	.7110	.9478	1.6253	1.3377	1.1537
MOOREHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	1.0274	LD	1.4697	1.4374	1.3135
MISSISSIPPI						
JACKSON						
SITE 002	75	.5576	LD	.4976	.7373	.5975
MISSOURI						
KAUASAS CITY						
SITE 002	75	LD	1.3149	1.6614	LD	
ST LOUIS						
SITE 001	75	1.3950	1.0441	1.6777	1.0111	1.4820
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MISSISSIPPI						
MEMPHIS						
SITE 001	75	LD	LD	.4345	1.1019	
NEBRASKA						
LINCOLN						
SITE 002	75	.8745	.9775	.6436	1.2442	.9350
OMAHA						
SITE 001	75	1.5779	LD	LD	LD	
OMAHA						
SITE 030	75	LD	1.4029	1.3644	1.8248	1.5307
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	.9877	.6370	.7688	1.0661	.8637
RENO						
SITE 001	75	2.1270	.8277	.9113	2.0685	1.4835
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	.7438	LD	LD	.4391	
NEW JERSEY						
BAYONNE						
SITE 001	75	.9548	LD	1.0121	1.2315	1.0661
CAMDEN						
SITE 001	75	1.7850	2.7478	2.0565	2.0411	2.1576
CAMPDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMPDEN CO						
SITE 003	75	LD	.6170	.9752	1.1705	.8876
ELIZABETH						
SITE 002	75	.8073	1.0786	.9356	1.2994	1.0302
GLASSBORO						
SITE 001	75	.7479	.3264	.5560	.4820	.5281
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	1.2416	LD	1.2490	.8296	1.1067
NEWARK						
SITE 001	75	1.5636	LD	1.0275	.9568	1.1826
PATERSON						
SITE 001	75	.7323	LD	.6586	LD	
PERTH AMBOY						
SITE 001	75	.7884	LD	1.7551	1.2027	1.2487
TRENTON						
SITE 001	75	.9811	.8319	1.7053	1.3119	1.2081
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	.5711	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	.5951	.5491	.5260	.6222	.5731
BUFFALO						
SITE 001	75	.9518	1.3643	1.3921	1.3543	1.2661
NEW YORK CITY						
SITE 014	75	1.1004	1.5694	1.4316	1.2676	1.3648
NIAGARA FALLS						
SITE 001	75	1.6460	1.7578	1.4095	1.4359	1.5823
ROCHESTER						
SITE 001	75	.6132	1.0147	1.2577	.8280	.9289
SYRACUSE						
SITE 001	75	1.0202	LD	1.1777	.8872	1.0117
UTICA						
SITE 001	75	1.2240	.6438	1.3655	.9575	1.0227
YONKERS						
SITE 001	75	.5866	1.7958	1.3279	1.1391	1.2124
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	.3356	.5179	.4844	.6312	.4923
DURHAM						
SITE 001	75	LD	.9739	1.0060	LD	
DURHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	.8485	.8103	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	.6548	
WINSTON-SALEM						
SITE 002	75	.5244	.8189	.9398	1.1328	.8540
NORTH DAKOTA						
BISMARCK						
SITE 001	75	1.2168	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	3.5150	2.1832	2.6729	2.1457	2.6292
CANTON						
SITE 001	75	2.4956	2.4127	.4323	LD	3.0772
CINCINNATI						
SITE 001	75	1.0907	1.0878	2.0242	1.6161	1.4547
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	1.1393	1.3275	1.8493	1.5130	1.4573
DAYTON						
SITE 001	75	1.0208	1.3280	1.4475	1.8327	1.4073
IRONTON						
SITE 009	75	1.3251	2.2301	1.9987	1.7197	1.8188
MANSFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	.6950	.9602	1.6186	LD	1.0913
STUBENVILLE						
SITE 012	75	LD	LD	5.6915	2.9646	
TOLEDO						
SITE 001	75	1.1744	1.2765	1.5714	LD	1.3408
YOUNGSTOWN						
SITE 001	75	2.9912	3.9004	4.1013	3.8699	3.7157
OKLAHOMA						
CHEROKEE CO						
SITE 480	75	.2156	LD	LD	LD	
TULSA						
SITE 110	75	.5246	.8662	.8618	LD	.7509
OREGON						
EUGENE						
SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12126 - IRON  
 METHOD : HI-VAL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 FE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .005  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 75 PRECISION (%) 74

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CONNECTICUT						
MIDDLETOWN SITE 001	75	LD	LD	LD	LD	
PORTLAND SITE 001	75	LD	1.6397	1.4239	.6341	1.2327
PENNSYLVANIA						
ALLENTOWN SITE 001	75	1.1765	.9721	.6633	.9175	.9374
ALTONNA SITE 001	75	2.2514	LD	1.3401	.8534	1.4818
BETHLEHEM SITE 002	75	LD	LD	LD	LD	
ERIE SITE 002	75	LD	1.8925	1.1420	1.6254	1.5533
HARRISBURG SITE 001	75	LD	LD	LD	LD	
HARRISBURG SITE 361	75	LD	LD	LD	LD	
HAZLETON SITE 001	75	2.2626	LD	LD	1.5191	
JOHNSTOWN SITE 803	75	LD	LD	LD	LD	
LANCASTER CITY SITE 002	75	LD	LD	LD	1.6172	
PHILADELPHIA SITE 004	75	1.4034	1.2442	1.1778	.2752	1.2752
PITTSBURGH SITE 001	75	3.8469	1.9040	2.7844	1.9885	2.6310
READING SITE 001	75	LD	.9552	LD	LD	
SCRANTON SITE 001	75	5.8464	2.7748	2.6459	LD	3.7564
WARMINSTER SITE 002	75	.6925	1.4581	1.5114	LD	1.2207
WEST CHESTER SITE 110	75	.5076	.6549	.5186	.6906	.5929
WILKES-BARRRE SITE 001	75	1.2745	1.4374	1.1241	1.5184	1.3387
YORK SITE 322	75	1.2145	.9041	1.0920	LD	1.0709
PUERTO RICO						
BAYAMON SITE 002	75	LD	LD	LD	LD	
CATANO SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	.4797	.9247	1.8761	.4324	.9282
GUAYANILLA SITE 003	75	LD	LD	LD	LD	
AMELIA SITE 001	75	1.0985	LD	1.3140	.6321	1.0149
PONCE SITE 002	75	.4767	LD	1.5943	1.2880	1.1197
SPRANA SECA SITE 001	75	1.1662	1.1275	1.0771	.8681	1.0597
SAN JUAN SITE 001	75	LD	LD	LD	LD	
SAN JUAN SITE 001	75	1.1624	1.2687	1.7017	.9786	1.2654
RHODE ISLAND						
EAST PROVIDENCE SITE 001	75	.6711	.4549	.5339	LD	.6200

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE SITE 001	75	1.2231	LD	.6725	.7465	.8807
SOUTH CAROLINA						
COLUMBIA SITE 001	75	.6624	.9290	.3912	.9131	.7389
GREENVILLE SITE 001	75	.5610	.5547	.4177	.4335	.4917
SOUTH DAKOTA						
SIOUX FALLS SITE 001	75	LD	LD	1.0722	LD	
TENNESSEE						
CHATTANOOGA SITE 001	75	.9869	1.1394	1.2042	2.0227	1.4908
KNOXVILLE SITE 002	75	.4892	.5741	.6788	.7049	.6118
MEMPHIS SITE 001	75	.7184	1.1638	1.1354	.8471	.9763
NASHVILLE SITE 001	75	1.0040	1.1684	1.0504	LD	1.0743
TEXAS						
AMARILLO SITE 002	75	LD	LD	LD	LD	
AUSTIN SITE 010	75	.3592	.3445	.3412	LD	.3483
BEAUMONT SITE 001	75	LD	LD	.4501	LD	
CORPUS CHRISTI SITE 001	75	.6159	LD	.6961	.5764	.6295
DALLAS SITE 002	75	1.3818	1.4955	1.0003	1.7621	1.6349
EL PASO SITE 002	75	1.8824	1.8765	.9653	2.3328	1.7643
FORT WORTH SITE 001	75	.6170	.5851	.8921	1.0068	.7753
HOUSTON SITE 001	75	1.2274	.7879	1.3903	1.1478	1.1384
LURROCK SITE 001	75	.7725	LD	1.1022	1.8235	1.2487
PASADENA SITE 002	75	1.1348	2.1679	LD	.7488	1.7572
SAN ANTONIO SITE 034	75	.3255	.3379	.3306	.3014	.3464
WICHITA FALLS SITE 002	75	.8847	.9871	LD	LD	
UTAH						
OGDEN SITE 001	75	LD	1.0004	1.0979	1.9037	1.3340
SALT LAKE CITY SITE 001	75	2.0118	.8602	1.1043	2.2966	1.5540
VERMONT						
BURLINGTON SITE 003	75	.8931	1.9036	.7380	.6912	1.0545
VIRGINIA						
DANVILLE SITE 001	75	.5300	.8605	LD	1.0052	.4152
MCLEAN SITE 001	75	LD	LD	LD	LD	
HAMPTON SITE 001	75	.7020	.6408	.5415	.5449	.6321
LYNCHBURG SITE 001	75	.9188	.0326	LD	1.5787	1.1767
LYNCHBURG SITE 002	75	LD	LD	1.0048	LD	
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12126 - IRON  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 FE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .045  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 25 PRECISION (S) 34

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	.2671	.1474	.1448	.1848
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MESA VERDE NAT PAR						
SITE 002	75	.1059	LD	.2130	.1146	.1445
DELAWARE						
KENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	.8623	
FLORIDA						
HARDEE CO						
SITE 001	75	.1800	.2121	.1026	LD	.1649
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	.0835	LD	LD	
HAWAII CO						
SITE 002	75	.0814	.3879	LD	.1544	.2079
HAWAII VOLCANOES N						
SITE 001	75	.0620	LD	LD	LD	
IDAHO						
BUTTE CO						
SITE 001	75	LD	.1596	.3641	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.25799	.1708	.18366	LD	.20624
INDIANA						
MORRIS CO						
SITE 001	75	LD	.5456	.4667	.4710	.5611
PARKE CO						
SITE 001	75	LD	.3479	LD	LD	
IRERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.1878	.2444	LD	.1057	.1793
MARYLAND						
CALVERT CO						
SITE 001	75	LD	.4093	.3268	.2705	.3352
MISSISSIPPI						
JACKSON CO						
SITE 001	75	.1111	.1920	.0566	.1806	.1351
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	.0993	.1432	.1994	.2718	.1789
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	.2381	LD	
FORT HOWES						
SITE 008	75	LD	LD	.2846	.3643	
ASHLAND						
SITE 026	75	.1129	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	.1821	.2550	.3842	LD	.2771

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	.4292	.1930	.0086	.2372
NEW HAMPSHIRE						
COS CO						
SITE 001	75	.2013	.1698	.1658	.1332	.1675
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	.2347	.2824	.3135	LD	.2770
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
ROLYTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.12463	LD	.14314	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	.10756	.7121	.8862	.8623	.8816
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	.1908	.12993	.11711	.1100	.1793
OREGON						
CURRY CO						
SITE 001	75	LD	.3166	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	.3857	LD	LD	LD	
INDIANA CO						
SITE 002	75	.9862	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.15225	LD	.12926	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	.2790	LD	.1586	.2382	.2053
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	.1651	.1827	.1321	.1781	.1645
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	.0627	.2341	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	.2404	.4496	.6340	.3141	.4095
TEXAS						
MATAGORDA CO						
SITE 001	75	.1178	.2392	.4293	.1266	.2282
TOM GREEN CO						
SITE 001	75	LD	.4093	.2422	.3122	.3236
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	.4917	.3856	.3444	LD	.4072
VIRGINIA						
SHIFFANDDAH NAT PAR						
SITE 001	75	.1049	LD	.1217	.2581	.1622
WYTHE CO						
SITE 001	75	.1755	LD	.1446	.1771	.1657
WASHINGTON						
KING CO						
SITE 002	75	.2265	.5333	.4188	.1093	.3207

POLLUTANT : 1212A - IRON  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 FE

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) 0.045  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 25              PRECISION (%) +/- 34

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN						
DOOR CO						
SITE 001	75	LD	LD	LD	LD	
WYOMING						
GRAND TETON NAT PA						
SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA						
SITE 001	75	LD	1426	1973	LD	
VIRGIN ISLANDS						
ST THOMAS						
SITE 002	75	LD	1.7116	1.2293	LD	
ST CROIX						
SITE 004	75	LD	3447	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

POLLUTANT : 12128 - LEAD  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU FT-ER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

UPRAN  
 PB

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : 1.1769  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 14 PRECISION (Y) = 24

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	.5285	.5940	.6955	LD	.6727
CADSDEN SITE 001	75	.9694	.5701	.7944	LD	.7780
HUNTSVILLE SITE 001	75	.5370	LD	.4797	.4721	.6300
MOBILE SITE 001	75	.8687	.7767	LD	1.1312	.9255
MONTGOMERY SITE 001	75	.6220	.4910	.6069	1.2040	.7310
ALASKA						
ANCHORAGE SITE 003	75	LD	.7082	.8411	2.0882	1.7125
FAIRBANKS SITE 001	75	1.6882	LD	LD	.7865	
ARIZONA						
DUGLAS SITE 004	75	.4927	.2381	.1932	.3229	.3135
PHOENIX SITE 002	75	1.9227	1.1424	LD	3.1651	2.0766
TUCSON SITE 001	75	.7768	.4203	.4232	1.2671	.7394
ARKANSAS						
EL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	.7804	.8616	.7987	.9056	.8366
TEXARKANA SITE 001	75	.6038	.3447	LD	.3725	.4427
WEST MEMPHIS SITE 001	75	.8717	.6272	.7893	LD	.7627
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	2.1667	.8677	1.6897	2.4584	1.8456
BERKELEY SITE 001	75	.9539	.2654	.4864	1.0681	.6685
BURBANK SITE 002	75	3.5108	1.3804	2.0786	4.2430	2.9782
FRESNO SITE 002	75	.9205	.4785	.8240	1.5902	.9535
GLENDALF SITE 001	75	LD	LD	2.2491	2.8756	
LONG BEACH SITE 001	75	2.8196	1.0259	.9259	2.8476	1.9035
LOS ANGELES SITE 001	75	LD	1.2398	1.9115	3.2160	2.1274
OAKLAND SITE 001	75	.8325	.5125	.8479	1.9008	1.0234
ONTARIO SITE 001	75	2.0163	LD	LD	LD	
PASADENA SITE 002	75	1.7340	1.1579	1.2272	2.1651	1.6961
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	1.0974	.2184	.6546	1.6111	.8954
SAN BERNARDINO SITE 001	75	1.1649	1.2086	1.4057	1.7131	1.3731
SAN DIEGO SITE 004	75	1.5116	.8257	.4490	2.6422	1.3573
SAN FRANCISCO SITE 001	75	1.1791	.7943	.6492	1.2244	.9368

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	1.9984	.5924	.8967	2.1480	1.4482
SANTA ANA SITE 001	75	1.7277	.8309	.4082	3.1212	1.6318
TORRANCE SITE 001	75	2.8448	1.0641	.8418	3.4470	2.0484
COLORADO						
DENVER SITE 001	75	LD	.5907	1.2500	LD	
DENVER SITE 002	75	1.9722	1.1935	1.2802	2.2551	1.7523
CONNECTICUT						
BRIARCLIFF SITE 001	75	1.4774	1.1522	1.2501	1.2498	1.2824
HARTFORD SITE 002	75	.9471	.8466	.8483	.9075	.8874
NEW HAVEN SITE 001	75	1.3428	.9948	.6402	1.0380	1.0789
WATERBURY SITE 001	75	1.0695	1.5614	1.6900	1.7427	1.5179
WATERBURY SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	.3058	.3930	.3751	.5117	.4189
WILMINGTON SITE 002	75	.7790	LD	1.0692	1.5470	1.1384
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	1.0800	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	.9765	.7757	.8119	1.2765	.9427
MIAMI SITE 002	75	1.1001	1.2390	1.0694	1.0366	1.1121
ST PETERSBURG SITE 002	75	1.0039	.2745	.3574	.6400	.5690
TAMPA SITE 002	75	LD	LD	.7309	LD	
GEORGIA						
ATLANTA SITE 001	75	.8039	.7497	1.1781	1.0480	.9449
COLUMBUS SITE 001	75	.6772	.3675	.2891	.8836	.5544
SAVANNAH SITE 001	75	.4629	.4352	.4711	.6248	.4960
HAWAII						
MAUNA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	.6547	.8072	.5879	1.0544	.7761
IDAHO						
BOISE CITY SITE 001	75	LD	LD	.7022	1.5155	
ILLINOIS						
BLUE ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	.7477	1.5416	1.4784	1.2392
FAST ST LOUIS SITE 001	75	LD	LD	.8425	1.7294	
JOLIET SITE 001	75	.5118	LD	.5853	.9050	.6340
MOBILE SITE 001	75	.4609	.4956	.6714	.8525	.6201

REPORT NO : 12128 - LEAD  
 METHOD : HI-VAL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICRO METER (25 CI)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 PR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : 0.1740  
 95 PERCENT CONFIDENCE LIMITS  
 P125 (\*) 14 PRECISION (Y) = 24

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO						
SITE 002	75	.5364	LD	.7760	.7441	.6588
GEORGIA						
SITE 001	75	.3210	.7149	1.1779	1.1216	.8339
ROCKFORD						
SITE 001	75	.4433	.3948	LD	1.0454	.6118
ROCK ISLAND						
SITE 001	75	.3596	.4926	.6913	1.0987	.6508
SPRINGFIELD						
SITE 001	75	.3700	.4351	LD	.8131	.5394
INDIANA						
EAST CHICAGO						
SITE 001	75	2.1122	4.6105	LD	1.3595	2.4941
EVANSVILLE						
SITE 001	75	.3148	.2891	.7205	.8174	.5355
FORT WAYNE						
SITE 002	75	LD	.5756	LD	.8847	
FORT WAYNE						
SITE 003	75	LD	LD	LD	LD	
GARY						
SITE 001	75	.5782	LD	.8343	1.5240	.9788
HARMOND						
SITE 002	75	.8009	.7046	.9582	.8920	.8399
INDIANAPOLIS						
SITE 001	75	.7429	LD	LD	LD	
INDIANAPOLIS						
SITE 002	75	LD	LD	LD	LD	
MUNCIE						
SITE 001	75	LD	.8924	1.0389	LD	
NEW ALBANY						
SITE 002	75	LD	LD	.9913	1.8604	
SOUTH BEND						
SITE 002	75	.6976	.7280	.8239	.7394	.7472
TERRE HAUTE						
SITE 001	75	.3784	.4884	.5925	.6874	.5367
IOWA						
CEDAR RAPIDS						
SITE 01A	75	.4857	.4034	.3197	.6597	.4669
DAVENPORT						
SITE 001	75	.4358	LD	.6904	.9694	.7652
DES MOINES						
SITE 001	75	.7055	.6608	.8632	1.1744	.8515
DUBUQUE						
SITE 001	75	LD	LD	LD	LD	
DUBUQUE						
SITE 002	75	.1852	.2070	.2065	.1689	.1919
DUBUQUE						
SITE 00A	75	.1639	.1231	.2208	.3800	.2220
WATERLOO						
SITE 004	75	.4438	.3983	.3730	.8581	.5183
WATERLOO						
SITE 00A	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY						
SITE 002	75	.4550	LD	.3911	LD	
KANSAS CITY						
SITE 011	75	LD	LD	LD	LD	
KANSAS CITY						
SITE 012	75	.3124	.3846	.4027	.5540	.4139
KANSAS CITY						
SITE 015	75	LD	LD	LD	LD	
TOPEKA						
SITE 001	75	.4398	.2739	.2238	.5262	.3659

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA						
SITE 001	75	.3500	.2215	.2918	.6145	.3717
KENTUCKY						
ASHLAND						
SITE 002	75	.8127	1.3144	.7100	.6015	.8824
BOULING BROOK						
SITE 001	75	LD	.3020	.3400	.3002	.3470
COVINGTON						
SITE 001	75	.4941	.5642	.7470	LD	.6021
LEXINGTON						
SITE 001	75	.6927	.8825	LD	LD	
LOUISVILLE						
SITE 002	75	.6479	.7487	1.0093	.8077	.8139
LOUISIANA						
BATON ROUGE						
SITE 002	75	.6617	.6176	.7040	1.0084	.7679
IREPVILLE PAR						
SITE 002	75	.1920	LD	.2181	LD	
NEW ORLEANS						
SITE 002	75	1.0325	.7407	.7515	.8987	.8584
SHREVEPORT						
SITE 001	75	.4167	.3699	.8076	.8976	.6055
MAINE						
PORTLAND						
SITE 004	75	LD	LD	LD	.5087	
MARYLAND						
BALTIMORE						
SITE 001	75	.7282	.7842	1.0293	1.3030	.9712
MASSACHUSETTS						
BOSTON						
SITE 001	75	.8240	LD	LD	LD	
BOSTON						
SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE						
SITE 001	75	.5380	LD	LD	LD	
FALL RIVER						
SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD						
SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD						
SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD						
SITE 002	75	LD	LD	LD	1.4987	
WORCESTER						
SITE 004	75	LD	LD	.7845	.8863	
MICHIGAN						
DEARBORN						
SITE 001	75	.9555	LD	1.1619	1.0987	1.0720
DETROIT						
SITE 001	75	.8345	.6598	1.1978	1.1908	.9707
FLINT						
SITE 00A	75	.6053	LD	LD	.7887	
GRAND RAPIDS						
SITE 001	75	.9195	.7179	1.2026	1.1990	.9923
LANSING						
SITE 001	75	.8543	.4713	.7347	LD	.6868
SAGINAW						
SITE 001	75	.2931	.3514	.5527	.6693	.4666
TRENTON						
SITE 004	75	LD	LD	.6462	.7284	
MINNESOTA						
DULUTH						
SITE 001	75	.4242	LD	.4005	.5190	.4546
MINNEAPOLIS						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12128 - LEAD  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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 PR

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : 1.1749  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 14 PRECISION (%) 26

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA MINNEAPOLIS SITE 027	75	1.7584	1.0309	1.1375	2.1663	1.5232
MOOREHEAD SITE 001	75	LD	LD	LD	LD	
ST PAUL SITE 031	75	.9580	LD	3.2439	2.2625	2.1548
MISSISSIPPI JACKSON SITE 002	75	.6043	LD	.4303	.8428	.6265
MISSOURI KANSAS CITY SITE 002	75	LD	.5909	.7277	LD	
ST LOUIS SITE 001	75	1.0190	.9478	.8679	.8611	.9227
ST LOUIS SITE 072	75	LD	LD	LD	LD	
MONTANA HELENA SITE 001	75	LD	LD	.2104	.9187	
NEBRASKA LINCOLN SITE 002	75	.3081	.3916	.2585	.4955	.3634
OMAHA SITE 001	75	.5762	LD	LD	LD	
OMAHA SITE 030	75	LD	.7308	.6989	.9402	.7901
OMAHA SITE 034	75	LD	LD	LD	LD	
NEVADA LAS VEGAS SITE 001	75	2.0869	.8439	1.4287	2.9071	1.8167
NEVO SITE 001	75	1.4844	.5009	.6997	2.1538	1.1847
NEW HAMPSHIRE CONCORD SITE 002	75	.6152	LD	LD	.5583	
NEW JERSEY RAYONNE SITE 001	75	.7298	LD	.7285	.8544	.7709
CAMDEN SITE 001	75	.8160	1.0736	1.2265	1.2877	1.0997
CAMDEN CO SITE 002	75	LD	LD	LD	LD	
CAMDEN CO SITE 003	75	LD	.4783	.7757	.9111	.7215
ELIZARETH SITE 002	75	.8105	.9927	1.1012	1.3141	1.0521
GLASSBORO SITE 001	75	.7503	.3358	.6966	.4980	.6202
HAMILTON SITE 001	75	LD	LD	LD	LD	
JERSEY CITY SITE 001	75	1.0496	LD	1.1159	.7859	.9838
NEWARK SITE 001	75	.9095	LD	1.1824	1.2494	1.1138
PATERSON SITE 001	75	1.2354	LD	1.2205	LD	
PERTH AMBOY SITE 001	75	.5647	LD	1.1400	.8451	.8499
TRENTON SITE 001	75	.5994	.5376	1.3115	.9575	.8515
NEW MEXICO ALBUQUERQUE SITE 001	75	LD	.2807	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK ALBANY SITE 001	75	.5350	.4023	.4371	.6171	.4779
RUFFALO SITE 001	75	.4978	.6283	.7729	.8496	.6884
NEW YORK CITY SITE 019	75	.8166	.8389	.9751	1.0079	.9322
NIAGARA FALLS SITE 001	75	.4411	.3289	.5910	.4884	.4399
ROCHESTER SITE 001	75	.5324	.6154	.8130	.6851	.6417
SYRACUSE SITE 001	75	.8866	LD	.9741	.9715	.9119
UTICA SITE 001	75	.7750	.5428	1.0010	.6740	.7497
YONKERS SITE 001	75	.8192	1.2239	1.4070	1.2960	1.1865
NORTH CAROLINA CHAPLOTTE SITE 001	75	.4266	.5111	.6728	1.2360	.6866
DURHAM SITE 001	75	LD	.6229	.6019	LD	
DURHAM SITE 006	75	LD	LD	LD	LD	
GREENSBORO SITE 001	75	.5393	.3769	LD	LD	
GREENSBORO SITE 009	75	LD	LD	LD	1.1519	
WINSTON-SALEM SITE 002	75	.6705	.4830	.8595	1.2174	.8074
NORTH DAKOTA BISMARCK SITE 001	75	.8460	LD	LD	LD	
OHIO AKRON SITE 014	75	.6101	.4988	.7770	.7904	.6691
CANTON SITE 001	75	.6429	.5655	.8845	LD	.6976
CINCINNATI SITE 001	75	.5599	.7729	.9089	1.1973	.8423
CLEVELAND SITE 001	75	LD	LD	LD	LD	
COLUMBUS SITE 001	75	.4063	.5521	1.2307	.8401	.7573
DAYTON SITE 001	75	.5575	.5705	.9622	1.0466	.7842
SPRINTON SITE 009	75	.3837	.3424	.4583	.6155	.4550
MAHNSFIELD SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH SITE 002	75	.3332	.3588	.6160	LD	.4357
STUBENVILLE SITE 012	75	LD	LD	.8930	.6421	
TOLEDO SITE 001	75	.9362	.5020	.8853	LD	.6412
YOUNGSTOWN SITE 001	75	.3564	.4004	.6739	.8504	.5703
OKLAHOMA CHEROKEE CO SITE 480	75	LD	LD	LD	LD	
THUSA SITE 110	75	.4798	.4035	.3841	LD	.4211
OREGON EUGENE SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 1212P - LEAD  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAD  
 PB

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : 1.769  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 14 PRECISION (S) +/- 26

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
OREGON						
PORTLAND SITE 001	75	LD	LD	LD	LD	
PORTLAND SITE 001	75	LD	.6112	.7450	1.0365	.7976
PENNSYLVANIA						
ALLENTOWN SITE 001	75	.8546	.6091	.6342	.8682	.7415
ALTONNA SITE 001	75	.8248	LD	.5961	.6245	.6818
HERSHFHEM SITE 002	75	LD	LD	LD	LD	
ERIE SITE 002	75	LD	.2620	.2381	.5818	.3606
HARRISBURG SITE 001	75	LD	LD	LD	LD	
HARRISBURG SITE 361	75	LD	LD	LD	LD	
HAZLETON SITE 001	75	.7634	LD	LD	.7808	
JOHNSTOWN SITE 801	75	LD	LD	LD	LD	
LANCASTER CITY SITE 002	75	LD	LD	LD	1.0879	
PHILADELPHIA SITE 004	75	1.0668	1.0210	1.0492	1.1564	1.0739
PITTSBURGH SITE 001	75	.7947	.6351	1.0339	.8257	.8224
READING SITE 001	75	LD	.7207	LD	LD	
SCRANTON SITE 001	75	2.2858	1.9358	1.4547	LD	1.8921
WARMINSTER SITE 002	75	.5188	.6669	.8441	LD	.7099
WEST CHESTER SITE 110	75	.3055	.4303	.6205	.6958	.4880
WILKES-BARRE SITE 001	75	.6434	.6758	.6093	1.0444	.7432
YORK SITE 322	75	.7511	.6790	.8373	LD	.7558
PUERTO RICO						
RAYMON SITE 002	75	LD	LD	LD	LD	
CATANO SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	.1918	LD	.2809	.1713	.2145
GUAYANILLA SITE 001	75	LD	LD	LD	LD	
AMELIA SITE 001	75	.7556	LD	.9214	.7897	.8222
PONCE SITE 002	75	.5270	LD	.7183	1.4692	.9048
SERANA SECA SITE 001	75	.5488	.3883	.4379	1.0069	.5955
SAN JUAN SITE 001	75	LD	LD	LD	LD	
SAN JUAN SITE 001	75	1.3042	1.0873	1.4146	1.9287	1.4337
RHODE ISLAND						
FAST PROVIDENCE SITE 001	75	1.0337	.5806	.5968	LD	.7370

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE SITE 001	75	1.4640	LD	.9578	1.2111	1.2130
SOUTH CAROLINA						
COLUMBIA SITE 001	75	.7198	.9243	.6086	1.8025	1.0013
GREENVILLE SITE 001	75	.9213	.7979	1.0836	1.5217	1.0811
SOUTH DAKOTA						
SIOUX FALLS SITE 001	75	LD	LD	.3430	LD	
TENNESSEE						
CHATTANOOGA SITE 001	75	.3895	.4730	.7256	1.2101	.6996
KNOXVILLE SITE 002	75	.5949	.5140	.7998	1.2009	.7774
MEMPHIS SITE 001	75	1.5362	1.9807	1.9960	1.7760	1.8227
NASHVILLE SITE 001	75	.7174	.7550	.9927	LD	.8217
TEXAS						
AMARILLO SITE 002	75	LD	LD	LD	LD	
AUSTIN SITE 010	75	.5755	.6400	.7177	LD	.6444
REARLONT SITE 001	75	LD	LD	.7945	LD	
COPPUS CHRISTI SITE 001	75	.8819	LD	.9079	1.0578	.9491
DALLAS SITE 002	75	2.8598	2.3126	3.0390	2.8451	2.7691
EI PASO SITE 002	75	2.3383	1.2858	.6924	1.9748	1.5271
FORT WORTH SITE 001	75	.5964	.4335	.9472	.9627	.7350
HOUSTON SITE 001	75	2.2448	1.3238	1.9971	2.0936	1.9148
LURROCK SITE 001	75	.3688	LD	.5207	1.0050	.6615
PASADENA SITE 002	75	.9241	.8305	LD	.9103	.8883
SAN ANTONIO SITE 014	75	.8303	.5747	.5484	.9093	.7149
WICHITA FALLS SITE 002	75	.4367	.3659	LD	LD	
UTAH						
OGDEN SITE 001	75	LD	.4930	.7964	1.0999	1.0664
SALT LAKE CITY SITE 001	75	1.1963	.6986	.8126	1.8261	1.1335
VERMONT						
BURLINGTON SITE 003	75	.4064	1.3419	.6119	.8514	.8029
VIRGINIA						
DANVILLE SITE 001	75	.3706	.3959	LD	.7250	.4977
WELFAN SITE 001	75	LD	LD	LD	LD	
HAMPTON SITE 001	75	.4933	.4150	.3427	.5336	.4462
LYNCHBURG SITE 001	75	.6237	.6056	LD	.8091	.7095
LYNCHBURG SITE 002	75	LD	LD	.5607	LD	
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	





POLLUTANT : LEAD  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICROGRAMS PER CUBIC METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 PB

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : 0.1769  
 95 PERCENT CONFIDENCE LIMITS  
 0.125 (\*) 14 PRECISION (\*) +/- 26

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT PARK						
SITE 001	75	LD	LD	LD	LD	
ARIZONA						
COCHISE CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	LD	LD	
CALIFORNIA						
AMHURST CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
WESA VENTURE NAT PARK						
SITE 002	75	LD	LD	LD	LD	
OKLAHOMA						
WENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	0.9177	
FLORIDA						
HARVEY CO						
SITE 001	75	0.1628	LD	LD	LD	
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII VOLCANOES NAT						
SITE 001	75	LD	LD	LD	LD	
INDIANA						
WELLS CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	2.5360	1.8922	2.1356	LD	2.1879
INDIANA						
MONROE CO						
SITE 001	75	LD	LD	0.2305	0.2574	
PARKE CO						
SITE 001	75	LD	LD	LD	LD	
IPERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	0.1484	0.1344	LD	LD	
MARYLAND						
CALVERT CO						
SITE 001	75	LD	0.1302	LD	0.2490	
MISSISSIPPI						
JACKSON CO						
SITE 001	75	LD	0.1365	LD	0.1917	
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	LD	LD	LD	LD	
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	0.1486	LD	
FORT HOWES						
SITE 008	75	LD	LD	LD	LD	
ASHLAND						
SITE 006	75	LD	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
CROSS CO						
SITE 001	75	0.1785	LD	0.2480	0.2457	0.2241
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	0.1312	0.1414	LD	LD	
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
QUYTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	0.4571	LD	0.2713	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	1.5975	0.6031	0.9866	0.7218	0.9733
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	1.7553	1.3014	0.7461	1.4417	1.3111
OREGON						
CURRY CO						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	0.1436	LD	LD	LD	
INDIANA CO						
SITE 002	75	0.3308	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	1.4106	LD	1.0827	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	0.2555	LD	0.1796	0.3177	0.2509
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	0.1442	LD	0.1558	0.2981	0.1994
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	0.1504	LD	0.1541	LD	
TEXAS						
MATAGORRA CO						
SITE 001	75	LD	LD	LD	LD	
TOM GREEN CO						
SITE 001	75	LD	LD	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	0.2586	0.2144	0.2297	LD	0.2342
VIRGINIA						
SHEPHERD NAT PARK						
SITE 001	75	LD	LD	0.1857	0.3100	
WYTHE CO						
SITE 001	75	0.1332	LD	LD	0.1618	
WASHINGTON						
KING CO						
SITE 002	75	0.3084	0.4123	0.4990	0.4307	0.4501

POLLUTANT : 1217B - LEAD  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (75 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 PB

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (DL) .11769  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 14 PRECISION (Y) 24

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN						
DOOR CO						
SITE 001	75	LD	LD	LD	LD	
WYOMING						
GRAND TETON NAT PA						
SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA						
SITE 001	75	LD	LD	LD	LD	
VIRGIN ISLANDS						
ST THOMAS						
SITE 002	75	LD	.2045	.2242	LD	
ST CROIX						
SITE 004	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

POLLUTANT : 12132 - MANGANESE  
 METHOD : HI-VOL. EMISSION SPECTRA HUFFLE FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAG  
 MN

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0025  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 29 PRECISION (%) +/- 22

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	.0367	.0277	.0470	LD	.0371
GADSDEN SITE 001	75	.0357	.0345	.0317	LD	.0346
MOBILE SITE 001	75	.0189	LD	.0139	.0177	.0168
MOBILE SITE 001	75	.0322	.0243	LD	.0294	.0286
MONTGOMERY SITE 001	75	.0076	.0106	.0132	.0124	.0110
ALASKA						
ANCHORAGE SITE 003	75	LD	.0592	.0281	.0381	.0418
FAIRBANKS SITE 001	75	.0087	LD	LD	.0075	
ARIZONA						
DOUGLAS SITE 004	75	.0336	.0303	.0161	.0272	.0258
PHOENIX SITE 002	75	.0630	.0530	LD	.0658	.0606
TUCSON SITE 001	75	.0273	.0248	.0184	.0377	.0271
ARKANSAS						
EL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	.0198	.0222	.0234	.0146	.0200
TEXARKANA SITE 001	75	.0205	.0095	LD	.0114	.0138
WEST MEMPHIS SITE 001	75	.0421	.0480	.0282	LD	.0381
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	.0281	.0351	.0294	.0292	.0305
BERKELEY SITE 001	75	.0140	.0053	.0107	.0140	.0112
BURBANK SITE 002	75	.0402	.0153	.0251	.0459	.0316
FRESNO SITE 002	75	.0314	.0246	.0490	.0269	.0330
GLENDALE SITE 001	75	LD	LD	.0224	.0315	
LONG BEACH SITE 001	75	.0348	.0262	.0274	.0312	.0299
LOS ANGELES SITE 001	75	LD	.0235	.0200	.0404	.0280
OAKLAND SITE 001	75	.0192	.0193	.0177	.0289	.0213
ONTARIO SITE 001	75	.0588	LD	LD	LD	
PASADENA SITE 002	75	.0218	.0175	.0189	.0242	.0206
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	.0083	.0091	.0162	.0093	.0107
SAN BERNARDINO SITE 001	75	.0287	.0542	.0640	.0385	.0464
SAN DIEGO SITE 004	75	.0405	.0413	.0190	.0297	.0326
SAN FRANCISCO SITE 001	75	.0136	.0104	.0076	.0075	.0098

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	.0225	.0221	.0248	.0245	.0235
SANTA ANA SITE 001	75	.0181	.0287	.0206	.0246	.0230
TORRANCE SITE 001	75	.0491	.0304	.0136	.0241	.0293
COLORADO						
DENVER SITE 001	75	LD	.0276	.0608	LD	
DENVER SITE 002	75	.0191	.0398	.0329	.0278	.0611
CONNECTICUT						
BRIEGFORD SITE 001	75	.0270	.0201	.0127	.0192	.0198
HARTFORD SITE 002	75	.0250	.0186	.0108	.0123	.0167
NEW HAVEN SITE 001	75	.0323	.0259	.0169	.0176	.0229
WATERBURY SITE 001	75	.0345	.0379	.0271	.0177	.0293
WATERBURY SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	.0308	.0400	.0359	.0210	.0319
WILMINGTON SITE 002	75	.0675	LD	.0443	.0296	.0485
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	.0278	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	.0138	.0164	.0154	.0184	.0160
MIAMI SITE 002	75	.0070	.0097	.0070	.0054	.0073
ST PETERSBURG SITE 002	75	.0131	.0095	.0057	.0050	.0083
TAMPA SITE 002	75	LD	LD	.0119	LD	
GEORGIA						
ATLANTA SITE 001	75	.0155	.0151	.0191	.0118	.0154
COLUMBUS SITE 001	75	.0148	.0130	.0133	.0138	.0137
SAVANNAH SITE 001	75	.0146	.0198	.0185	.0195	.0181
HAWAII						
HAUHA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	.0067	.0080	.0054	.0065	.0067
IDAHO						
RISE CITY SITE 001	75	LD	LD	.0330	.0208	
ILLINOIS						
BLUF ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	.0392	.0272	.0246	.0203
EAST ST LOUIS SITE 001	75	LD	LD	.0854	.0891	
JOLIET SITE 001	75	.0369	LD	.0457	.0319	.0382
MOJINE SITE 001	75	.0524	.0553	.0535	.0534	.0537

POLLUTANT : 12132 - MANGANESE  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAB  
 MN

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0025  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (M) 29 PRECISION (S) 22

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	.0231	LD	.0390	.0332	.0318
PEORIA SITE 001	75	.0316	.0909	.1188	.0703	.0779
ROCKFORD SITE 001	75	.0221	.0230	LD	.0515	.0322
ROCK ISLAND SITE 001	75	.0344	.0537	.0534	.0613	.0507
SPRINGFIELD SITE 001	75	.0151	.0284	LD	.0367	.0267
INDIANA						
EAST CHICAGO SITE 001	75	.2140	.3284	LD	.3651	.3025
EVANSVILLE SITE 001	75	.0360	.0201	.0668	.1085	.0579
FORT WAYNE SITE 002	75	LD	.0208	LD	.0363	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	.1452	LD	.1388	.1776	.1539
HAMMOND SITE 002	75	.2159	.1009	.1471	.1085	.1431
INDIANAPOLIS SITE 001	75	.0253	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	.0210	.0260	LD	
NEW ALBANY SITE 002	75	LD	LD	.0346	.0304	
SOUTH BEND SITE 002	75	.0364	.0374	.0465	.0321	.0381
TERRE HAUTE SITE 001	75	.0178	.0368	.0657	.0353	.0389
IOWA						
CEDAR RAPIDS SITE 018	75	.0401	.0694	.0563	.0943	.0650
DAVENPORT SITE 001	75	.0347	LD	.0525	.0500	.0457
DES MOINES SITE 001	75	.0241	.0390	.0450	.0415	.0374
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	.0156	.0216	.0240	.0130	.0186
DUBUQUE SITE 008	75	.0228	.0267	.0312	.0290	.0274
WATERLOO SITE 004	75	.0303	.0372	.0372	.0490	.0384
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	.0357	LD	.0341	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	.0311	.0274	.0386	.0341	.0328
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	.0180	.0147	.0212	.0224	.0191

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	.0102	.0108	.0182	.0190	.0146
KENTUCKY						
ASHLAND SITE 002	75	.0571	.0652	.0393	.0449	.0516
ROWLING GREEN SITE 001	75	LD	.0127	.0149	.0084	.0120
COVINGTON SITE 001	75	.0230	.0254	.0570	LD	.0351
LEXINGTON SITE 001	75	.0245	.0331	LD	LD	
LOUISVILLE SITE 002	75	.0180	.0255	.0323	.0162	.0230
LOUISIANA						
BATON ROUGE SITE 002	75	.0093	.0122	.0145	.0120	.0120
IBERVILLE PAR SITE 002	75	.0118	LD	.0068	.0089	.0092
NEW ORLEANS SITE 002	75	.0180	.0140	.0114	.0137	.0143
SHREVEPORT SITE 001	75	.0470	.0345	.0293	.0496	.0401
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	.0137	
MARYLAND						
BALTIMORE SITE 001	75	.0637	.0638	.0340	.1030	.0661
MASSACHUSETTS						
BOSTON SITE 001	75	.0226	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	.0165	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	.0124	
WORCESTER SITE 004	75	LD	LD	.0110	.0135	
MICHIGAN						
DEARBORN SITE 001	75	.1961	LD	.1130	.0005	.1332
DETROIT SITE 001	75	.0747	.0924	.0776	.1162	.0902
FLINT SITE 008	75	.0557	LD	LD	.0265	
GRAND RAPIDS SITE 001	75	.0322	.0291	.0404	.0361	.0345
LANSING SITE 001	75	.0444	.0391	.0443	LD	.0426
SAGINAW SITE 001	75	.0214	.0360	.0380	.0434	.0347
TRFNTON SITE 004	75	LD	LD	.0322	.0595	
MINNESOTA						
DULUTH SITE 001	75	.0359	LD	.0445	.0242	.0349
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12132 - MANGANESE  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 MN

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0025  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 29 PRECISION (%) +/- 22

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	.0371	.0228	.0490	.0407	.0374
MORRHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	.0420	LD	.0448	.0436	.0435
MISSISSIPPI						
JACKSON						
SITE 002	75	.0150	LD	.0164	.0247	.0190
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	.0227	.0365	LD	
ST LOUIS						
SITE 001	75	.0629	.0553	.0571	.0364	.0529
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	.0103	.0285	
NEBRASKA						
LINCOLN						
SITE 002	75	.0147	.0230	.0185	.0376	.0222
OMAHA						
SITE 001	75	.0238	LD	LD	LD	
OMAHA						
SITE 030	75	LD	.0358	.0352	.0524	.0411
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	.0223	.0173	.0189	.0239	.0206
RENO						
SITE 001	75	.0426	.0168	.0190	.0458	.0311
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	.0111	LD	LD	.0088	
NEW JERSEY						
BAYONNE						
SITE 001	75	.0215	LD	.0193	.0255	.0221
CAMDEN						
SITE 001	75	.0443	.1261	.0534	.1064	.0826
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	.0143	.0180	.0302	.0208
ELIZABETH						
SITE 002	75	.0149	.0228	.0163	.0269	.0202
GLASSBORO						
SITE 001	75	.0215	.0098	.0153	.0129	.0149
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	.0279	LD	.0233	.0209	.0240
NEWARK						
SITE 001	75	.0235	LD	.0181	.0251	.0222
PATERSON						
SITE 001	75	.0267	LD	.0140	LD	
PERTH AMBOY						
SITE 001	75	.0196	LD	.0266	.0249	.0237
TRENTON						
SITE 001	75	.0240	.0187	.0336	.0288	.0263
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	.0140	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	.0176	.0181	.0137	.0161	.0164
RUFFALO						
SITE 001	75	.0367	.0482	.0376	.0441	.0417
NEW YORK CITY						
SITE 014	75	.0232	.0337	.0207	.0260	.0282
NIAGARA FALLS						
SITE 001	75	.1433	.1542	.1030	.1337	.1336
ROCHESTER						
SITE 001	75	.0176	.0247	.0291	.0231	.0241
SYRACUSE						
SITE 001	75	.0260	LD	.0301	.0267	.0276
UTICA						
SITE 001	75	.0543	.0837	.0346	.0442	.0542
YONKERS						
SITE 001	75	.0177	.0383	.0343	.0310	.0303
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	.0082	.0137	.0084	.0130	.0108
DURHAM						
SITE 001	75	LD	.0177	.0181	LD	
DURHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	.0197	.0182	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	.0122	
WINSTON-SALEM						
SITE 002	75	.0117	.0183	.0185	.0234	.0180
NORTH DAKOTA						
BISMARCK						
SITE 001	75	.0350	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	.0715	.0470	.0564	.0495	.0561
CANTON						
SITE 001	75	.1406	.1247	.1627	LD	.1427
CINCINNATI						
SITE 001	75	.0257	.0355	.0452	.0388	.0362
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	.0290	.0442	.0438	.0303	.0368
DAYTON						
SITE 001	75	.0256	.0305	.0360	.0443	.0341
FRONTON						
SITE 009	75	.0274	.0356	.0633	.0799	.0516
MANSFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	.0275	.0501	.0691	LD	.0489
STUBENVILLE						
SITE 012	75	LD	LD	.1245	.7229	
TOLEDO						
SITE 001	75	.0403	.0318	.0357	LD	.0359
YOUNGSTOWN						
SITE 001	75	.0563	.0857	.1063	.1437	.0980
OKLAHOMA						
CHOKKOFF CO						
SITE 480	75	.0083	LD	LD	LD	
TULSA						
SITE 110	75	.0208	.0329	.0315	LD	.0284
OREGON						
EUGENE						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12132 - MANGANESE  
 METHOD : HI-VOL FISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER 125 C1  
 DATA TYPE : QUARTERLY COMPOSITE

UPPER  
 MN

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0025  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (K) 29 PRECISION (K) 22

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
OREGON						
MEDFORD SITE 001	75	LD	LD	LD	LD	
PORTLAND SITE 001	75	LD	.0748	.0580	.0250	.0526
PENNSYLVANIA						
ALLENTOWN SITE 001	75	.0414	.0309	.0184	.0292	.0300
ALTOONA SITE 001	75	.0417	LD	.0265	.0219	.0300
BETHLEHEM SITE 002	75	LD	LD	LD	LD	
EPF SITE 002	75	LD	.0601	.0344	.0540	.0495
HARRISBURG SITE 001	75	LD	LD	LD	LD	
HARRISBURG SITE 361	75	LD	LD	LD	LD	
HAZLETON SITE 001	75	.0524	LD	LD	.0314	
JOHNSTOWN SITE 003	75	LD	LD	LD	LD	
LANCASTER CITY SITE 002	75	LD	LD	LD	.0407	
PHILADELPHIA SITE 004	75	.0575	.0595	.0306	.0339	.0454
PITTSBURGH SITE 001	75	.1375	.0875	.1019	.1199	.1100
READING SITE 001	75	LD	.0207	LD	LD	
SCRANTON SITE 001	75	.1759	.0774	.0627	LD	.1053
WARMINSTER SITE 002	75	.0185	.0291	.0384	LD	.0287
WEST CHESTER SITE 110	75	.0175	.0165	.0165	.0240	.0184
WILKES-BARRE SITE 001	75	.0354	.0344	.0258	.0369	.0332
YORK SITE 322	75	.0418	.0414	.0344	LD	.0392
PUERTO RICO						
BAYAMON SITE 002	75	LD	LD	LD	LD	
CATANO SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	.0122	.0177	.0344	.0096	.0190
GUAYANILLA SITE 003	75	LD	LD	LD	LD	
AMELIA SITE 001	75	.0204	LD	.0282	.0142	.0209
PONCE SITE 002	75	.0112	LD	.0297	.0274	.0228
SEBANA SECA SITE 001	75	.0354	.0255	.0258	.0249	.0279
SAN JUAN SITE 001	75	LD	LD	LD	LD	
SAN JUAN SITE 001	75	.0192	.0219	.0285	.0172	.0217
RHODE ISLAND						
EAST PROVIDENCE SITE 001	75	.0173	.0173	.0117	LD	.0153

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE SITE 001	75	.0254	LD	.0127	.0150	.0177
SOUTH CAROLINA						
COLUMBIA SITE 001	75	.0245	.0322	.0090	.0371	.0257
GREENVILLE SITE 001	75	.0135	.0107	.0070	.0078	.0098
SOUTH DAKOTA						
SIOUX FALLS SITE 001	75	LD	LD	.0760	LD	
TENNESSEE						
CHATTANOOGA SITE 001	75	.0343	.0408	.0511	.1117	.0595
KNOXVILLE SITE 002	75	.0232	.0273	.0272	.0209	.0272
MEMPHIS SITE 001	75	.0207	.0246	.0396	.0287	.0292
NASHVILLE SITE 001	75	.0402	.0443	.0493	LD	.0443
TEXAS						
AMARILLO SITE 002	75	LD	LD	LD	LD	
AUSTIN SITE 010	75	.0090	.0098	.0082	LD	.0090
BEAUMONT SITE 001	75	LD	LD	.0215	LD	
COPPUS CHRISTI SITE 001	75	.0213	LD	.0140	.0156	.0143
DALLAS SITE 002	75	.0356	.0398	.0476	.0426	.0414
EL PASO SITE 002	75	.0571	.0509	.0303	.0258	.0535
FORT WORTH SITE 001	75	.0160	.0158	.0234	.0273	.0206
HOUSTON SITE 001	75	.0371	.0331	.0455	.0438	.0399
LIRBROCK SITE 001	75	.0135	LD	.0204	.0160	.0233
PASADENA SITE 002	75	.0551	.1172	LD	.0653	.0792
SAN ANTONIO SITE 034	75	.0100	.0097	.0107	.0100	.0101
WICHITA FALLS SITE 002	75	.0334	.0436	LD	LD	
UTAH						
OGDEN SITE 001	75	LD	.0196	.0231	.0197	.0275
SALT LAKE CITY SITE 001	75	.0332	.0156	.0202	.0425	.0279
VERMONT						
BURLINGTON SITE 003	75	.0193	.0449	.0216	.0173	.0258
VIRGINIA						
DANVILLE SITE 001	75	.0093	.0117	LD	.0126	.0112
NCLIFAN SITE 001	75	LD	LD	LD	LD	
HAMPTON SITE 001	75	.0368	.0177	.0126	.0153	.0206
LYNCHBURG SITE 001	75	.0338	.0371	LD	.0186	.0598
LYNCHBURG SITE 002	75	LD	LD	.0383	LD	
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	





POLLUTANT : 12132 - MANGANESE  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 MN

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0025  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 20 PRECISION (S) 22

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
ARIZONA						
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	.0080	.0049	.0042	.0057
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
NEVA VERDE NAT PAR						
SITE 002	75	.0029	LD	.0045	LD	
DELAWARE						
DELT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	.0197	
FLORIDA						
WARDE CO						
SITE 001	75	.0057	.0046	LD	LD	
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	.0058	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BLUETTE CO						
SITE 001	75	LD	.0031	.0021	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.0070	.0424	.0494	LD	.0540
INDIANA						
MONROE CO						
SITE 001	75	LD	.0142	.0284	.0400	.0282
PARKE CO						
SITE 001	75	LD	.0145	LD	LD	
INTERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.0076	.0105	LD	.0044	.0075
MARYLAND						
CALVERT CO						
SITE 001	75	LD	.0091	.0101	.0086	.0094
MISSISSIPPI						
JACKSON CO						
SITE 001	75	.0028	.0051	LD	.0090	.0056
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	.0033	.0080	.0136	.0105	.0089
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	.0058	LD	
FORT HOWES						
SITE 008	75	LD	LD	.0060	.0067	
ASHLAND						
SITE 026	75	.0032	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	.0046	.0261	.0106	LD	.0071

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	.0115	.0052	LD	
NEW HAMPSHIRE						
COS CO						
SITE 001	75	.0069	.0085	.0100	.0080	.0106
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	.0116	.0259	.0110	LD	.0142
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0291	LD	.0296	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	.0255	.0172	.0301	.0297	.0257
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	.0263	.0272	.0332	.0377	.0311
OREGON						
CURRY CO						
SITE 001	75	LD	.0047	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	.0182	LD	LD	LD	
INDIANA CO						
SITE 002	75	.0309	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.0505	LD	.0342	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	.0084	LD	.0049	.0060	.0067
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	.0060	.0061	.0037	.0074	.0056
SOUTH DAKOTA						
BLACK HILLS NAT P						
SITE 001	75	LD	LD	.0060	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	.0105	.0101	.0151	.0082	.0110
TEXAS						
MATAGORDA CO						
SITE 001	75	.0044	.0069	.0100	.0034	.0062
TOM GREEN CO						
SITE 001	75	LD	.0107	.0052	.0072	.0077
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	.0204	.0140	.0132	LD	.0159
VIRGINIA						
SHENANDOAH NAT PAR						
SITE 001	75	.0032	LD	.0032	.0056	.0040
WYTHE CO						
SITE 001	75	.0058	LD	.0038	.0054	.0050
WASHINGTON						
KING CO						
SITE 002	75	.0063	.0124	.0085	.0026	.0077



POLLUTANT : 12136 - NICKEL  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0021  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 21 PRECISION (S) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM SITE 003	75	LD	LD	.0114	LD	
CADSDEN SITE 001	75	LD	LD	LD	LD	
HUNTSVILLE SITE 001	75	LD	LD	LD	.0098	
MORILE SITE 001	75	LD	LD	LD	LD	
MONTGOMERY SITE 001	75	LD	LD	LD	LD	
ALASKA						
ANCHORAGE SITE 003	75	LD	LD	LD	LD	
FAIRBANKS SITE 001	75	.0266	LD	LD	LD	
ARIZONA						
DOUGLAS SITE 004	75	.0247	LD	LD	LD	
PHOENIX SITE 002	75	.0133	LD	LD	.0134	
TUCSON SITE 001	75	.0174	LD	LD	LD	
ARKANSAS						
FLORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	LD	LD	LD	LD	
TEXARKANA SITE 001	75	LD	.0173	LD	LD	
WEST MEMPHIS SITE 001	75	.0165	LD	LD	LD	
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM SITE 001	75	.0216	.0170	.0421	.0279	.0277
BERKELEY SITE 001	75	LD	LD	LD	.0145	
BURBANK SITE 002	75	.0374	LD	.0283	.0374	.0327
FRESNO SITE 002	75	LD	LD	LD	.0137	
GLENDALE SITE 001	75	LD	LD	.0222	.0317	
LONG BEACH SITE 001	75	.0389	.0275	.0525	.0312	.0375
LOS ANGELES SITE 001	75	LD	.0194	.0216	.0331	.0247
OAKLAND SITE 001	75	.0110	LD	.0098	.0191	.0133
ONTARIO SITE 001	75	.0357	LD	LD	LD	
PASADENA SITE 002	75	.0228	.0258	.0318	.0194	.0250
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	LD	LD	LD	.0165	
SAN BERNARDINO SITE 001	75	.0241	.0232	.0224	.0216	.0228
SAN DIEGO SITE 004	75	.0153	.0108	.0105	.0122	.0122
SAN FRANCISCO SITE 001	75	.0114	LD	LD	.0141	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE SITE 004	75	.0118	LD	LD	.0177	
SANTA ANA SITE 001	75	.0165	.0173	.0231	.0289	.0200
TORRANCE SITE 001	75	.0444	.0243	.0260	.0201	.0432
COLORADO						
DENVER SITE 001	75	LD	LD	LD	LD	
DENVER SITE 002	75	LD	LD	LD	LD	
CONNECTICUT						
BRIDGEPORT SITE 001	75	.0358	.0201	LD	.0279	.0279
HARTFORD SITE 002	75	.0198	.0120	LD	.0203	.0174
NEW HAVEN SITE 001	75	.0580	.0253	.0200	.0396	.0360
WATERBURY SITE 001	75	.0192	.0223	.0127	.0123	.0166
WATERBURY SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK SITE 001	75	.0217	.0168	.0100	.0179	.0168
WILMINGTON SITE 002	75	.0234	LD	.0202	.0391	.0306
DISTRICT OF COLUMBIA						
WASHINGTON SITE 001	75	.0315	LD	LD	LD	
FLORIDA						
JACKSONVILLE SITE 002	75	.0200	.0324	.0238	.0342	.0275
MIAMI SITE 002	75	.0239	.0246	.0120	.0118	.0181
ST PETERSBURG SITE 002	75	LD	.0096	LD	.0102	
TAMPA SITE 002	75	LD	LD	.0126	LD	
GEORGIA						
ATLANTA SITE 001	75	LD	.0121	LD	LD	
COLUMBUS SITE 001	75	.0136	.0097	LD	LD	
SAVANNAH SITE 001	75	.0165	LD	.0288	.0250	.0233
HAWAII						
MAUIA LGA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	.0369	.0461	.0515	.0617	.0491
IDAHO						
BOISE CITY SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
BLUFF ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	.0219	.0222	.0288	.0241
EAST ST LOUIS SITE 001	75	LD	LD	LD	LD	
JOLIET SITE 001	75	LD	LD	.0244	LD	
MOLINE SITE 001	75	.0138	.0145	.0173	LD	.0182

POLLUTANT : 1213A - HICKFL  
 METHOD : HI-VOL EMISSION SPECTRA HUFFLE FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) 0.001  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 21 PRECISION (%) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	0.0112	LD	0.0092	LD	
INDIANA						
INDIANA SITE 001	75	LD	LD	0.0166	0.0154	
INDIANA SITE 001	75	LD	LD	LD	LD	
INDIANA SITE 001	75	0.0113	LD	0.0127	LD	
INDIANA SITE 001	75	LD	LD	LD	0.0154	
INDIANA						
EAST CHICAGO SITE 001	75	0.0618	0.0707	LD	0.0654	0.0660
INDIANA SITE 001	75	0.0306	0.0125	0.0126	0.0109	0.0167
INDIANA SITE 002	75	LD	0.0233	LD	0.0126	
INDIANA SITE 003	75	LD	LD	LD	LD	
INDIANA SITE 001	75	0.0495	LD	0.0261	0.0297	0.0351
INDIANA SITE 002	75	0.0326	0.0244	0.0166	0.0154	0.0234
INDIANA SITE 001	75	0.0132	LD	LD	LD	
INDIANA SITE 002	75	LD	LD	LD	LD	
INDIANA SITE 001	75	LD	0.0173	LD	LD	
INDIANA SITE 002	75	LD	LD	0.0181	0.0164	
INDIANA SITE 002	75	0.0172	0.0126	0.0137	LD	0.0145
INDIANA SITE 001	75	0.0134	0.0137	LD	0.0240	0.0187
IOWA						
IOWA SITE 018	75	LD	LD	LD	0.0104	
IOWA SITE 001	75	LD	LD	LD	LD	
IOWA SITE 001	75	LD	LD	LD	LD	
IOWA SITE 001	75	LD	LD	LD	LD	
IOWA SITE 001	75	LD	LD	LD	LD	
IOWA SITE 004	75	LD	0.0100	0.0098	LD	
IOWA SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS SITE 002	75	LD	LD	LD	LD	
KANSAS SITE 011	75	LD	LD	LD	LD	
KANSAS SITE 012	75	0.0154	LD	LD	LD	
KANSAS SITE 015	75	LD	LD	LD	LD	
KANSAS SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
KANSAS SITE 001	75	LD	LD	LD	LD	
KENTUCKY						
KENTUCKY SITE 002	75	0.0224	0.0190	LD	0.0097	0.0170
KENTUCKY SITE 001	75	LD	LD	LD	LD	
KENTUCKY SITE 001	75	LD	LD	LD	LD	
KENTUCKY SITE 001	75	LD	LD	LD	LD	
KENTUCKY SITE 001	75	LD	LD	LD	LD	
KENTUCKY SITE 002	75	0.0318	0.0244	0.0238	0.0404	0.0302
LOUISIANA						
LOUISIANA SITE 002	75	LD	LD	0.0186	LD	
LOUISIANA SITE 002	75	LD	LD	0.0146	LD	
LOUISIANA SITE 002	75	LD	LD	0.0270	LD	
LOUISIANA SITE 001	75	LD	LD	LD	LD	
LOUISIANA SITE 004	75	LD	LD	LD	LD	
LOUISIANA SITE 001	75	0.0350	0.0180	0.0133	0.0203	0.0217
MASSACHUSETTS						
MASSACHUSETTS SITE 001	75	0.0381	LD	LD	LD	
MASSACHUSETTS SITE 012	75	LD	LD	LD	LD	
MASSACHUSETTS SITE 001	75	0.0254	LD	LD	LD	
MASSACHUSETTS SITE 001	75	LD	LD	LD	LD	
MASSACHUSETTS SITE 002	75	LD	LD	LD	LD	
MASSACHUSETTS SITE 004	75	LD	LD	0.0172	0.0240	
MICHIGAN						
MICHIGAN SITE 001	75	0.0219	LD	0.0146	0.0154	0.0173
MICHIGAN SITE 001	75	0.0187	0.0137	LD	0.0146	0.0157
MICHIGAN SITE 008	75	0.0110	LD	LD	LD	
MICHIGAN SITE 001	75	LD	LD	LD	LD	
MICHIGAN SITE 001	75	0.0139	LD	0.0148	LD	
MICHIGAN SITE 001	75	LD	LD	LD	LD	
MICHIGAN SITE 004	75	LD	LD	LD	LD	
MINNESOTA						
MINNESOTA SITE 001	75	LD	LD	LD	LD	
MINNESOTA SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12136 - NICKEL  
 METHOD : M1-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CC METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0001  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 21 PRECISION (Y) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	.0173	LD	LD	LD	
MOORHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	.0172	LD	LD	.0115	
MISSISSIPPI						
JACKSON						
SITE 002	75	LD	LD	LD	LD	
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	.0152	LD	LD	
ST LOUIS						
SITE 001	75	.0107	.0111	LD	.0127	.0115
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	LD	.0260	
NEBRASKA						
LINCOLN						
SITE 002	75	.0128	.0120	.0152	LD	.0133
OMAHA						
SITE 001	75	LD	LD	LD	LD	
OMAHA						
SITE 030	75	LD	LD	LD	.0102	
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	LD	LD	LD	.0097	
RENO						
SITE 001	75	.0254	.0316	.0187	.0324	.0270
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	.0248	LD	LD	.0181	
NEW JERSEY						
BAYONNE						
SITE 001	75	.0261	LD	.0180	.0265	.0235
CAMDEN						
SITE 001	75	.0269	.0456	.0228	.0329	.0321
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	.0150	.0136	.0277	.0171
ELIZABETH						
SITE 002	75	.0214	.0395	.0157	.0278	.0261
GLASSBORO						
SITE 001	75	.0328	.0133	.0240	.0123	.0221
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	.0359	LD	.0228	.0238	.0275
NEWARK						
SITE 001	75	.0172	LD	.0116	.0261	.0183
PATERSON						
SITE 001	75	.0201	LD	.0200	LD	
PERTH AMBOY						
SITE 001	75	.0136	LD	.0218	.0301	.0218
TRENTON						
SITE 001	75	.0248	.0243	.0291	.0323	.0276
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	.0117	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	.0414	.0272	.0202	.0365	.0315
RUFFALO						
SITE 001	75	.0177	.0153	.0118	.0228	.0189
NEW YORK CITY						
SITE 014	75	.0374	.0343	.0303	.0230	.0320
NIAGARA FALLS						
SITE 001	75	.0281	.0262	.0196	.0172	.0230
ROCHESTER						
SITE 001	75	.0123	.0132	.0114	.0095	.0116
SYRACUSE						
SITE 001	75	.0159	LD	.0109	.0124	.0131
UTICA						
SITE 001	75	.0248	.0172	.0180	.0474	.0271
YONKERS						
SITE 001	75	.0172	.0249	.0189	.0281	.0223
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	.0105	LD	LD	.0132	
DURHAM						
SITE 001	75	LD	.0144	.0116	LD	
DURHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	.0125	LD	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	.0209	
WINSTON-SALEM						
SITE 002	75	LD	LD	LD	.0135	
NORTH DAKOTA						
BISMARCK						
SITE 001	75	.0427	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	.0262	.0158	.0198	.0161	.0195
CANTON						
SITE 001	75	.0255	.0178	.0251	LD	.0228
CINCINNATI						
SITE 001	75	.0230	.0189	.0144	.0159	.0181
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	.0241	.0355	.0173	.0171	.0235
DAYTON						
SITE 001	75	.0122	.0169	LD	.0092	.0128
SPRINGFIELD						
SITE 009	75	.0139	.0136	LD	.0225	.0167
MAKESFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	LD	.0115	LD	LD	
STURBEVILLE						
SITE 012	75	LD	LD	.0346	.0125	
TOLLEDO						
SITE 001	75	.0145	.0144	LD	LD	
YOUNGSTOWN						
SITE 001	75	.0092	.0192	.0104	.0130	.0130
OKLAHOMA						
CHEPOKFF CO						
SITE 480	75	LD	LD	LD	LD	
TINSA						
SITE 110	75	LD	LD	LD	LD	
OREGON						
EUGENE						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 1213A - NICKEL  
 METHOD : HI-VOL EMISSION SPECTRA NICKEL FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0001  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 21 PRECISION (X) +/- 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CONNECTICUT						
MIDDLETOWN						
SITE 001	75	LD	LD	LD	LD	
PORTLAND						
SITE 001	75	LD	.0350	.0219	.0527	.0366
PENNSYLVANIA						
ALLENTOWN						
SITE 001	75	.0274	.0251	.0098	.0221	.0211
ALBANY						
SITE 001	75	LD	LD	LD	LD	
REHOBETH						
SITE 002	75	LD	LD	LD	LD	
ENID						
SITE 002	75	LD	LD	LD	.0123	
HARRISBURG						
SITE 001	75	LD	LD	LD	LD	
HARRISBURG						
SITE 361	75	LD	LD	LD	LD	
HAYLETON						
SITE 001	75	.0137	LD	LD	LD	
JANNSTOWN						
SITE 003	75	LD	LD	LD	LD	
LANCASTER CITY						
SITE 002	75	LD	LD	LD	.0203	
PHILADELPHIA						
SITE 004	75	.0377	.0316	.0153	.0345	.0297
PITTSBURGH						
SITE 001	75	.0246	.0101	.0196	.0109	.0163
READING						
SITE 001	75	LD	.0264	LD	LD	
SCRANTON						
SITE 001	75	.0195	.0157	.0410	LD	.0254
WARMINSTER						
SITE 002	75	.0411	.0558	LD	LD	
WEST CHESTER						
SITE 110	75	.0447	.0326	.0204	.0163	.0285
WILKES-BARRE						
SITE 001	75	.0429	.0111	.0581	.0177	.0312
YORK						
SITE 322	75	.0923	.0324	.0289	LD	.0513
Puerto Rico						
BAYAMON						
SITE 002	75	LD	LD	LD	LD	
CATANO						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
SITE 002	75	.0168	.0199	.0224	.0183	.0194
GUAYANILLA						
SITE 003	75	LD	LD	LD	LD	
AMELIA						
SITE 001	75	.0286	LD	.0383	.0277	.0314
POUCE						
SITE 002	75	.0103	LD	LD	.0110	
SEBANA SECA						
SITE 001	75	.0170	.0099	LD	.0260	.0179
SAN JUAN						
SITE 001	75	LD	LD	LD	LD	
SAN JUAN						
SITE 001	75	.0097	.0103	LD	.0110	.0103
RHODE ISLAND						
EAST PROVIDENCE						
SITE 001	75	.0294	.0155	.0153	LD	.0201

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE						
SITE 001	75	.0606	LD	.0141	.0266	.0344
SOUTH CAROLINA						
COLUMBIA						
SITE 001	75	.0098	.0094	LD	LD	
GOFFSVILLE						
SITE 001	75	.0097	.0124	.0100	.0098	.0105
SOUTH DAKOTA						
SIOUX FALLS						
SITE 001	75	LD	LD	.0137	LD	
TENNESSEE						
CHATTANOOGA						
SITE 001	75	LD	LD	.0135	.0160	
KNOXVILLE						
SITE 002	75	LD	LD	LD	.0136	
MEMPHIS						
SITE 001	75	.0127	LD	LD	LD	
NASHVILLE						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
AMARILLO						
SITE 002	75	LD	LD	LD	LD	
AUSTIN						
SITE 010	75	LD	LD	LD	LD	
BEAUMONT						
SITE 001	75	LD	LD	LD	LD	
CORPUS CHRISTI						
SITE 001	75	LD	LD	LD	LD	
DALLAS						
SITE 002	75	LD	LD	LD	LD	
EL PASO						
SITE 002	75	LD	LD	LD	LD	
FORT WORTH						
SITE 001	75	LD	.0228	LD	LD	
HOUSTON						
SITE 001	75	.0146	.0406	.0311	.0282	.0286
LIRBROCK						
SITE 001	75	LD	LD	LD	.0168	
PASADENA						
SITE 002	75	.0301	.0472	LD	.0779	.0501
SAN ANTONIO						
SITE 034	75	LD	LD	LD	LD	
WICHITA FALLS						
SITE 002	75	LD	LD	LD	LD	
UTAH						
OGDEN						
SITE 001	75	LD	LD	LD	.0132	
SALT LAKE CITY						
SITE 001	75	.0092	LD	.0131	.0105	.0109
VERMONT						
BURLINGTON						
SITE 003	75	.0148	.0198	LD	.0186	.0177
VIRGINIA						
DANVILLE						
SITE 001	75	.0179	.0135	LD	LD	
MCIFAN						
SITE 001	75	LD	LD	LD	LD	
HAMPTON						
SITE 001	75	.0191	.0149	.0119	.0137	.0148
LYNCHBURG						
SITE 001	75	LD	LD	LD	.0126	
LYNCHBURG						
SITE 002	75	LD	LD	LD	LD	
NEWPORT NEWS						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : J2136 - NICKEL  
METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
UNITS : UG/CU METER (25 C)  
DATA TYPE : QUARTERLY COMPOSITE

URBAN  
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ANALYTICAL QUALITY  
ANALYTICAL DISCRIMINATION LIMIT (LD) .0021  
95 PERCENT CONFIDENCE LIMITS  
BIAS (+) 2) PRECISION (+) 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
VIRGINIA						
NORFOLK						
SITE 001	75	LD	.0140	.0127	.0332	.0206
PORTSMOUTH						
SITE 001	75	.0331	LD	LD	.0235	
RICHMOND						
SITE 002	75	.0334	.0379	.0222	.0341	.0302
ROANOKE						
SITE 003	75	LD	LD	LD	LD	
WASHINGTON						
SEATTLE						
SITE 001	75	LD	.0159	LD	.0438	
SPOKANE						
SITE 001	75	LD	LD	LD	.0222	
TACOMA						
SITE 001	75	.0266	.0127	LD	.0357	.0250
WEST VIRGINIA						
CHARLESTON						
SITE 001	75	LD	LD	LD	LD	
HUNTINGTON						
SITE 006	75	.0478	LD	LD	LD	
SOUTH CHARLESTON						
SITE 001	75	LD	LD	LD	LD	
WISCONSIN						
FAU CLAIRE						
SITE 002	75	.0105	.0198	LD	LD	
KENOSHA						
SITE 001	75	LD	LD	.0134	.0303	
KENOSHA						
SITE 003	75	LD	LD	LD	LD	
MADISON						
SITE 001	75	.0129	LD	LD	LD	
MILWAUKEE						
SITE 001	75	.0245	.0143	LD	.0153	.0180
MILWAUKEE						
SITE 099	75	LD	LD	LD	LD	
RACINE						
SITE 002	75	.0105	.0093	LD	.0360	.0186
SUPERIOR						
SITE 001	75	.0146	.0202	LD	.0191	.0180
WYOMING						
CASPER						
SITE 001	75	LD	LD	LD	.0141	
CHEYENNE						
SITE 001	75	LD	.0111	.0117	.0103	.0110
VIRGIN ISLANDS						
ST CROIX						
SITE 008	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
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POLLUTANT : 1211A - NICKEL  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : US/CG AFTER (75 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-UPRAN  
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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : .0001  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 21 PRECISION (%) +/- 52

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
ARKANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	LD	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MESA VERDE NAT PAR						
SITE 002	75	LD	LD	LD	LD	
DELAWARE						
DELT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	.0196	
FLORIDA						
HARDEE CO						
SITE 001	75	LD	LD	LD	LD	
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BLTTE CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.0617	.0274	.0245	LD	.0379
INDIANA						
HONROE CO						
SITE 001	75	LD	LD	LD	LD	
PARKE CO						
SITE 001	75	LD	LD	LD	LD	
IRERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.0365	.0236	LD	LD	
MARYLAND						
CALVERT CO						
SITE 001	75	LD	.0253	LD	LD	
MISSISSIPPI						
JACKSON CO						
SITE 001	75	LD	LD	LD	.0109	
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	LD	LD	.0221	LD	
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	LD	LD	
FORT HOWES						
SITE 008	75	LD	LD	LD	LD	
ASHLAND						
SITE 026	75	.0121	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
COS CO						
SITE 001	75	.0182	LD	.0446	.0113	.0447
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	.0134	LD	LD	LD	
NORTH CAROLINA						
CAMP HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
RUXTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0511	LD	.0185	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	.0189	.0180	
OREGON						
CURRY CO						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	LD	LD	LD	LD	
INDIANA CO						
SITE 002	75	.0125	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.0332	LD	.0171	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	LD	LD	LD	.0271	
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	LD	LD	LD	.0118	
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	.0095	LD	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
HATAGORDA CO						
SITE 001	75	LD	LD	LD	LD	
TOM GREFF CO						
SITE 001	75	LD	LD	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	.0196	.0239	.0154	LD	.0196
VIRGINIA						
SHEMANDOAH NAT PAR						
SITE 001	75	LD	LD	LD	LD	
WYTHE CO						
SITE 001	75	LD	LD	LD	LD	
WASHINGTON						
KING CO						
SITE 002	75	LD	LD	LD	LD	



POLLUTANT : 12136 - NICKEL  
METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
UNITS : UG/QU METER (25 C)  
DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
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ANALYTICAL QUALITY  
ANALYTICAL DISCRIMINATION LIMIT (LD) .0001  
95 PERCENT CONFIDENCE LIMITS  
BIAS (%) 21 PRECISION (%) 4.5

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN DOOR CO SITE 001	75	LD	LD	LD	LD	
WYOMING GRAND TETON NAT PA SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA SITE 001	75	LD	LD	0.270	LD	
VIRGIN ISLANDS ST THOMAS SITE 002	75	LD	0.112	0.110	LD	
ST CHOIX SITE 004	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

POLLUTANT : TITANIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/GU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0076  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (#) 42 PRECISION (%) 54

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ALABAMA						
BIRMINGHAM						
SITE 001	75	.0143	.0150	.0142	LD	.0158
GADSDEN						
SITE 001	75	.0189	.0207	.0215	LD	.0204
HUNTSVILLE						
SITE 001	75	.0118	LD	.0086	.0090	.0098
MOBILE						
SITE 001	75	.0178	.0270	LD	.0244	.0214
MONTGOMERY						
SITE 001	75	.0074	.0123	.0142	.0138	.0119
ALASKA						
ANCHORAGE						
SITE 003	75	LD	.1643	.0743	.1010	.1139
FAIRBANKS						
SITE 001	75	.0269	LD	LD	.0267	
ARIZONA						
DOUGLAS						
SITE 004	75	.0674	.0474	.0206	.0344	.0417
PHOENIX						
SITE 002	75	.1197	.1083	LD	.1186	.1155
TUCSON						
SITE 001	75	.0397	.0407	.0334	.0547	.0420
ARKANSAS						
EL DORADO						
SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK						
SITE 001	75	.0275	.0299	.0310	.0198	.0271
TEXARKANA						
SITE 001	75	.0841	.0075	LD	.0095	.0337
WEST MEMPHIS						
SITE 001	75	.0919	.0358	.0195	LD	.0491
WEST MEMPHIS						
SITE 004	75	LD	LD	LD	LD	
CALIFORNIA						
ANAHEIM						
SITE 001	75	.0672	.0556	.0714	.0765	.0677
BERKELEY						
SITE 001	75	.0923	.0105	.0147	.0155	.0333
BURBANK						
SITE 002	75	.0999	.0523	.0741	.1073	.0834
FRESNO						
SITE 002	75	.1291	.0764	.1646	.0746	.1112
GLFNDALE						
SITE 001	75	LD	LD	.0566	.0791	
LONG BEACH						
SITE 001	75	.0688	.0568	.0602	.0740	.0650
LOS ANGELES						
SITE 001	75	LD	.0561	.0485	.0877	.0641
OAKLAND						
SITE 001	75	.0142	.0192	.0218	.0242	.0209
ONTARIO						
SITE 001	75	.1182	LD	LD	LD	
PASADENA						
SITE 002	75	.0851	.0375	.0500	.0538	.0566
RIVERSIDE						
SITE 001	75	LD	LD	LD	LD	
SACRAMENTO						
SITE 001	75	.0514	.0250	.0330	.0196	.0323
SAN BERNARDINO						
SITE 001	75	.1016	.1073	.1562	.0843	.1124
SAN DIEGO						
SITE 004	75	.0512	.0519	.0259	.0533	.0456
SAN FRANCISCO						
SITE 001	75	.0598	.0196	.0152	.0121	.0267

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA						
SAN JOSE						
SITE 004	75	.0677	.0418	.0471	.0347	.0478
SANTA ANA						
SITE 001	75	.0437	.0637	.0657	.0652	.0570
TORRANCE						
SITE 001	75	.0791	.0723	.0271	.0464	.0562
COLORADO						
DENVER						
SITE 001	75	LD	.0344	.1033	LD	
DENVER						
SITE 002	75	.1758	.0715	.0579	.1636	.1160
CONNECTICUT						
BRIDGEPORT						
SITE 001	75	.1356	.0314	.0220	.0255	.0536
HARTFORD						
SITE 002	75	.0540	.0313	.0152	.0194	.0300
NEW HAVEN						
SITE 001	75	.0932	.0356	.0276	.0247	.0453
WATERBURY						
SITE 001	75	.0794	.0599	.0509	.0318	.0555
WATERBURY						
SITE 123	75	LD	LD	LD	LD	
DELAWARE						
NEWARK						
SITE 001	75	.0358	.0399	.0866	.0318	.0485
WILMINGTON						
SITE 002	75	.0610	LD	.0273	.0377	.0420
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 001	75	.0348	LD	LD	LD	
FLORIDA						
JACKSONVILLE						
SITE 002	75	.0140	.0229	.0162	.0149	.0170
MIAMI						
SITE 002	75	.0062	.0120	.0084	.0054	.0080
ST PETERSBURG						
SITE 002	75	.0127	.0125	.0075	.0070	.0099
TAMPA						
SITE 002	75	LD	LD	.0131	LD	
GEORGIA						
ATLANTA						
SITE 001	75	.0223	.0256	.0272	.0226	.0244
COLUMBUS						
SITE 001	75	.0156	.0184	.0192	.0196	.0182
SAVANNAH						
SITE 001	75	.0322	.0350	.0355	.0409	.0359
HAWAII						
MAUNA LOA OBSERV						
SITE 002	75	LD	LD	LD	LD	
HONOLULU						
SITE 001	75	.0431	.0520	.0496	.0438	.0471
IDAHO						
BOISE CITY						
SITE 001	75	LD	LD	.0978	.0517	
ILLINOIS						
ALUF ISLAND						
SITE 001	75	LD	LD	LD	LD	
CHICAGO						
SITE 001	75	LD	.0254	.0604	.0208	.0355
EAST ST LOUIS						
SITE 001	75	LD	LD	.0621	.0398	
JOLIET						
SITE 001	75	.0403	LD	.0249	.0172	.0275
MOLINE						
SITE 001	75	.0179	.0231	.0279	.0156	.0211

POLLUTANT : 12161 - TITANIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0036  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) .42 PRECISION (S) +/- .54

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	.0169	LD	.0206	.0097	.0157
PEORIA SITE 001	75	.0273	.0157	.0147	.0500	.0719
ROCKFORD SITE 001	75	.0342	.0152	LD	.0114	.0203
ROCK ISLAND SITE 001	75	.0846	.0291	.0311	.0190	.0407
SPRINGFIELD SITE 001	75	.0224	.0211	LD	.0247	.0227
INDIANA						
EAST CHICAGO SITE 001	75	.0384	.0477	LD	.0380	.0412
EVANSVILLE SITE 001	75	.0307	.0143	.0283	.0157	.0223
FORT WAYNE SITE 002	75	LD	.0135	LD	.0147	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	.0227	LD	.0494	.0415	.0644
HAMMOND SITE 002	75	.0542	.0391	.0449	.0212	.0399
INDIANAPOLIS SITE 001	75	.0242	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	.0286	.0250	LD	
NEW ALBANY SITE 002	75	LD	LD	.0292	.0170	
SOUTH BEND SITE 002	75	.0356	.0211	.0239	.0146	.0238
TERRE HAUTE SITE 001	75	.0184	.0320	.0360	.0230	.0274
IOWA						
CEDAR RAPIDS SITE 018	75	.0291	.0242	.0211	.0208	.0238
DAVENPORT SITE 001	75	.0441	LD	.0217	.0213	.0304
DES MOINES SITE 001	75	.0184	.0239	.0237	.0232	.0223
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	.0144	.0190	.0141	.0085	.0128
DUBUQUE SITE 008	75	.0125	.0169	.0127	.0159	.0145
WATERLOO SITE 004	75	.0219	.0105	.0211	.0277	.0703
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	.0235	LD	.0249	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	.0446	.0283	.0447	.0315	.0373
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPPEKA SITE 001	75	.0397	.0103	.0128	.0163	.0198

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	.0695	.0115	.0226	.0218	.0299
KENTUCKY						
ASHLAND SITE 002	75	.0389	.0376	.0240	.0297	.0329
ROLLING GREEN SITE 001	75	LD	.0129	.0063	.0078	.0090
COVINGTON SITE 001	75	.0232	.0168	.0352	LD	.0251
LEXINGTON SITE 001	75	.0214	.0187	LD	LD	
LOUISIANA						
LOUISVILLE SITE 002	75	.0153	.0203	.0221	.0158	.0184
LOUISIANA						
BATON ROUGE SITE 002	75	.0080	.0110	.0130	.0094	.0104
IBERVILLE PAR SITE 002	75	.0964	LD	.0073	.0078	.0372
NEW ORLEANS SITE 002	75	.0120	.0097	.0135	.0092	.0111
SHREVEPORT SITE 001	75	.0123	.0202	.0200	.0233	.0192
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	.0411	
MARYLAND						
BALTIMORE SITE 001	75	.0377	.0355	.0296	.0443	.0368
MASSACHUSETTS						
BOSTON SITE 001	75	.0513	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	.0430	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	.0204	
WORCESTER SITE 004	75	LD	LD	.0206	.0280	
MICHIGAN						
DEARBORN SITE 001	75	.0273	LD	.0335	.0234	.0447
DETROIT SITE 001	75	.0625	.0453	.0350	.0345	.0443
FLINT SITE 008	75	.0231	LD	LD	.0123	
GRAND RAPIDS SITE 001	75	.0222	.0291	.0309	.0182	.0251
LANSING SITE 001	75	.0269	.0211	.0350	LD	.0277
SAGINAW SITE 001	75	.0151	.0216	.0217	.0131	.0179
TRENTON SITE 004	75	LD	LD	.0232	.0144	
MINNESOTA						
DULUTH SITE 001	75	.0446	LD	.0519	.0278	.0414
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : TITANIUM  
 METHOD : HE-VOL EMISSION SPECTRA BUFFLE FURNACE  
 UNITS : NG/CC METER (75 C)  
 DATA TYPE : QUARTERLY COMPOSITE

UPPER  
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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0034  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 42 PRECISION (%) ± 54

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS SITE 027	75	.0216	.0231	.0373	.0254	.0268
MOOREHEAD SITE 071	75	LD	LD	LD	LD	
ST PAUL SITE 031	75	.0319	LD	.0362	.0336	.0339
MISSISSIPPI JACKSON SITE 002	75	.0140	LD	.0121	.0154	.0138
MISSOURI KANSAS CITY SITE 002	75	LD	.0210	.0293	LD	
ST LOUIS SITE 001	75	.1061	.1226	.1163	.0922	.1218
ST LOUIS SITE 072	75	LD	LD	LD	LD	
MONTANA HELENA SITE 001	75	LD	LD	.0879	.0312	
NEBRASKA LINCOLN SITE 002	75	.0560	.0261	.0188	.0276	.0321
OMAHA SITE 001	75	.1366	LD	LD	LD	
OMAHA SITE 010	75	LD	.0347	.0336	.0591	.0425
OMAHA SITE 034	75	LD	LD	LD	LD	
NEVADA LAS VEGAS SITE 001	75	.0450	.0442	.0231	.0245	.0342
NEED SITE 001	75	.1222	.0399	.0480	.1226	.0833
NEW HAMPSHIRE CONCORD SITE 002	75	.1229	LD	LD	.0183	
NEW JERSEY HAYDENE SITE 001	75	.0569	LD	.0354	.0380	.0434
CAMDEN SITE 001	75	.0403	.0613	.0447	.0462	.0481
CAMDEN CO SITE 002	75	LD	LD	LD	LD	
CAMDEN CO SITE 003	75	LD	.0928	.0218	.0312	.0486
ELIZABETH SITE 002	75	.0306	.0275	.0321	.0406	.0322
GLASSBORO SITE 001	75	.0588	.0134	.0222	.0158	.0272
HAMILTON SITE 001	75	LD	LD	LD	LD	
JERSEY CITY SITE 001	75	.0313	LD	.0465	.0370	.0383
NEWARK SITE 001	75	.0288	LD	.0261	.0246	.0265
PATERSON SITE 001	75	.0269	LD	.0176	LD	
PERTH AMBOY SITE 001	75	.0400	LD	.0383	.0170	.0463
TRENTON SITE 001	75	.0390	.0210	.0353	.0312	.0316
NEW MEXICO ALBUQUERQUE SITE 001	75	LD	.0235	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK ALBANY SITE 001	75	.0213	.0096	.0300	.0111	.0203
BUFFALO SITE 001	75	.0661	.0238	.0215	.0200	.0334
NEW YORK CITY SITE 014	75	.0566	.0283	.0347	.0264	.0365
NIAGARA FALLS SITE 001	75	.0524	.1091	.1190	.0406	.0805
ROCHESTER SITE 001	75	.0342	.0217	.0261	.0240	.0265
SYRACUSE SITE 001	75	.0603	LD	.0210	.0130	.0314
UTICA SITE 001	75	.0518	.0090	.0161	.0120	.0222
YONKERS SITE 001	75	.0761	.1382	.1609	.1334	.1270
NORTH CAROLINA CHARLOTTE SITE 001	75	.0186	.0257	.0292	.0444	.0296
DURHAM SITE 001	75	LD	.0419	.0404	LD	
DURHAM SITE 006	75	LD	LD	LD	LD	
GREENSBORO SITE 001	75	.0501	.0516	LD	LD	
GREENSBORO SITE 009	75	LD	LD	LD	.0316	
WINSTON-SALEM SITE 002	75	.0373	.0531	.0698	.0775	.0594
NORTH DAKOTA BISMARCK SITE 001	75	.0304	LD	LD	LD	
OHIO AKRON SITE 014	75	.1128	.0428	.0414	.0310	.0520
CANTON SITE 001	75	.0352	.0336	.0314	LD	.0334
CINCINNATI SITE 001	75	.0408	.0222	.0378	.0278	.0323
CLEVELAND SITE 001	75	LD	LD	LD	LD	
COLUMBUS SITE 001	75	.0222	.0220	.0252	.0228	.0232
DAYTON SITE 001	75	.0450	.0472	.0339	.0474	.0415
IRONTON SITE 009	75	.0871	.0246	.0260	.0242	.0405
WANSFORD SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH SITE 002	75	.0373	.0169	.0256	LD	.0266
STUBENVILLE SITE 012	75	LD	LD	.1595	.0483	
TOLDO SITE 001	75	.0238	.0260	.0321	LD	.0273
YOUNGSTOWN SITE 001	75	.0349	.0361	.0416	.0520	.0412
OKLAHOMA CHOKFEE CO SITE 480	75	.0442	LD	LD	LD	
THUSA SITE 110	75	.0104	.0152	.0130	LD	.0130
OREGON EUGENE SITE 001	75	LD	LD	LD	LD	

POLLUTANT : TITANIUM  
 METHOD : HIGH RESOLUTION EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CM METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (DL) : 0.0036  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) : 42 PRECISION (Y) : 54

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CONNECTICUT						
WATERBURY						
WATERBURY SITE 001	75	LD	LD	LD	LD	
PORTLAND						
PORTLAND SITE 001	75	LD	0.0739	0.0651	0.0277	0.0556
PENNSYLVANIA						
ALLENTOWN						
ALLENTOWN SITE 001	75	0.0177	0.0212	0.0288	0.0170	0.0172
ALTONNA						
ALTONNA SITE 001	75	0.0325	LD	0.0176	0.0150	0.0217
PETHLEHEM						
PETHLEHEM SITE 002	75	LD	LD	LD	LD	
ERIE						
ERIE SITE 002	75	LD	0.0270	0.0157	0.0270	0.0232
HARRISBURG						
HARRISBURG SITE 001	75	LD	LD	LD	LD	
HARRISBURG						
HARRISBURG SITE 361	75	LD	LD	LD	LD	
HAZLETON						
HAZLETON SITE 001	75	0.0580	LD	LD	0.0222	
JOHNSTOWN						
JOHNSTOWN SITE 003	75	LD	LD	LD	LD	
LANCASTER CITY						
LANCASTER CITY SITE 002	75	LD	LD	LD	0.0231	
PHILADELPHIA						
PHILADELPHIA SITE 004	75	0.0307	0.0265	0.0261	0.0365	0.0300
PITTSBURGH						
PITTSBURGH SITE 001	75	0.0719	0.0454	0.0532	0.0374	0.0520
READING						
READING SITE 001	75	LD	0.0167	LD	LD	
SCRANTON						
SCRANTON SITE 001	75	0.0562	0.0315	0.0278	LD	0.0385
WARMINSTER						
WARMINSTER SITE 002	75	0.0152	0.0324	0.0361	LD	0.0279
WEST CHESTER						
WEST CHESTER SITE 110	75	0.0298	0.0223	0.0157	0.0229	0.0227
WILKES-BARRE						
WILKES-BARRE SITE 001	75	0.0377	0.0328	0.0300	0.0355	0.0340
YORK						
YORK SITE 322	75	0.0309	0.0208	0.0270	LD	0.0262
PURTO RICO						
BAYAMON						
BAYAMON SITE 002	75	LD	LD	LD	LD	
CATANO						
CATANO SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
GUAYANILLA						
GUAYANILLA SITE 002	75	0.0157	0.0321	0.0568	0.0171	0.0304
GUAYANILLA						
GUAYANILLA SITE 003	75	LD	LD	LD	LD	
AMELIA						
AMELIA SITE 001	75	0.0597	LD	0.0401	0.0263	0.0420
PONCE						
PONCE SITE 002	75	0.0175	LD	0.0530	0.0465	0.0390
SBANA SECA						
SBANA SECA SITE 001	75	0.0660	0.0401	0.0351	0.0264	0.0419
SAN JUAN						
SAN JUAN SITE 001	75	LD	LD	LD	LD	
SAN JUAN						
SAN JUAN SITE 001	75	0.0574	0.0402	0.0504	0.0322	0.0451
RHODE ISLAND						
EAST PROVIDENCE						
EAST PROVIDENCE SITE 001	75	0.0754	0.0251	0.0201	LD	0.0402

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
RHODE ISLAND						
PROVIDENCE						
PROVIDENCE SITE 001	75	0.0919	LD	0.0312	0.0270	0.0503
SOUTH CAROLINA						
COLUMBIA						
COLUMBIA SITE 001	75	0.0176	0.0244	0.0151	0.0280	0.0213
GREENVILLE						
GREENVILLE SITE 001	75	0.0236	0.0226	0.0172	0.0177	0.0203
SOUTH DAKOTA						
SIOUX FALLS						
SIOUX FALLS SITE 001	75	LD	LD	0.0259	LD	
TENNESSEE						
CHATTANOOGA						
CHATTANOOGA SITE 001	75	0.0165	0.0170	0.0264	0.0388	0.0247
KNOXVILLE						
KNOXVILLE SITE 002	75	0.0146	0.0194	0.0191	0.0175	0.0174
MEMPHIS						
MEMPHIS SITE 001	75	0.0168	0.0214	0.0232	0.0177	0.0199
NASHVILLE						
NASHVILLE SITE 001	75	0.0171	0.0217	0.0172	LD	0.0188
TEXAS						
AMARILLO						
AMARILLO SITE 002	75	LD	LD	LD	LD	
AUSTIN						
AUSTIN SITE 010	75	0.0763	0.0106	0.0092	LD	0.0320
BEAUMONT						
BEAUMONT SITE 001	75	LD	LD	0.0109	LD	
CORPUS CHRISTI						
CORPUS CHRISTI SITE 001	75	0.0149	LD	0.0166	0.0132	0.0149
DALLAS						
DALLAS SITE 002	75	0.0213	0.0243	0.0306	0.0221	0.0246
EL PASO						
EL PASO SITE 002	75	0.0364	0.0429	0.0276	0.0097	0.0392
FORT WORTH						
FORT WORTH SITE 001	75	0.0108	0.0104	0.0105	0.0116	0.0108
HOUSTON						
HOUSTON SITE 001	75	0.0616	0.0446	0.0192	0.0110	0.0341
LURROCK						
LURROCK SITE 001	75	0.0211	LD	0.0242	0.0002	0.0285
PASADENA						
PASADENA SITE 002	75	0.0272	0.0281	LD	0.0080	0.0478
SAN ANTONIO						
SAN ANTONIO SITE 034	75	0.0065	0.0052	0.0065	0.0083	0.0066
WICHITA FALLS						
WICHITA FALLS SITE 002	75	0.0180	0.0201	LD	LD	
UTAH						
OGDEN						
OGDEN SITE 001	75	LD	0.0265	0.0268	0.0383	0.0305
SALT LAKE CITY						
SALT LAKE CITY SITE 001	75	0.0350	0.0237	0.0358	0.0509	0.0364
VERMONT						
BURLINGTON						
BURLINGTON SITE 003	75	0.0457	0.0472	0.0255	0.0228	0.0353
VIRGINIA						
DANVILLE						
DANVILLE SITE 001	75	0.0399	0.0384	LD	0.0408	0.0464
HCLFAN						
HCLFAN SITE 001	75	LD	LD	LD	LD	
HAMPTON						
HAMPTON SITE 001	75	0.0341	0.0328	0.0246	0.0248	0.0301
LYNCHBURG						
LYNCHBURG SITE 001	75	0.0321	0.0267	LD	0.0279	0.0289
LYNCHBURG						
LYNCHBURG SITE 002	75	LD	LD	0.0324	LD	
NEWPORT NEWS						
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	



POLLUTANT : TITANIUM  
 METHOD : DI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0036  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (+) .42 PRECISION (%) .54

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
MARICOPA CO						
SITE 006	75	LD	LD	LD	LD	
KANSAS						
MONTGOMERY CO						
SITE 001	75	LD	.0071	LD	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
MESA VERDE NAT PAR						
SITE 002	75	.0070	LD	.0103	.0058	.0077
DELAWARE						
KENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	.0236	
FLORIDA						
HARDEE CO						
SITE 001	75	.0040	.0065	LD	LD	
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	.0109	.0413	LD	.0174	.0232
HAWAII VOLCANOES N						
SITE 001	75	.0174	LD	LD	LD	
IDAHO						
BUTTE CO						
SITE 001	75	.0042	.0130	.0281	LD	.0151
ILLINOIS						
CHICAGO						
SITE 002	75	.0524	.0279	.0259	LD	.0354
INDIANA						
MONROE CO						
SITE 001	75	LD	.0197	.0201	.0123	.0174
PARKE CO						
SITE 001	75	LD	.0160	LD	LD	
BERVILLE PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.0436	.0094	LD	.0050	.0193
MARYLAND						
CALVERT CO						
SITE 001	75	LD	.0117	.0136	.0114	.0122
MISSISSIPPI						
JACKSON CO						
SITE 001	75	.0044	.0075	.0037	.0067	.0056
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
SHANNON CO						
SITE 002	75	.0150	.0047	.0083	.0078	.0092
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	.0083	LD	
FORT HOWES						
SITE 008	75	LD	LD	.0098	.0094	
ASHLAND						
SITE 026	75	.0051	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	.0450	.0108	.0134	LD	.0234

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	.0141	.0022	LD	
NEW HAMPSHIRE						
COOS CO						
SITE 001	75	.1306	.0115	.0096	.0081	.0400
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	.0750	.0105	.0104	LD	.0320
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
REYTON.						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0283	LD	.0228	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	.0222	.0207	.0782	.0831	.0522
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	.0252	.0287	.0837	.1099	.0619
OREGON						
CURRY CO						
SITE 001	75	LD	.0146	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	.0116	LD	LD	LD	
INDIANA CO						
SITE 002	75	.1675	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.0317	LD	.0278	LD	
RHOE ISLAND						
WASHINGTON CO						
SITE 002	75	.0484	LD	.0092	.0110	.0229
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	.0078	.0103	.0087	.0098	.0091
SOUTH DAKOTA						
BLACK HILLS NAT PA						
SITE 001	75	LD	LD	.0094	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	.0092	.0138	.0146	.0108	.0121
TEXAS						
MATAGORDA CO						
SITE 001	75	.0260	.0042	.0101	.0042	.0111
TOM GREFN CO						
SITE 001	75	LD	.0181	.0078	.0113	.0124
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	.0469	.0118	.0104	LD	.0230
VIRGINIA						
SHENANDOAH NAT PAR						
SITE 001	75	.0347	LD	.0049	.0145	.0180
WYTHE CO						
SITE 001	75	.0961	LD	.0059	.0067	.0362
WASHINGTON						
KING CO						
SITE 002	75	.0130	.0269	.0213	.0050	.0166

POLLUTANT : TITANIUM  
METHOD : NI-VOL EMISSION SPECTRA MUFFLE FURNACE  
UNITS : UG/CMETER (25 C)  
DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
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ANALYTICAL QUALITY  
ANALYTICAL DISCRIMINATION LIMIT (LD) .0036  
95 PERCENT CONFIDENCE LIMITS  
BIAS (%) 42      PRECISION (%) +/- 54

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN						
DOOR CO						
SITE 001	75	LD	LD	LD	LD	
WYOMING						
GRAND TETON NAT PA						
SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA						
SITE 001	75	LD	.0097	.0092	LD	
VIRGIN ISLANDS						
ST THOMAS						
SITE 002	75	LD	.0420	.0343	LD	
ST JOHN						
SITE 004	75	LD	.0119	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.



POLLUTANT : 12164 - VANADIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : DPC/CC METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

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ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LMD) : 0.0099  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%): 21 PRECISION (%): 40

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA BIRMINGHAM SITE 003	75	LD	LD	LD	LD	
GARDEN SITE 001	75	LD	LD	LD	LD	
HUNTSVILLE SITE 001	75	LD	LD	LD	LD	
MOBILE SITE 001	75	.0117	LD	LD	LD	
MONTGOMERY SITE 001	75	LD	LD	LD	LD	
ALASKA ANCHORAGE SITE 003	75	LD	.0112	LD	LD	
FAIRBANKS SITE 001	75	LD	LD	LD	LD	
ARIZONA DOUGLAS SITE 004	75	LD	LD	LD	LD	
PHOENIX SITE 002	75	LD	LD	LD	LD	
TUCSON SITE 001	75	LD	LD	LD	LD	
ARKANSAS EL DORADO SITE 002	75	LD	LD	LD	LD	
LITTLE ROCK SITE 001	75	LD	LD	LD	LD	
TEXARKANA SITE 001	75	LD	LD	LD	LD	
WEST MEMPHIS SITE 001	75	LD	LD	LD	LD	
WEST MEMPHIS SITE 004	75	LD	LD	LD	LD	
CALIFORNIA ANAHEIM SITE 001	75	.0201	.0138	.0225	.0166	.0183
BERKELEY SITE 001	75	LD	LD	LD	LD	
BURBANK SITE 002	75	.0331	LD	.0168	.0204	.0234
FRESNO SITE 002	75	LD	LD	LD	.0134	
GLENDALE SITE 001	75	LD	LD	.0171	.0202	
LONG BEACH SITE 001	75	.0339	.0201	.0413	.0255	.0322
LOS ANGELES SITE 001	75	LD	.0196	.0195	.0215	.0207
OAKLAND SITE 001	75	LD	LD	LD	.0160	
ONTARIO SITE 001	75	.0348	LD	LD	LD	
PASADENA SITE 002	75	.0195	.0214	.0126	.0150	.0171
RIVERSIDE SITE 001	75	LD	LD	LD	LD	
SACRAMENTO SITE 001	75	LD	LD	LD	LD	
SAN BERNARDINO SITE 001	75	.0155	.0217	.0203	.0173	.0175
SAN DIEGO SITE 004	75	.0161	LD	.0109	LD	
SAN FRANCISCO SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
CALIFORNIA SAN JOSE SITE 004	75	LD	LD	LD	LD	
SANTA ANA SITE 001	75	.0211	.0211	.0304	.0206	.0233
TOPRANCH SITE 001	75	.0310	.0238	.0200	.0271	.0256
COLORADO DENVER SITE 001	75	LD	LD	LD	LD	
DENVER SITE 002	75	.0166	.0115	LD	.0124	.0175
CONNECTICUT BRIDGEPORT SITE 001	75	.0031	.0241	LD	.0243	.0310
HARTFORD SITE 002	75	.0563	.0250	.0130	.0230	.0295
NEW HAVEN SITE 001	75	.2318	.0340	.0227	.0430	.0829
WATERBURY SITE 001	75	.0612	.0332	.0150	.0130	.0308
WATERBURY SITE 103	75	LD	LD	LD	LD	
DELAWARE NEWARK SITE 001	75	.0328	.0193	.0192	.0307	.0253
WILMINGTON SITE 002	75	.0001	LD	.0305	.0462	.0439
DISTRICT OF COLUMBIA WASHINGTON SITE 001	75	.1232	LD	LD	LD	
FLORIDA JACKSONVILLE SITE 002	75	.0471	.0595	.0891	.0478	.0659
MIAMI SITE 002	75	.0131	.0135	.0138	.0119	.0131
ST PETERSBURG SITE 002	75	.0216	.0161	.0216	.0283	.0219
TAMPA SITE 002	75	LD	LD	.0216	LD	
GEORGIA ATLANTA SITE 001	75	LD	LD	LD	.0117	
COLUMBUS SITE 001	75	LD	LD	LD	.0128	
SAVANNAH SITE 001	75	.0350	.0156	.0231	.1524	.0565
HAWAII MAUNA LOA OBSERV SITE 002	75	LD	LD	LD	LD	
HONOLULU SITE 001	75	.0216	.0275	.0387	.0424	.0326
IDAHO BOISE CITY SITE 001	75	LD	LD	LD	LD	
ILLINOIS BLUE ISLAND SITE 001	75	LD	LD	LD	LD	
CHICAGO SITE 001	75	LD	.0157	.0199	.0290	.0215
FAST ST LOUIS SITE 001	75	LD	LD	LD	LD	
JOIJET SITE 001	75	LD	LD	LD	LD	
MOIINE SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12144 - VANADIUM  
 METHOD : HJ-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 V

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0009  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%) 21 PRECISION (%) +/- 40

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ILLINOIS						
NORTH CHICAGO SITE 002	75	.0114	LD	LD	LD	
PEORIA SITE 001	75	LD	.0134	LD	LD	
ROCKFORD SITE 001	75	LD	LD	LD	LD	
ROCK ISLAND SITE 001	75	LD	LD	LD	LD	
SPRINGFIELD SITE 001	75	LD	LD	LD	LD	
INDIANA						
EAST CHICAGO SITE 001	75	.0281	.0193	LD	.0276	.0233
EVANSVILLE SITE 001	75	LD	LD	LD	LD	
FORT WAYNE SITE 002	75	LD	.0101	LD	LD	
FORT WAYNE SITE 003	75	LD	LD	LD	LD	
GARY SITE 001	75	.0186	LD	LD	.0147	
HAMMOND SITE 002	75	.0189	.0146	LD	LD	
INDIANAPOLIS SITE 001	75	LD	LD	LD	LD	
INDIANAPOLIS SITE 002	75	LD	LD	LD	LD	
MUNCIE SITE 001	75	LD	LD	LD	LD	
NEW ALBANY SITE 002	75	LD	LD	LD	LD	
SOUTH BEND SITE 002	75	.0174	.0119	.0176	LD	.0156
TERRE HAUTE SITE 001	75	LD	LD	LD	LD	
IOWA						
CFDAR RAPIDS SITE 018	75	LD	LD	LD	LD	
DAVENPORT SITE 001	75	LD	LD	LD	LD	
DES MOINES SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 001	75	LD	LD	LD	LD	
DUBUQUE SITE 002	75	LD	LD	LD	LD	
DUBUQUE SITE 003	75	LD	LD	LD	LD	
WATERLOO SITE 004	75	LD	LD	LD	LD	
WATERLOO SITE 006	75	LD	LD	LD	LD	
KANSAS						
KANSAS CITY SITE 002	75	.0203	LD	LD	LD	
KANSAS CITY SITE 011	75	LD	LD	LD	LD	
KANSAS CITY SITE 012	75	.0382	.0138	LD	.0117	.0212
KANSAS CITY SITE 015	75	LD	LD	LD	LD	
TOPEKA SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
KANSAS						
WICHITA SITE 001	75	LD	LD	LD	LD	
KENTUCKY						
ASHLAND SITE 002	75	LD	LD	LD	LD	
BOWLING GREEN SITE 001	75	LD	LD	LD	LD	
COVINGTON SITE 001	75	LD	LD	LD	LD	
LEXINGTON SITE 001	75	LD	LD	LD	LD	
LOUISVILLE SITE 002	75	LD	LD	LD	LD	
LOUISIANA						
BATON ROUGE SITE 002	75	LD	LD	LD	LD	
IBERVILLE PAR SITE 002	75	LD	LD	LD	LD	
NEW ORLEANS SITE 002	75	.0147	LD	LD	LD	
SHREVEPORT SITE 001	75	LD	LD	LD	LD	
MAINE						
PORTLAND SITE 004	75	LD	LD	LD	.1167	
MARYLAND						
BALTIMORE SITE 001	75	.0933	.0579	.0261	.0523	.0574
MASSACHUSETTS						
BOSTON SITE 001	75	.1064	LD	LD	LD	
BOSTON SITE 012	75	LD	LD	LD	LD	
CAMBRIDGE SITE 001	75	.0642	LD	LD	LD	
FALL RIVER SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 001	75	LD	LD	LD	LD	
NEW BEDFORD SITE 002	75	LD	LD	LD	LD	
SPRINGFIELD SITE 002	75	LD	LD	LD	.0232	
WORCESTER SITE 004	75	LD	LD	.0131	.0499	
MICHIGAN						
DEARBORN SITE 001	75	.0135	LD	LD	LD	
DETROIT SITE 001	75	.0130	LD	.0148	LD	
FLINT SITE 008	75	LD	LD	LD	LD	
GRAND RAPIDS SITE 001	75	LD	LD	LD	LD	
LANSING SITE 001	75	LD	LD	LD	LD	
SARINAW SITE 001	75	LD	LD	LD	LD	
TRENTON SITE 004	75	LD	LD	.0147	LD	
MINNESOTA						
DULUTH SITE 001	75	LD	LD	LD	LD	
MINNEAPOLIS SITE 001	75	LD	LD	LD	LD	

POLLUTANT : 12164 - VANADIUM  
 METHOD : HI-VOL EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URRAN  
 V

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0009  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (+) 21 PRECISION (%) 40

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
MINNESOTA						
MINNEAPOLIS						
SITE 027	75	.0151	LD	LD	LD	
MOORHEAD						
SITE 001	75	LD	LD	LD	LD	
ST PAUL						
SITE 031	75	.0151	LD	LD	.0143	
MISSISSIPPI						
JACKSON						
SITE 002	75	LD	LD	LD	LD	
MISSOURI						
KANSAS CITY						
SITE 002	75	LD	.0176	LD	LD	
ST LOUIS						
SITE 001	75	LD	LD	LD	LD	
ST LOUIS						
SITE 072	75	LD	LD	LD	LD	
MONTANA						
HELENA						
SITE 001	75	LD	LD	LD	.0420	
NEBRASKA						
LINCOLN						
SITE 002	75	LD	LD	LD	.0110	
OMAHA						
SITE 001	75	.0114	LD	LD	LD	
OMAHA						
SITE 030	75	LD	LD	LD	.0140	
OMAHA						
SITE 034	75	LD	LD	LD	LD	
NEVADA						
LAS VEGAS						
SITE 001	75	LD	LD	LD	LD	
RENO						
SITE 001	75	.0168	LD	LD	.0134	
NEW HAMPSHIRE						
CONCORD						
SITE 002	75	.0925	LD	LD	.0401	
NEW JERSEY						
BAYONNE						
SITE 001	75	.0433	LD	.0311	.0499	.0414
CAMDEN						
SITE 001	75	.0499	.0629	.0357	.0463	.0487
CAMDEN CO						
SITE 002	75	LD	LD	LD	LD	
CAMDEN CO						
SITE 003	75	LD	.0201	.0211	.0312	.0241
ELIZARETH						
SITE 002	75	.0383	.0295	.0177	.0399	.0298
GLASSBORO						
SITE 001	75	.0545	.0162	.0498	.0313	.0380
HAMILTON						
SITE 001	75	LD	LD	LD	LD	
JERSEY CITY						
SITE 001	75	.0732	LD	.0308	.0356	.0465
NEWARK						
SITE 001	75	.0319	LD	.0157	.0309	.0262
PATERSON						
SITE 001	75	.0452	LD	.0303	LD	
PERTH AMBOY						
SITE 001	75	.0284	LD	.0230	.0390	.0304
TRENTON						
SITE 001	75	.0423	.0309	.0360	.0417	.0377
NEW MEXICO						
ALBUQUERQUE						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEW YORK						
ALBANY						
SITE 001	75	.2051	.1399	.0912	.1454	.1454
BUFFALO						
SITE 001	75	.0288	.0143	.0100	.0231	.0193
NEW YORK CITY						
SITE 014	75	.0661	.0475	.0283	.0402	.0455
NIAGARA FALLS						
SITE 001	75	.0816	.0313	.0120	.0213	.0368
ROCHESTER						
SITE 001	75	.0153	.0154	.0159	.0228	.0173
SYRACUSE						
SITE 001	75	.0503	LD	.0127	.0378	.0334
UTICA						
SITE 001	75	.0620	.0342	.0384	.0428	.0444
YONKERS						
SITE 001	75	.0424	.0451	.0331	.0470	.0421
NORTH CAROLINA						
CHARLOTTE						
SITE 001	75	.0198	.0112	.0116	.0408	.0200
DURHAM						
SITE 001	75	LD	.0514	.0237	LD	
DURHAM						
SITE 006	75	LD	LD	LD	LD	
GREENSBORO						
SITE 001	75	.0533	.0152	LD	LD	
GREENSBORO						
SITE 009	75	LD	LD	LD	.0365	
WINSTON-SALEM						
SITE 002	75	.0379	.0178	.0183	.0499	.0310
NORTH DAKOTA						
RISMARK						
SITE 001	75	LD	LD	LD	LD	
OHIO						
AKRON						
SITE 014	75	LD	LD	LD	LD	
CANTON						
SITE 001	75	LD	LD	LD	LD	
CINCINNATI						
SITE 001	75	LD	LD	LD	LD	
CLEVELAND						
SITE 001	75	LD	LD	LD	LD	
COLUMBUS						
SITE 001	75	LD	LD	LD	LD	
DAYTON						
SITE 001	75	LD	LD	LD	LD	
FRONTON						
SITE 009	75	LD	LD	LD	LD	
MANSFIELD						
SITE 008	75	LD	LD	LD	LD	
PORTSMOUTH						
SITE 002	75	LD	LD	LD	LD	
STURENVILLE						
SITE 012	75	LD	LD	.0190	LD	
TOLEDO						
SITE 001	75	LD	LD	LD	LD	
YOUNGSTOWN						
SITE 001	75	LD	LD	LD	LD	
OKLAHOMA						
CHEROKEE CO						
SITE 480	75	LD	LD	LD	LD	
TULSA						
SITE 110	75	LD	LD	LD	LD	
OREGON						
EUGENE						
SITE 001	75	LD	LD	LD	LD	

POLLUTANT : URANIUM  
 METHOD : ALPHA EMISSION SPECTRA MUFFLE FURNACE  
 UNITS : MICRO METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

URBAN  
 V

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : 0.000  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (X) 2% PRECISION (R) ± 4%

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
PROVIDENCE SITE 001	75	LD	LD	LD	LD	
PORTLAND SITE 001	75	LD	0.0234	0.0117	0.0341	0.0231
PENNSYLVANIA ALLENTOWN SITE 001	75	0.1122	0.0801	0.0296	0.0713	0.0733
ALTONA SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA SITE 002	75	LD	LD	LD	LD	
FOUR SITE 002	75	LD	LD	LD	0.0110	
HARRISBURG SITE 001	75	LD	LD	LD	LD	
HARRISBURG SITE 341	75	LD	LD	LD	LD	
HAZLETON SITE 001	75	0.0389	LD	LD	0.0174	
JOHNSTOWN SITE 003	75	LD	LD	LD	LD	
LANCASTER CITY SITE 002	75	LD	LD	LD	0.0567	
PHILADELPHIA SITE 004	75	0.0748	0.0511	0.0271	0.0530	0.0520
PITTSBURGH SITE 001	75	LD	LD	LD	LD	
READING SITE 001	75	LD	0.0817	LD	LD	
SCRANTON SITE 001	75	0.0502	0.0307	0.0229	LD	0.0346
WARMINSTER SITE 002	75	0.0258	0.0357	0.0180	LD	0.0265
WEST CHESTER SITE 110	75	0.0639	0.0424	0.0253	0.0351	0.0417
WILKES-BARRRE SITE 001	75	0.0233	0.0198	LD	0.0190	0.0207
YORK SITE 322	75	0.0814	0.0734	0.0776	LD	0.0775
Puerto Rico RAYMOND SITE 002	75	LD	LD	LD	LD	
CATANO SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	LD	LD	LD	LD	
GUAYANILLA SITE 002	75	0.0915	0.0674	0.0694	0.0379	0.0656
GUAYANILLA SITE 003	75	LD	LD	LD	LD	
AMELIA SITE 001	75	0.1696	LD	0.0931	0.0493	0.1040
PONCE SITE 007	75	LD	LD	0.0138	0.0209	
SEBANA SECA SITE 001	75	0.0813	0.0279	0.0370	0.0721	0.0533
SAN JUAN SITE 001	75	LD	LD	LD	LD	
SAN JUAN SITE 001	75	LD	0.0171	0.0131	LD	
Rhode Island EAST PROVIDENCE SITE 001	75	0.0638	0.0310	0.0216	LD	0.0388

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
PROVIDENCE SITE 001	75	0.2957	LD	0.0345	0.0519	0.1274
SOUTH CAROLINA COLUMBIA SITE 001	75	0.0165	LD	LD	0.0295	
GREENVILLE SITE 001	75	0.0339	0.0234	0.0201	0.0497	0.0318
SOUTH DAKOTA SIOUX FALLS SITE 001	75	LD	LD	LD	LD	
TENNESSEE CHATTANOOGA SITE 001	75	LD	LD	0.0118	LD	
KNOXVILLE SITE 002	75	LD	LD	LD	0.0108	
MEMPHIS SITE 001	75	LD	LD	LD	LD	
NASHVILLE SITE 001	75	LD	LD	LD	LD	
TEXAS AMARILLO SITE 002	75	LD	LD	LD	LD	
AUSTIN SITE 010	75	LD	LD	LD	LD	
BEAUMONT SITE 001	75	LD	LD	LD	LD	
CORPUS CHRISTI SITE 001	75	LD	LD	LD	LD	
DALLAS SITE 002	75	LD	LD	LD	LD	
EL PASO SITE 002	75	LD	LD	LD	LD	
FORT WORTH SITE 001	75	LD	LD	LD	LD	
HOUSTON SITE 001	75	LD	LD	LD	LD	
LURBOCK SITE 001	75	LD	LD	LD	LD	
PASADENA SITE 002	75	LD	LD	LD	LD	
SAN ANTONIO SITE 014	75	LD	LD	LD	LD	
WICHITA FALLS SITE 002	75	LD	LD	LD	LD	
UTAH OGDEN SITE 001	75	LD	LD	LD	LD	
SALT LAKE CITY SITE 001	75	LD	LD	LD	LD	
VERMONT BURLINGTON SITE 003	75	0.0300	0.0166	0.0153	0.0540	0.0290
VIRGINIA DANVILLE SITE 001	75	0.0774	0.0174	LD	0.0339	0.0262
MCLEAN SITE 001	75	LD	LD	LD	LD	
HAMPTON SITE 001	75	0.0636	0.0475	0.0274	0.0484	0.0467
LYNCHBURG SITE 001	75	0.0167	0.0198	LD	0.0288	0.0218
LYNCHBURG SITE 002	75	LD	LD	LD	LD	
NEWPORT NEWS SITE 001	75	LD	LD	LD	LD	



POLLUTANT : 12164 - VANADIUM  
 METHOD : HI-VOL EMISSION SPECTRA BUFFLE FURNACE  
 UNITS : MICRO METER 125 C  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 V

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) .0099  
 95 PERCENT CONFIDENCE LIMITS  
 RIAS (X) 21 PRECISION (Y) .00

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
ARIZONA						
GRAND CANYON NAT P						
SITE 001	75	LD	LD	LD	LD	
ARIZONA						
MARICOPA CO						
SITE 005	75	LD	LD	LD	LD	
KANSAS						
MONTGOMERY CO						
SITE 001	75	LD	LD	LD	LD	
CALIFORNIA						
HUMBOLDT CO						
SITE 001	75	LD	LD	LD	LD	
COLORADO						
PASA VERDE NAT PAR						
SITE 002	75	LD	LD	LD	LD	
CONNECTICUT						
KENT CO						
SITE 001	75	LD	LD	LD	LD	
DISTRICT OF COLUMBIA						
WASHINGTON						
SITE 003	75	LD	LD	LD	.0370	
FLORIDA						
HARDEE CO						
SITE 001	75	LD	LD	LD	LD	
FLORIDA						
HIGHLANDS CO.						
SITE 002	75	LD	LD	LD	LD	
HAWAII						
HAWAII CO						
SITE 001	75	LD	LD	LD	LD	
HAWAII CO						
SITE 002	75	LD	LD	LD	LD	
HAWAII VOLCANOES N						
SITE 001	75	LD	LD	LD	LD	
IDAHO						
BUTTE CO						
SITE 001	75	LD	LD	LD	LD	
ILLINOIS						
CHICAGO						
SITE 002	75	.0509	.0144	LD	LD	
INDIANA						
MORRIS CO						
SITE 001	75	LD	LD	LD	LD	
INDIANA						
PARKE CO						
SITE 001	75	LD	LD	LD	LD	
INDIANVILL PAR						
LOUISIANA						
SITE 001	75	LD	LD	LD	LD	
MAINE						
ACADIA NAT PARK						
SITE 001	75	.0179	.0104	LD	LD	
MARYLAND						
CALVERT CO						
SITE 001	75	LD	.0186	.0244	.0221	.0217
MISSISSIPPI						
JACKSON CO						
SITE 001	75	LD	LD	LD	LD	
MISSOURI						
ST LOUIS						
SITE 002	75	LD	LD	LD	LD	
MISSOURI						
SHANNON CO						
SITE 002	75	LD	LD	LD	LD	
MONTANA						
GLACIER NAT PARK						
SITE 001	75	LD	LD	LD	LD	
MONTANA						
FORT HOWES						
SITE 008	75	LD	LD	LD	LD	
MONTANA						
ASHLAND						
SITE 026	75	LD	LD	LD	LD	
NEBRASKA						
THOMAS CO						
SITE 001	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
NEVADA						
WHITE PINE CO						
SITE 001	75	LD	LD	LD	LD	
NEW HAMPSHIRE						
CROSS CO						
SITE 001	75	.0357	LD	.0153	.0169	.0296
NEW MEXICO						
RIO ARRIBA CO						
SITE 001	75	LD	LD	LD	LD	
NEW YORK						
JEFFERSON CO						
SITE 001	75	LD	.0174	LD	LD	
NORTH CAROLINA						
CAPE HATTERAS NAT						
SITE 001	75	LD	LD	LD	LD	
NORTH CAROLINA						
ROXTON						
SITE 002	75	LD	LD	LD	LD	
OHIO						
CINCINNATI						
SITE 003	75	.0101	LD	LD	LD	
OKLAHOMA						
OKLAHOMA CITY						
SITE 001	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	
OKLAHOMA CITY						
SITE 015	75	LD	LD	LD	LD	.0280
OREGON						
CURRY CO						
SITE 001	75	LD	LD	LD	LD	
PENNSYLVANIA						
CLARION CO						
SITE 001	75	LD	LD	LD	LD	
INDIANA CO						
SITE 002	75	LD	LD	LD	LD	
PHILADELPHIA						
SITE 002	75	.0632	LD	.0211	LD	
RHODE ISLAND						
WASHINGTON CO						
SITE 002	75	.0217	LD	LD	LD	.0188
SOUTH CAROLINA						
RICHLAND CO						
SITE 002	75	LD	LD	LD	LD	.0280
SOUTH DAKOTA						
BLACK HILLS NAT FO						
SITE 001	75	LD	LD	LD	LD	
TENNESSEE						
CUMBERLAND CO						
SITE 001	75	LD	LD	LD	LD	
TEXAS						
MATAGORDA CO						
SITE 001	75	LD	LD	LD	LD	
TOM GREEN CO						
SITE 001	75	LD	LD	LD	LD	
UTAH						
EMERY COUNTY						
SITE 003	75	LD	LD	LD	LD	
VERMONT						
ORANGE CO						
SITE 001	75	.0275	LD	LD	LD	
VIRGINIA						
SHENANDOAH NAT PAR						
SITE 001	75	LD	LD	LD	LD	.0183
WYTHE CO						
SITE 001	75	LD	LD	LD	LD	
WASHINGTON						
KING CO						
SITE 002	75	LD	LD	LD	LD	

POLLUTANT : 12164 - VANADIUM  
 METHOD : HI-VOL EMISSION SPECTRA HUFFLE FURNACE  
 UNITS : UG/CU METER (25 C)  
 DATA TYPE : QUARTERLY COMPOSITE

NON-URBAN  
 V

ANALYTICAL QUALITY  
 ANALYTICAL DISCRIMINATION LIMIT (LD) : .0000  
 95 PERCENT CONFIDENCE LIMITS  
 BIAS (%): 2]      PRECISION (%): 40

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.
WISCONSIN DOOR CO SITE 001	75	LD	LD	LD	LD	
WYOMING GRAND TETON NAT PA SITE 001	75	LD	LD	LD	LD	
YELLOWSTONE NAT PA SITE 001	75	LD	LD	LD	LD	
VIRGIN ISLANDS ST THOMAS SITE 002	75	LD	.0204	.0130	LD	
ST CROIX SITE 004	75	LD	LD	LD	LD	

LOCATION	YR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	YR. AVG.

## APPENDIX A

### CONFIDENCE LIMITS OF MEASURED VALUES

The usual formula for computing confidence limits of individual values when the precision is measured as the coefficient of variation is:

$$L_u = X(1 + t_{\alpha/2} C_v/100) \quad (\text{A-1a})$$

$$L_l = X(1 - t_{\alpha/2} C_v/100) \quad (\text{A-1b})$$

where  $L_u$  = upper limit

$X$  = the measured value

$t_{\alpha/2}$  = the t statistic for the desired confidence

$C_v$  = the coefficient of variation expressed as a percentage

$L_l$  = lower limit

As an example, assume that the precision of an air pollution measurement system as measured by the coefficient of variation is 5.1 percent. An individually measured value of  $.475 \mu\text{g}/\text{m}^3$  was observed. Assuming a 95 percent confidence interval ( $\alpha=0.05$ ) and a large number of degrees of freedom,  $t_{0.025}=1.96$ . Therefore, the 95 percent confidence limits for the true value are:

$$\begin{aligned} L_u &= .475[1 + (1.96)(5.1)/100] && (\text{A-2a}) \\ &= .523 \mu\text{g}/\text{m}^3 \end{aligned}$$

$$\begin{aligned} L_l &= .475[1 - (1.96)(5.1)/100] && (\text{A-2b}) \\ &= .428 \mu\text{g}/\text{m}^3 \end{aligned}$$

Note that these limits are symmetric about the observed value.



Since use of the coefficient of variation implies that the precision is a function of the concentration level, more correct formulas for computing the confidence limits are:

$$L_u = \frac{X}{1 - t_{\alpha/2} C_v/100} \quad (\text{A-3a})$$

$$L_l = \frac{X}{1 + t_{\alpha/2} C_v/100} \quad (\text{A-3b})$$

Using the data in the previous example, the upper and lower 95 percent confidence limits are:

$$L_u = \frac{.475}{1 - (1.96)(5.1)/100} = .528 \text{ } \mu\text{g}/\text{m}^3 \quad (\text{A-4a})$$

$$L_l = \frac{.475}{1 + (1.96)(5.1)/100} = .432 \text{ } \mu\text{g}/\text{m}^3 \quad (\text{A-4b})$$

These limits are asymmetric (as they should be) about the observed value and they result in a slightly wider confidence interval than given by A-2a and A-2b.

The graphical representation of the procedure is shown in Figure A-1.

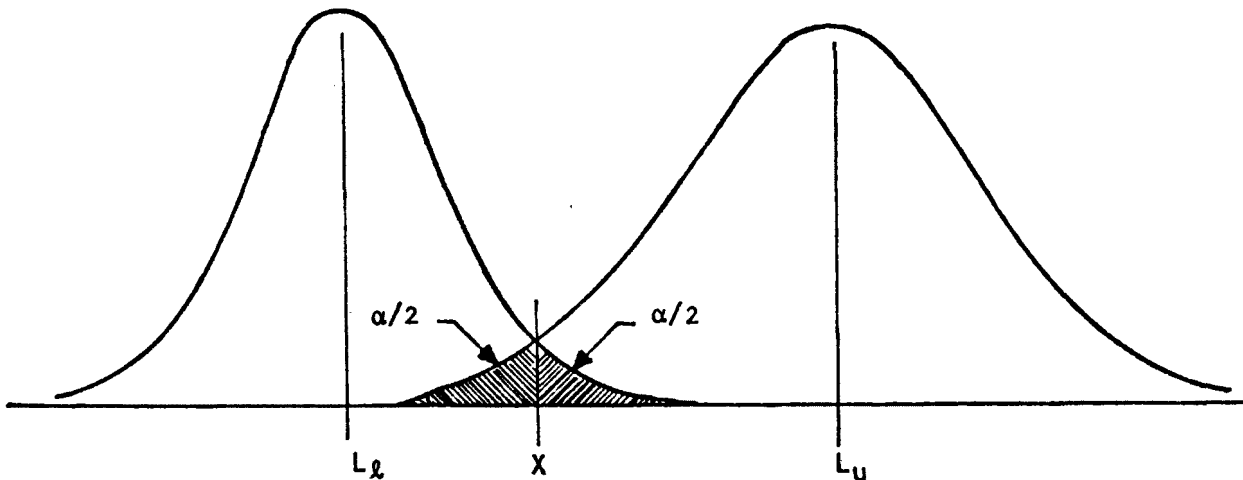


Figure A-1. Graphical representation of upper and lower confidence intervals for an individually measured concentration value when precision is evaluated over a range of concentration levels.

The confidence limits in equation A-3 were derived from Figure A-1 as follows:

$$X = L_u(1 - t_{\alpha/2} C_v/100) \quad (\text{A-5a})$$

$$X = L_l(1 + t_{\alpha/2} C_v/100) \quad (\text{A-5b})$$

Therefore,

$$L_u = \frac{X}{1 - t_{\alpha/2} C_v/100} \quad (\text{A-6a})$$

$$L_l = \frac{X}{1 + t_{\alpha/2} C_v/100} \quad (\text{A-6b})$$

The general formula for computing confidence intervals when both bias and precision are in percentage of concentration level, and when the bias varies from time to time in random manner, is as follows:

$$L_u = \frac{X(1 + B/100)}{1 - k\sqrt{S_B^2 + C_v^2/100}} \quad (\text{A-7a})$$

$$L_l = \frac{X(1 + B/100)}{1 + k\sqrt{S_B^2 + C_v^2/100}} \quad (\text{A-7b})$$

where  $L_u$  = upper confidence limit

$L_l$  = lower confidence limit

$X$  = measured value

$B$  = average percentage bias (percentage loss)

$S_B$  = standard deviation of percentage bias

$C_v$  = coefficient of variation for precision, percent

$k$  = standard normal deviate for desired confidence level

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