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**FINAL REPORT**

**ADJUSTMENTS TO THE  
HUD NATIONAL SURVEY DUST DATA  
FOR SECTION 403 ANALYSES**

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## **AUTHORS AND CONTRIBUTORS**

This study was funded and managed by the U.S. Environmental Protection Agency. The study was conducted by Battelle Memorial Institute under contract to the U.S. Environmental Protection Agency. Midwest Research Institute was issued a subcontract by Battelle to perform the laboratory experiments necessary for the study. Each organization's responsibilities are listed below.

### **Battelle Memorial Institute (Battelle)**

Battelle was responsible for designing and conducting the study, managing the work performed by Midwest Research Institute, performing statistical analyses on the study data, developing the conclusions and recommendations derived from the analyses, applying correction factors to the HUD National Survey data, and writing the final report.

### **Midwest Research Institute (MRI)**

MRI was responsible for designing and conducting the laboratory experiments performed as part of the study, performing statistical analyses on the study data, and writing Appendix A of the final report.

### **U.S. Environmental Protection Agency (EPA)**

EPA was responsible for managing the study, providing guidance on the objectives for the study and report, contributing to the development of conclusions and recommendations, and coordinating the EPA and peer reviews of the draft report. The work was done under the direction of Janet Remmers and Bradley Schultz. The EPA Project Officer was Sineta Wooten.

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## EXECUTIVE SUMMARY

The Risk Assessment, Economic Analyses, and Regulatory Impact Analyses being conducted to support the rulemaking for Section 403 of Title IV of the Toxic Substance Control Act all require information on environmental-lead levels in the national housing stock. The HUD National Survey is the primary source of data for these environmental-lead levels. During the course of the rulemaking, an issue was raised concerning the quality of the dust samples collected in the HUD National Survey: in particular, the effect of low tap weights on measured dust-lead concentrations.

Most of the dust samples in the HUD National Survey were collected using the Blue Nozzle vacuum. The Blue Nozzle vacuum collects dust in a plastic cassette containing a piece of cellulose fiber filter paper to capture the dust. In the HUD National Survey, only the weight of the dust that was tapped out of the cassette, referred to herein as tap weight, was determined. However, subsequent chemical analyses determined the amount of lead for both the dust tapped out of the cassette and residual dust in the filter cassette. Dust-lead concentration was then computed as the total amount of lead divided by the tap weight. Reported dust-lead concentrations will be biased if the tap weight substantially underestimates the combined weight of the dust tapped out of the cassette and residual dust remaining in the filter cassette. This bias, if present, will generally result in higher lead concentrations for samples with lower tap weights compared to samples with higher tap weights.

A statistical analysis of the dust sample data collected from the 284 privately-owned residences in the HUD National Survey was performed to investigate possible differences in dust-lead concentrations as a function of the tap weight. Descriptive analyses of the lead concentrations indicated that the dust-lead concentrations reported in the HUD National Survey increased with decreased tap weight. The trend may be due to a bias.

Laboratory experiments were conducted to generate a database for understanding and addressing the possible bias in dust-lead concentration computed via tap weight in the HUD National Survey. A regression model, developed for correcting the bias, was fitted to the laboratory data. Dust-lead concentrations reported in the HUD National Survey were then adjusted using correction factors predicted by the regression model. The regression model

removed the trend of dust-lead concentrations increasing with decreasing tap weight.

For purposes of analyses conducted to support Section 403, the correction was applied only to dust samples with tap weights greater than or equal to 0.7 mg. This limitation was required because tap weights in the dataset used to develop the regression model were all greater than or equal to 0.7 mg. Therefore, the correction factor predicted by the regression model may over-correct dust-lead concentrations for samples with tap weights less than 0.7 mg. For the purposes of analyses conducted to support Section 403, dust-lead concentrations of dust samples with tap weights less than 0.7 mg were excluded from the analysis of dust-lead concentrations. This decision applied only to the lead concentrations and not the lead loadings of these samples.



## **1.0 INTRODUCTION**

Section 403 of Title IV of the Toxic Substances Control Act (TSCA), as amended in Title X, the Residential Lead-Based Paint Hazard Reduction Act, will set standards (condition and location of lead-based paint, ranges of lead in dust and soil) against which to compare a residential environment when evaluating the presence and magnitude of lead-based paint hazards. The Risk Assessment, Economic Analyses, and Regulatory Impact Analyses being conducted for this rule all require information on environmental-lead levels in the national housing stock. The HUD National Survey [1, 2] is the primary source of data for these environmental-lead levels. Conducted in 1989-1990, the HUD National Survey collected data on lead levels in paint, dust, and soil from 284 privately-owned and 97 publicly-owned occupied housing units. The units were selected via a statistically-based sampling design to represent the national housing stock built prior to 1980.

During the course of the analyses to support Section 403 rulemaking, an issue was raised concerning the quality of the dust samples collected in the HUD National Survey: in particular, the effect of low tap weights on measured dust-lead concentrations. In addition, it was noted that a few dust samples were collected using wipes instead of the planned vacuum method. This report documents an assessment of these two items. The assessment involved only dust samples collected from entryways, dry rooms, and wet rooms in the 284 privately-owned residences sampled in the HUD National Survey.

Section 2 discusses the effect of low tap weights on lead concentrations for dust samples collected in the HUD National Survey. The identification of dust samples collected with wipes is addressed in Section 3. An evaluation of these two items on the Section 403 Risk Assessment and recommendations for resolving them are presented in Section 4.

### **1.1 PEER REVIEW**

The technical report on this study was reviewed independently by members of a peer review panel. The majority of comments received were either informational and required no changes, or were editorial in nature. The following paragraphs summarize the remainder of the comments and how they were addressed.

One reviewer suggested that the reversed weight ratio (the weight of the tapped-out dust over the weight of total dust) should be used to correct the bias rather than weight ratio model used in this report. After investigating this possibility, it was decided that over the range of tap weights in the HUD National Survey data, no substantial differences in correction factors would result from using the reversed weight ratio. For this reason, the form of the model presented in this report was not changed.

Another reviewer pointed out that the data point in the laboratory study which was identified as an outlier based on visual inspection alone could not be considered an outlier without a quantitative justification. After reviewing the laboratory data, it was determined that all of the data should be included in the model fitting. As a result, a new regression model was fitted to the laboratory data and the revised correction factors were applied to the HUD National Survey dust data. This revision was relatively minor, with the average percent change between the original adjustment to the data and the new adjustment equaling 1.6 percent.

EPA has established a public record for the peer review under administrative record 168. The record is available in the TCSA Nonconfidential Information Center, which is open from noon to 4 pm Monday through Friday, except legal holidays. The TCSA Nonconfidential Information Center is located in Room NE-B607, Northeast Mall, 401 M Street SW, Washington, D.C.

## **2.0 EFFECT OF LOW TAP WEIGHTS ON DUST-LEAD CONCENTRATIONS**

Section 2.1 discusses why dust-lead concentrations measured in the HUD National Survey may be biased. Furthermore, it is indicated there that the bias is likely to increase with decreasing tap weight and that the bias may be expressed as a function of the ratio of total dust weight to tap weight. Descriptive analyses presented in Section 2.2 show that the dust-lead concentrations reported in the HUD National Survey increased with decreased tap weight. The trend may be due to a bias.

Laboratory experiments were conducted to measure weight of residual dust in filter cassettes, tap weight, total dust weight, and ratio of total dust weight to tap weight for dust samples collected via the Blue Nozzle vacuum. The experiments, summarized in Section 2.3,

provided a database for understanding and addressing the bias in dust-lead concentration computed via tap weight in the HUD National Survey. A regression model, developed for correcting the bias, was fitted to the laboratory data. In Section 2.4, the regression model is applied to the dust-lead concentrations collected in the HUD National Survey. Furthermore, it is shown in Section 2.4 that the regression model removes the trend of dust-lead concentrations increasing with decreased tap weight.

## **2.1 WHY DUST-LEAD CONCENTRATIONS MAY BE BIASED**

Dust samples were collected from interior window sills, window troughs, and floors in the HUD National Survey using the Blue Nozzle vacuum device. The Blue Nozzle vacuum collects dust in a plastic cassette containing a piece of cellulose fiber filter paper to capture the dust [3]. In the HUD National Survey, the filter cassettes were not preweighed before sampling, and only the weight of the dust that was tapped out of the cassette, referred to herein as tap weight, was determined. However, subsequent chemical analyses on each sample determined the amount of lead for both the dust tapped out of the cassette and residual dust in the filter cassette, combined. Dust-lead concentration was then computed as the total amount of lead divided by the tap weight.

It is believed that some dust may have remained in the filter cassette, in which case the dust-lead concentrations reported in the HUD National Survey may be biased. Dust-lead concentration is defined as weight of lead in sampled dust divided by weight of sampled dust. Dust-lead concentrations reported in the HUD National Survey will be biased if the tap weight substantially underestimates the combined weight of the dust tapped out of the filter cassette and residual dust remaining on the filter cassette. The dust-lead concentration reported in the HUD National Survey is equal to:

$$\frac{(\mu\text{g of Pb on filter cassette}) + (\mu\text{g of Pb for tapped-out dust})}{(\text{g of tapped-out dust})}$$

instead of what should have been measured and reported:

$$\frac{(\mu\text{g of Pb on filter cassette}) + (\mu\text{g of Pb for tapped-out dust})}{(\text{g of dust on filter cassette}) + (\text{g of tapped-out dust})}.$$

The ratio of the two terms is

$$\frac{(\text{g of dust on filter cassette}) + (\text{g of tapped-out dust})}{(\text{g of tapped-out dust})} = \frac{\text{total dust weight}}{\text{tap weight}},$$

where total dust weight is the total weight of the dust tapped out of the filter cassette and residual dust remaining in the filter cassette. Therefore, the bias in the reported dust-lead concentrations is a function of the ratio of the total dust weight to the tap weight. Because the weight of the residual dust in the filter cassette is likely to comprise a larger percentage of the total dust weight for low tap weight samples, the bias is expected to increase with decreased tap weight. This bias in dust-lead concentration, if present in the HUD National Survey, would generally result in higher dust-lead concentrations for samples with lower tap weights compared to samples with higher tap weights.

## **2.2 STATISTICAL ASSESSMENT OF LOW TAP WEIGHT SAMPLES**

A statistical analysis of the dust sample data collected from the 284 private houses was performed to investigate possible differences in dust-lead concentrations as a function of the tap weight. Only window and floor samples from dry-rooms, wet-rooms and entranceways were included in the analysis. All samples collected from common areas in the HUD National Survey were excluded since these samples will not be included in analyses supporting Section 403 rulemaking.

To evaluate the impact of low tap weight on dust-lead concentrations, dust-lead concentrations were examined for nine ranges of tap weight spanning from 0.1 mg to greater than 25 mg. The first tap weight range, tap weight of 0.1 mg, was called out separately because 0.1 mg may represent the limit of detection for the gravimetric analysis. Conversations with laboratory personnel providing the basis for this reasoning are discussed in Section 4.0.

Furthermore, dust-lead loadings and/or dust-lead concentrations were missing for 599 of the 718 samples with a tap weight of 0.1 mg.

Table 1 presents summary statistics for the dust-lead concentrations and dust-lead loadings for floor dust samples for each of the nine ranges of tap weight and all floor dust samples regardless of tap weight. The number of these samples with a nonmissing dust-lead concentration, the geometric mean, geometric standard deviation, and range of the dust-lead concentrations for the floor dust samples are shown in columns two to six. Column seven provides the number of floor dust samples with a dust-lead concentration greater than 1000  $\mu\text{g/g}$ . The number of non-missing dust-lead loadings, the geometric mean, and geometric standard deviation for the dust-lead loadings of the floor dust samples are presented in the last three columns of the table. Tables 2 and 3 present similar results for window sill and window trough samples, respectively. Results calculated across floor, window sill, and window trough samples are presented in Table 4.

An inverse relationship between dust-lead concentration and tap weight is apparent in Table 1; dust-lead concentration decreased with increased tap weight. A similar relation is seen in Table 2 for window sill dust-lead concentration. As shown in Table 3, there is no apparent trend between dust-lead concentration and tap weight for samples collected from window troughs. However, the limited sample size may have made it impossible to detect any trend. Only 25 out of the 149 dust samples collected from window troughs had tap weights less than 10 mg, and window trough dust-lead concentrations tend to be more variable than those collected from floors and window sills.

Floor dust-lead concentrations are plotted against tap weights in Figures 1 to 4, with each of the plots corresponding to one of four tap weight classifications. To better show the data, the y-axis was truncated at 15,000  $\mu\text{g/g}$  and floor dust samples with dust-lead concentrations greater than 15,000  $\mu\text{g/g}$  were omitted from each of the plots. A total of four samples were excluded; three in Figure 2 and one in Figure 3. Three of the samples had dust-lead concentrations greater than 100,000  $\mu\text{g/g}$ . Figure 1 shows dust-lead concentrations for the 0.1 mg tap weight samples, which are all greater than 4000  $\mu\text{g/g}$ . As stated above, there is some concern about the validity of these 0.1 mg tap weight samples. Although the trend of increased dust-lead concentration with decreased tap weight is quite visible in Figure 2, the relationship is not obvious in Figures 3 and 4.

**Table 1. Floor Dust-Lead Concentrations and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	5	6540	1.5	4660	13000	5	26	0.115	3.6
≥ 0.1 to < 1	37	1290	3.4	41.4	18600	23	35	0.139	4.1
≥ 1 to < 2	30	752	4.7	75.0	355000	12	30	0.270	4.6
≥ 2 to < 3	35	427	2.8	24.9	4330	5	35	0.256	2.9
≥ 3 to < 4	35	310	5.4	3.45	114000	7	35	0.272	5.4
≥ 4 to < 5	15	327	3.1	43.1	3770	3	15	0.377	3.2
≥ 5 to < 10	118	280	3.1	24.5	133000	11	117	0.500	3.2
≥ 10 to < 25	137	210	3.3	1.13	3760	12	137	0.850	3.3
≥ 25	402	190	4.2	0.0500	11300	42	402	4.36	4.7
All Samples	814	256	4.2	0.0500	355000	120	832	1.30	6.6

**Table 2. Window Sill Dust-Lead Concentrations and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	27	3800	4.7	124	55900	22	79	0.317	5.3
≥ 0.1 to < 1	41	2030	8.9	15.5	5850000	25	41	1.03	7.7
≥ 1 to < 2	26	1570	5.4	37.7	104000	16	26	2.15	6.1
≥ 2 to < 3	19	989	3.3	55.9	7500	9	19	1.97	4.5
≥ 3 to < 4	13	940	4.1	156	9640	7	13	3.93	5.1
≥ 4 to < 5	13	451	4.3	42.9	4530	4	13	1.87	4.6
≥ 5 to < 10	51	658	5.6	3.06	96500	20	51	3.92	6.0
≥ 10 to < 25	44	476	4.7	1.74	9650	14	44	4.99	6.2
≥ 25	105	665	6.7	0.785	102000	41	106	44.8	5.5
All Samples	339	911	6.4	0.785	5850000	158	392	3.70	12

**Table 3. Window Trough Dust-Lead Concentrations and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	5	10700	8.5	2430	457000	5	14	0.546	6.5
≥ 0.1 to < 1	3	1830	4.7	305	4980	2	3	0.703	6.4
≥ 1 to < 2	0	.	.	.	.	.	0	.	.
≥ 2 to < 3	1	122	.	122	122	0	1	0.366	.
≥ 3 to < 4	4	2450	3.4	473	7800	3	4	9.88	3.0
≥ 4 to < 5	3	4780	2.4	2820	13300	3	3	25.7	2.2
≥ 5 to < 10	9	4920	3.4	1010	63100	9	9	34.5	3.9
≥ 10 to < 25	18	1680	9.8	33.7	83600	10	18	33.3	9.6
≥ 25	106	1770	6.4	5.17	109000	69	106	243	6.2
All Samples	149	2010	6.6	5.17	457000	101	158	76.6	15



**Table 4. Floor, Window Sill, and Window Trough Dust-Lead Concentrations and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	37	4700	4.7	124	457000	32	119	0.271	5.3
≥ 0.1 to < 1	81	1640	5.9	15.5	5850000	50	79	0.418	7.5
≥ 1 to < 2	56	1060	5.2	37.7	355000	28	56	0.707	7.1
≥ 2 to < 3	55	558	3.2	24.9	7500	14	55	0.522	4.7
≥ 3 to < 4	52	480	5.5	3.45	114000	17	52	0.700	8.3
≥ 4 to < 5	31	485	4.3	42.9	13300	10	31	1.11	6.1
≥ 5 to < 10	178	413	4.5	3.06	133000	40	177	1.12	6.3
≥ 10 to < 25	199	303	4.7	1.13	83600	36	199	1.75	6.5
≥ 25	613	346	6.2	0.0500	109000	152	614	13.0	9.7
All Samples	1302	451	5.9	0.0520	5850000	379	1382	2.78	12

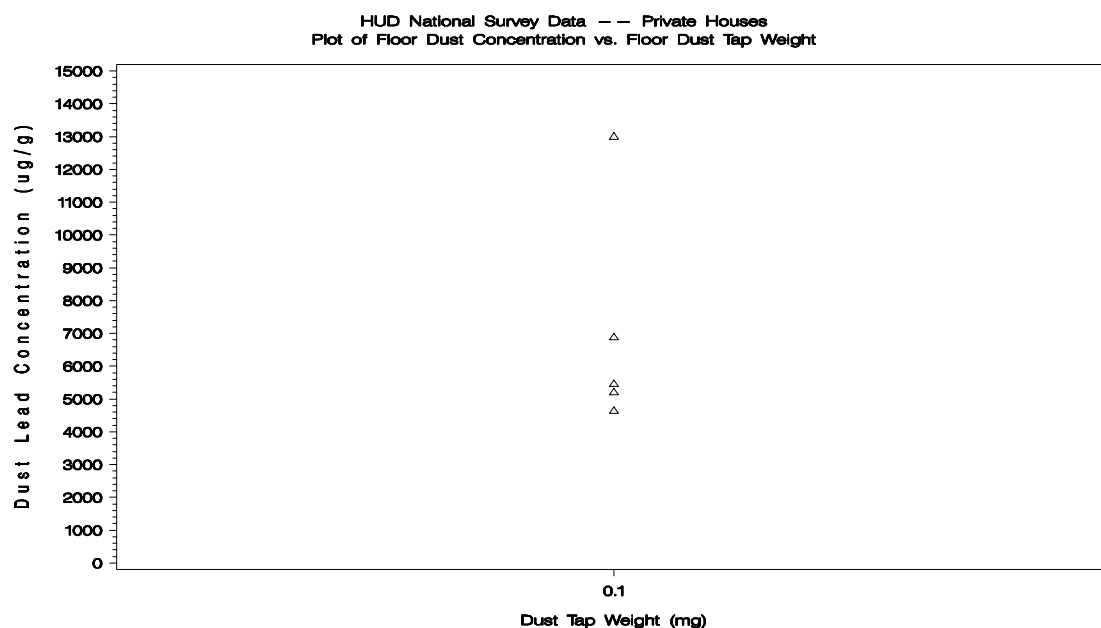


Figure 1. Floor Dust-Lead Concentration Plotted Against Tap Weight for Samples with Tap Weight Equal to 0.1 mg.

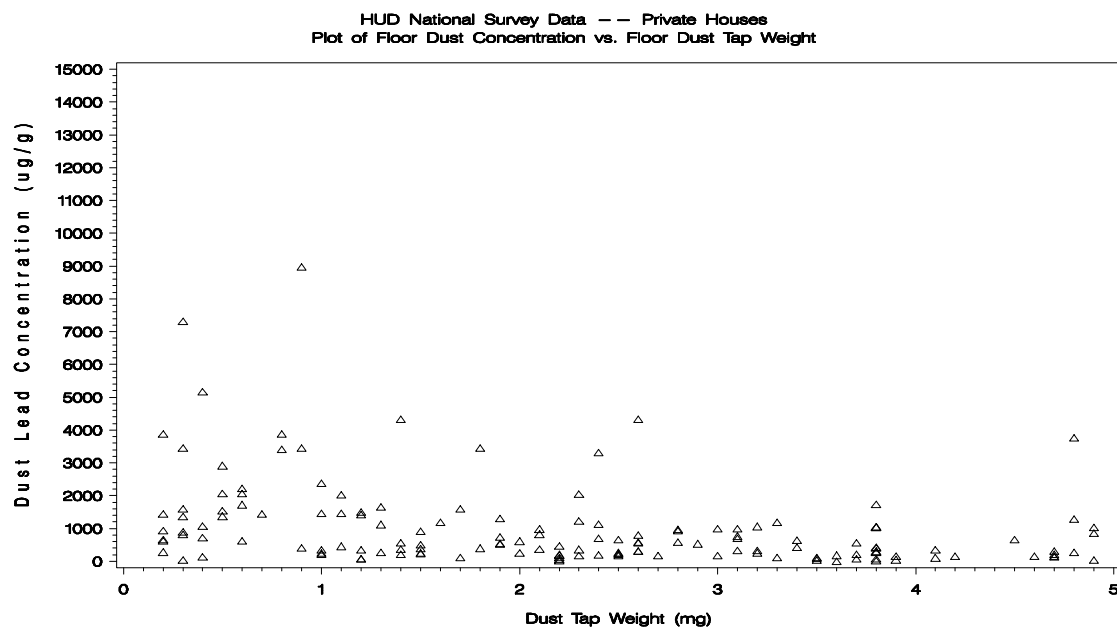
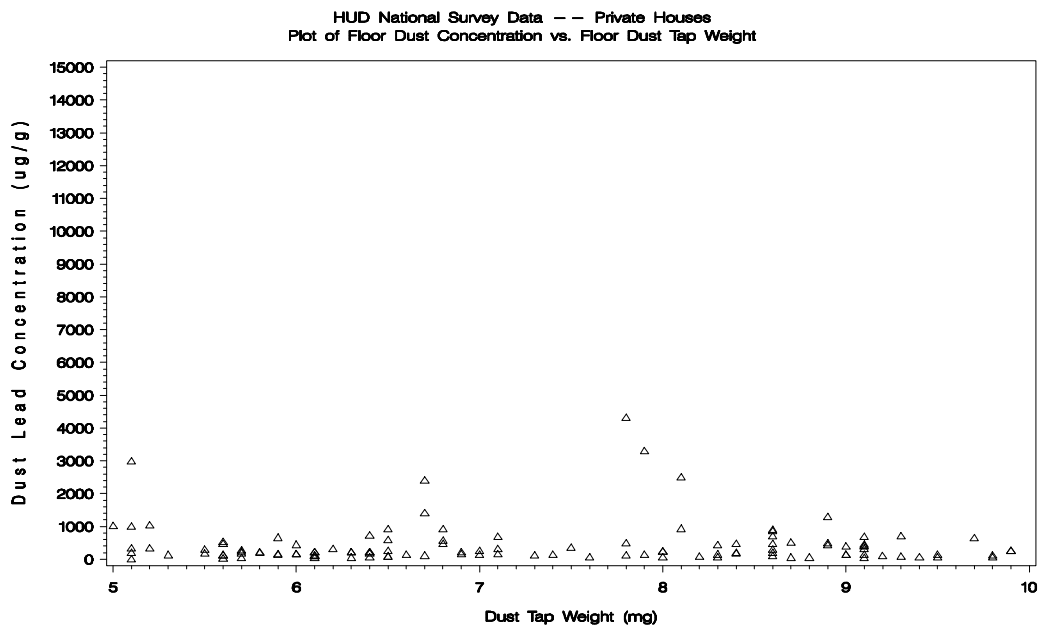
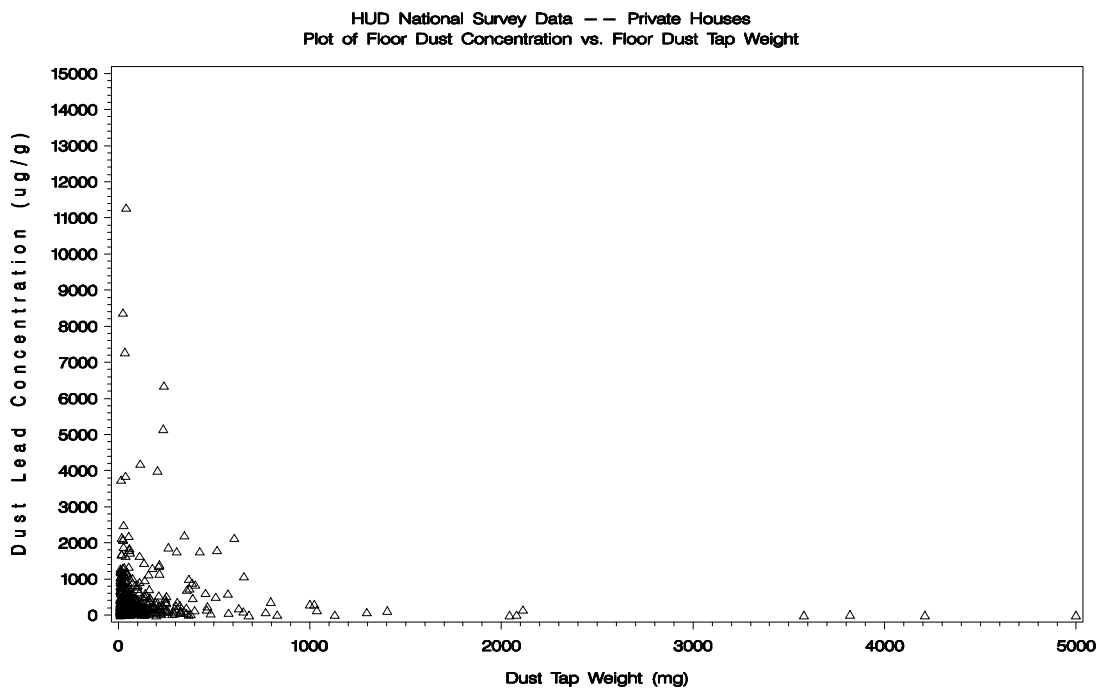


Figure 2. Floor Dust-Lead Concentration Plotted Against Tap Weight for Samples with Tap Weights Greater than 0.1 mg and Less than 5 mg. Two Samples with Dust-Lead Concentrations Greater than 100,000  $\mu\text{g/g}$  and One Sample with Dust-Lead Concentration Approximately 20,000  $\mu\text{g/g}$  are not Shown in the Plot.



**Figure 3. Floor Dust-Lead Concentration Plotted Against Tap Weight for Samples with Tap Weights Greater than or Equal to 5 mg and Less than 10 mg. One Sample with a Dust-Lead Concentration Greater than 100,000  $\mu\text{g/g}$  is not Shown in the Plot.**



**Figure 4. Floor Dust-Lead Concentration Plotted Against Tap Weight for Samples with Tap Weights Greater than or Equal 10 mg.**

Additional analyses were conducted to determine if any of the floor dust-lead concentrations for the 284 privately-owned homes in the HUD National Survey were statistical outliers. An outlier is a data point that is abnormally large or small in value. Because large and small are relative terms, externally deleted studentized residuals were employed to determine how large or small each dust-lead concentration was relative to the mean dust-lead concentration for the floor samples in the same tap weight category for four categories: equal to 0.1 mg, greater than 0.1 mg and less than 5 mg, greater than or equal to 5 mg and less than 10 mg, and greater than or equal to 10 mg. First, a one-way analysis of variance was conducted using the category of tap weight (four ranges, as described above) as the explanatory factor. Second, externally deleted studentized residuals were computed for each sample. Third, each externally deleted residual was compared to the extreme value likely to occur if the data were sampled from a normal distribution. The extreme value was defined to be the  $0.025/(\text{number of floor dust samples})$  lower or upper percentile of the normal distribution. This definition utilizes a Bonferoni adjustment to account for the simultaneous comparisons. Based on this analysis, three floor dust-lead concentrations were determined to be unusually large and six were determined to be unusually small. The sampling location, dwelling identification number, dust tap weight, dust-lead concentration, and externally deleted studentized residual for these nine samples are shown in Table 5. The window sill and trough dust data and paint data were examined for the two homes (2751402 and 0131102) with the large floor dust-lead concentrations. Dust-lead concentrations for window sill and trough samples were not unusual and neither home contained any damaged lead-based paint.

**Table 5. Results of Outlier Analysis**

Sampling Location	Dwelling ID	Dust Tap Weight (mg)	Dust-Lead Concentration (µg/g)	Externally Deleted Studentized Residual
Dry-room floor	2751402	8.2	132,900	4.62
Wet-room floor	2751402	3.5	114,300	3.97
Wet-room floor	0131102	1.2	354,900	4.83
Dry-room floor	0310201	3.6	3.45	-3.81
Dry-room floor	0430306	3580.1	0.58	-4.34
Wet-room floor	2622603	681.1	0.84	-4.06
Wet-room floor	1041607	4999.8	0.05	-6.21
Entryway floor	1731603	11	1.13	-3.83
Entryway floor	0340505	2041.7	1.01	-3.92

### **2.3 LABORATORY ASSESSMENT OF LOW TAP WEIGHT SAMPLES**

As discussed in Section 2.1, dust-lead concentrations reported in the HUD National Survey may be biased due to use of tap weight in calculations of dust-lead concentrations. The potential bias in the dust-lead concentration is a function of the ratio of the total dust weight to the tap weight. Laboratory experiments were conducted using the Blue Nozzle vacuum to measure weight of residual dust in filter cassettes, tap weight, total dust weight, and ratio of total dust weight to tap weight. This section summarizes the results of those experiments and how the results may be used to estimate the bias in the HUD National Survey dust-lead concentrations. A more detailed discussion of the laboratory experiments, including tables of the collected data, is provided in Appendix A.

Different weights of dust, of various particle sizes, were placed on a 12-inch tile substrate, and the Blue Nozzle sampler was used to vacuum the dust off the substrate. Vacuum sampling was done in accordance with the protocol specified in Appendix H of the EPA report “Laboratory Evaluation of Dust and Dust Lead Recoveries for Samplers and Vacuum Cleaners” [4]. After each experiment, tiles were cleaned with Kimwipes using distilled water and allowed to dry overnight. The tiles were judged to be clean (i.e., dust free) based on visual inspection. Each filter cassette was preweighed so that the weight of dust remaining in the filter cassette, after dust was tapped out of the cassette, could be determined. In this way, both the weight of the dust tapped out of the cassette, as well as the weight of dust remaining in the filter cassette, were determined.

As shown in Table 6, experiments were conducted for a total of nine combinations of dust particle sizes and amount of dust tapped out of the cassette. Each combination of particle size and amount of dust was repeated at least five times. Although the dust test matrix states that the lowest range of dust to be tapped out was 0.2 - 5.0 mg, the minimum dust tapped out in any of the repetitions was 0.7 mg. House dust from a previously conducted EPA study [3,4] was used in these experiments.

**Table 6. Test Matrix for Laboratory Experiments**

Target Amount of Dust Tapped Out	Particle Sizes of Dust		
	< 53 µm	150-212 µm	250-2000 µm
0.2-5.0 mg	8	5	5
5.0-10.0 mg	6	6	5
10.0-20.0 mg	8	7	9

The ratio of the total dust weight to the tap weight was computed for each experiment. Ratio data are plotted against tap weight in Figure 5. The trend noted in Section 2.2 between dust-lead concentration and tap weight is also apparent in Figure 5; the observed ratios decrease with increasing tap weight.

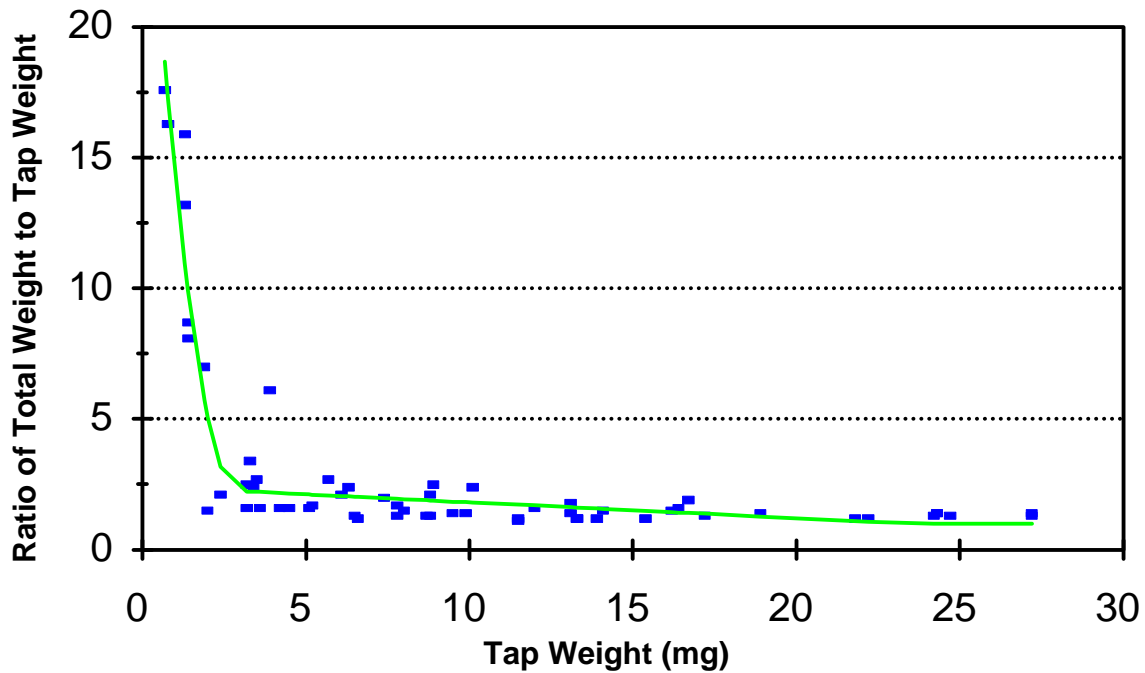
A regression model was fitted to the data to estimate the relationship between the observed ratios and tap weights. Details of the regression model are provided in Appendix A. The equation of the fitted model, shown as the solid line in Figure 5, is

$$\text{Ratio} = \left[ \begin{array}{ll} 31 - 20 * \text{Tap Weight} + 3.4 * (\text{Tap Weight})^2 & \text{Tap Weight} < 2.9 \text{ mg} \\ 2.4 - 0.061 * \text{Tap Weight} & 2.9 \text{ mg} \leq \text{Tap Weight} < 23.4 \text{ mg} \\ 1 & 23.4 \text{ mg} \leq \text{Tap Weight} \end{array} \right]$$

The last segment (tap weight  $\geq 23.4$  mg) was added so that the estimated ratio will always be greater than or equal to one.

## **2.4 CORRECTING THE BIAS IN DUST-LEAD CONCENTRATION**

The regression model presented in Section 2.3 was used to estimate the ratio of the total dust weight to tap weight for dust samples collected in the HUD National Survey. The ratios were predicted only for the floor and window samples collected from dry-rooms, wet-rooms and entranceways in the 284 privately-owned houses in the HUD National Survey. Dust-lead concentrations reported in the HUD National Survey were then corrected by dividing the reported dust-lead concentration by the predicted ratio of the total dust weight to tap weight. It should be noted that the regression model used to adjust the HUD National Survey data was based on a



**Figure 5. Ratio of Total Weight of Dust Divided by Tap Weight Plotted Against Tap Weight and Overlaid with Fitted Regression Model.**

laboratory experiment using only dry dust. Potential differences in the adhesive properties of dust with a higher moisture content may exist. The predicted ratios of total dust weight to tap weight based on a laboratory experiment that considered only dry dust samples may not be as accurate for dust samples in wet rooms. Nevertheless, the adjusted dust-lead concentrations for dust samples in wet rooms are expected to be more representative than those originally reported.

Descriptive statistics for the corrected floor, window sill, window trough, and combined dust-lead concentrations are presented in Tables 7 to 10, respectively. Tables 1 to 4 provided analogous information for the uncorrected dust-lead concentrations. The inverse relationship between dust-lead concentration and tap weight noted in Tables 1 and 2 are no longer present in Tables 7 and 8, thereby providing evidence that the correction factor may have removed the bias.

The corrected floor dust-lead concentrations are plotted against tap weights in Figures 6 to 9, with each of the plots corresponding to one of four tap weight classifications. To

better show the data, the y-axis was truncated at 3,000  $\mu\text{g/g}$  and floor dust samples with dust-lead concentrations greater than 3,000  $\mu\text{g/g}$  were omitted from each of the plots. A total of eleven samples were excluded, two in Figure 7, one in Figure 8, and eight in Figure 9. The three samples from Figures 7 and 8 had dust-lead concentrations greater than 29,000  $\mu\text{g/g}$ , and the eight samples from Figure 9 had dust-lead concentrations ranging between 3,900  $\mu\text{g/g}$  and 12,000  $\mu\text{g/g}$ . Analogous plots for the uncorrected data were given in Figures 1 to 4. Once again, the trend of increased dust-lead concentration with decreased tap weight seen in Figure 2 is no longer apparent in the analogous figure, Figure 7. Figure 10 is similar to Figures 6 to 9; however, it shows the corrected dust-lead concentrations plotted against tap weight for all of the samples except for the three samples with concentrations exceeding 29,000  $\mu\text{g/g}$ . The other eight samples excluded from Figure 9 are included in Figure 10.

### **3.0 WIPE SAMPLES IN HUD NATIONAL SURVEY**

The EPA report on the HUD National Survey [1] stated that a few dust samples were collected with wet wipes in homes where vacuuming was impossible (page 3-39). However, there are no identifiers in the database that distinguish between the wipe and vacuum samples. The laboratory records from the HUD National Survey were reviewed to determine which dust samples were collected by wipe sampling. Table 11 presents the dwelling identification numbers and sampling locations of the wipe samples. Analyses conducted for Section 403 are utilizing the dust samples collected from floors, window sills and window troughs in either the entryway, wet room or dry room in the 284 privately-owned residences in the HUD National Survey. Dust samples collected from the common areas of privately-owned residences and samples collected from publicly-owned residences are not being utilized. Only two of the samples listed in Table 11 meet this criteria: a window trough sample from the dry room of housing unit 1820802 and a window sill sample from the dry room of housing unit 0440602. The impact of these two samples being wipe samples rather than vacuum dust samples is negligible on the Section 403 Risk Assessment. Of the two wipe samples, the lead concentration is missing for one sample and non-missing for the other sample. For the purposes of analyses conducted to support Section 403, the dust-lead concentration of the one non-missing sample will be excluded.



**Table 7. Floor Dust-Lead Concentrations Corrected for Bias and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	5	227	1.5	162	452	0	26	0.115	3.6
≥ 0.1 to < 1	37	61.6	3.5	1.65	1080	1	35	0.139	4.1
≥ 1 to < 2	30	81.2	4.7	6.20	29300	1	30	0.270	4.6
≥ 2 to < 3	35	132	3.1	6.26	1650	2	35	0.256	2.9
≥ 3 to < 4	35	140	5.4	1.56	51600	1	35	0.272	5.4
≥ 4 to < 5	15	152	3.2	20.2	1770	1	15	0.377	3.2
≥ 5 to < 10	118	141	3.1	11.6	68900	6	117	0.500	3.2
≥ 10 to < 25	137	151	3.3	0.642	2550	5	137	0.850	3.3
≥ 25	402	190	4.2	0.0500	11300	42	402	4.36	4.7
All Samples	814	156	3.9	0.0500	68900	59	832	1.30	6.6

**Table 8. Window Sill Dust-Lead Concentrations Corrected for Bias and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	27	132	4.7	4.31	1940	3	79	0.317	5.3
≥ 0.1 to < 1	41	97.1	8.5	0.901	217000	6	41	1.03	7.7
≥ 1 to < 2	26	171	5.5	4.21	14500	3	26	2.15	6.1
≥ 2 to < 3	19	266	3.5	19.5	1980	4	19	1.97	4.5
≥ 3 to < 4	13	425	4.1	70.5	4310	5	13	3.93	5.1
≥ 4 to < 5	13	209	4.3	20.1	2110	2	13	1.87	4.6
≥ 5 to < 10	51	329	5.7	1.61	47300	13	51	3.92	6.0
≥ 10 to < 25	44	316	4.7	1.45	5990	11	44	4.99	6.2
≥ 25	105	665	6.7	0.785	102000	41	106	44.8	5.5
All Samples	339	304	6.4	0.785	217000	88	392	3.70	12

**Table 9. Window Trough Dust-Lead Concentrations Corrected for Bias and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	5	371	8.5	84.5	15900	1	14	0.546	6.5
≥ 0.1 to < 1	3	91.6	4.0	19.2	267	0	3	0.703	6.4
≥ 1 to < 2	0	.	.	.	.	.	0	.	.
≥ 2 to < 3	1	24.1	.	24.1	24.1	0	1	0.366	.
≥ 3 to < 4	4	1110	3.4	213	3500	2	4	9.88	3.0
≥ 4 to < 5	3	2210	2.4	1300	6190	3	3	25.7	2.2
≥ 5 to < 10	9	2410	3.4	507	30000	8	9	34.5	3.9
≥ 10 to < 25	18	1200	9.3	33.7	59500	9	18	33.3	9.6
≥ 25	106	1770	6.4	5.17	109000	69	106	243	6.2
All Samples	149	1480	6.8	5.17	109000	92	158	76.6	15

**Table 10. Floor, Window Sill, and Window Trough Dust-Lead Concentrations Corrected for Bias and Dust-Lead Loadings by Tap Weight for the 284 Privately-Owned Houses in the HUD National Survey**

Tap Weight Range (mg)	Dust-Lead Concentration (µg/g)						Dust-Lead Loading (µg/ft <sup>2</sup> )		
	Number	Geometric Mean	Geometric Standard Deviation	Minimum	Maximum	Number >1000	Number	Geometric Mean	Geometric Standard Deviation
0.1	37	163	4.7	4.31	15900	4	119	0.271	5.3
≥ 0.1 to < 1	81	78.7	5.8	0.901	217000	7	79	0.418	7.5
≥ 1 to < 2	56	115	5.2	4.21	29300	4	56	0.707	7.1
≥ 2 to < 3	55	163	3.4	6.26	1980	6	55	0.522	4.7
≥ 3 to < 4	52	217	5.5	1.56	51600	8	52	0.700	8.3
≥ 4 to < 5	31	225	4.3	20.1	6190	6	31	1.11	6.1
≥ 5 to < 10	178	208	4.4	1.61	68900	27	177	1.12	6.3
≥ 10 to < 25	199	214	4.6	0.642	59500	25	199	1.75	6.5
≥ 25	613	346	6.2	0.0500	109000	152	614	13.0	9.7
All Samples	1302	240	5.6	0.0500	217000	239	1382	2.78	12

Table 11. Distribution of Wipe Samples Taken in the HUD National Survey

LBP_ID	Location (Sample ID)												Number of Wipe Samples	Public vs Private
	EW (61)	DF (62)	WF (63)	WS (64)	WW (65)	DS (66)	DW (67)	CH (68)	CE (69)	CF (70)	CS (71)	CW (72)		
0720300									1	1			2	Private
1931906									1				1	Private
1820802							1			1	1		3	Private
1952506									1	1			2	Private
0440602						1							1	Private
1830801									1	1	1	1	4	Private
1932300									1				1	Private
1860204									1	1	1		3	Public
1861202									1	1	1		3	Public
1861400									1	1	1		3	Public
1860501									1				1	Public
1860600									1	1			2	Public
1861004									1	1			2	Public
1861509										1			1	Public
1860709									1	1	1		3	Public
1160308	1	1	1	1		1					1		6	Public
1160506	1	1	1	1	1	1	1			1	1	1	10	Public
1160704										1			1	Public
1161108	1	1	1	1	1	1	1			1			8	Public
1161207	1	1	1	1	1	1	1			1			8	Public
1660604									1				1	Public
1760503									1	1			2	Public
1660703									1	1			2	Public
1760305									1	1	1		3	Public
1660406		1		1		1			1	1			5	Public
1760206									1				1	Public
1660505									1	1			2	Public

Total Number of Wipe Samples = 81

EW = Entryway floor sample (there are no window samples from entryways)

WF = Wet Room Floor, WS = Wet Room Window Sill, WW = Wet Room Window Well (Trough)

DF = Dry Room Floor, DS = Dry Room Window Sill, DW = Dry Room Window Well (Trough)

CH = Common Area Hall, CE = Common Area Entryway

CF = Common Area Floor, CS = Common Room Window Sill, CF = Common Room Floor, CW = Common Room Window Well (Trough)

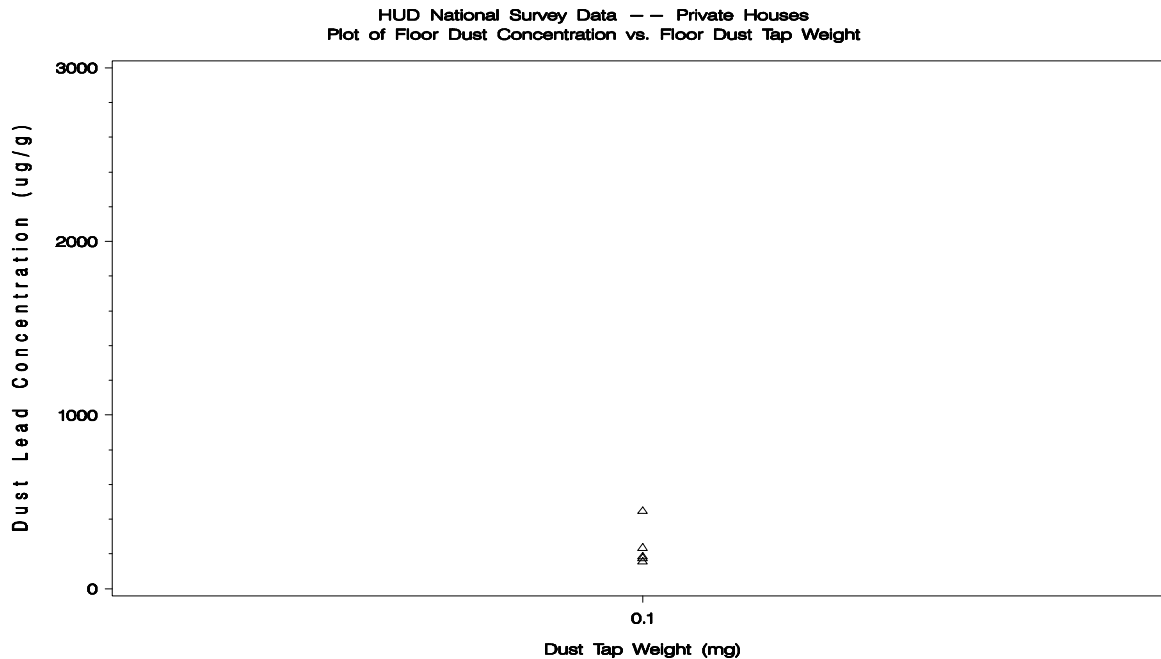


Figure 6. Dust-Lead Concentration Corrected for Bias Plotted Against Tap Weight for Samples with Tap Weight Equal to 0.1 mg.

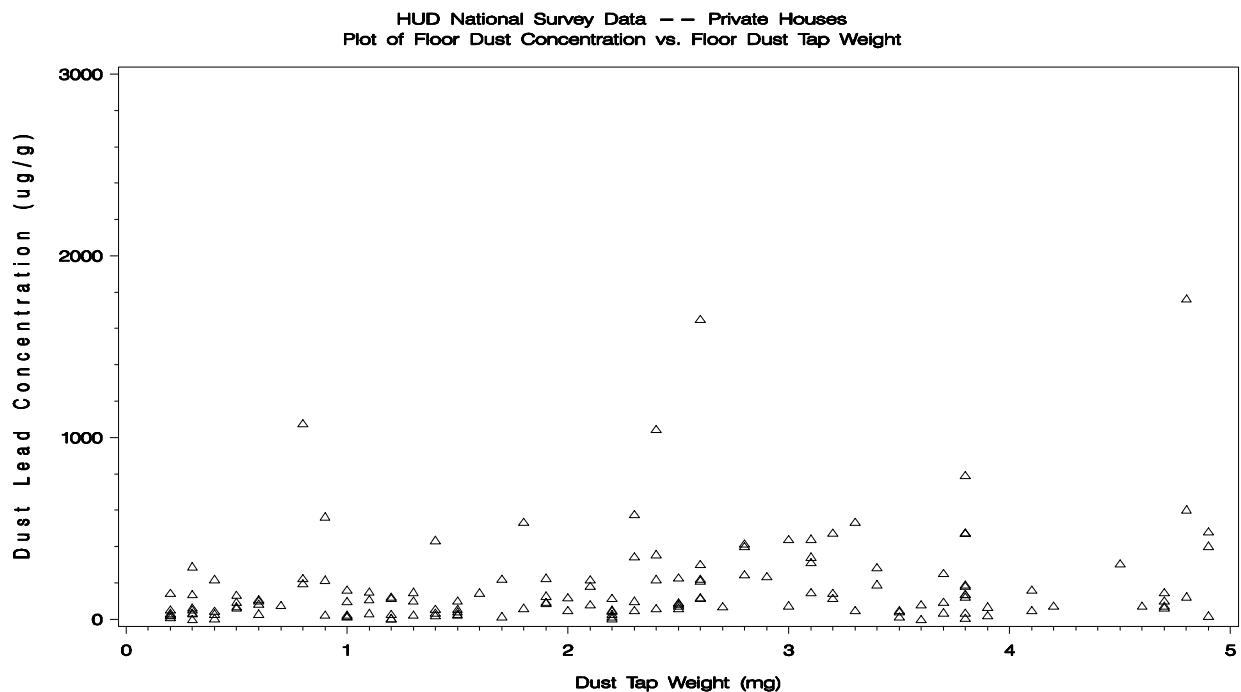
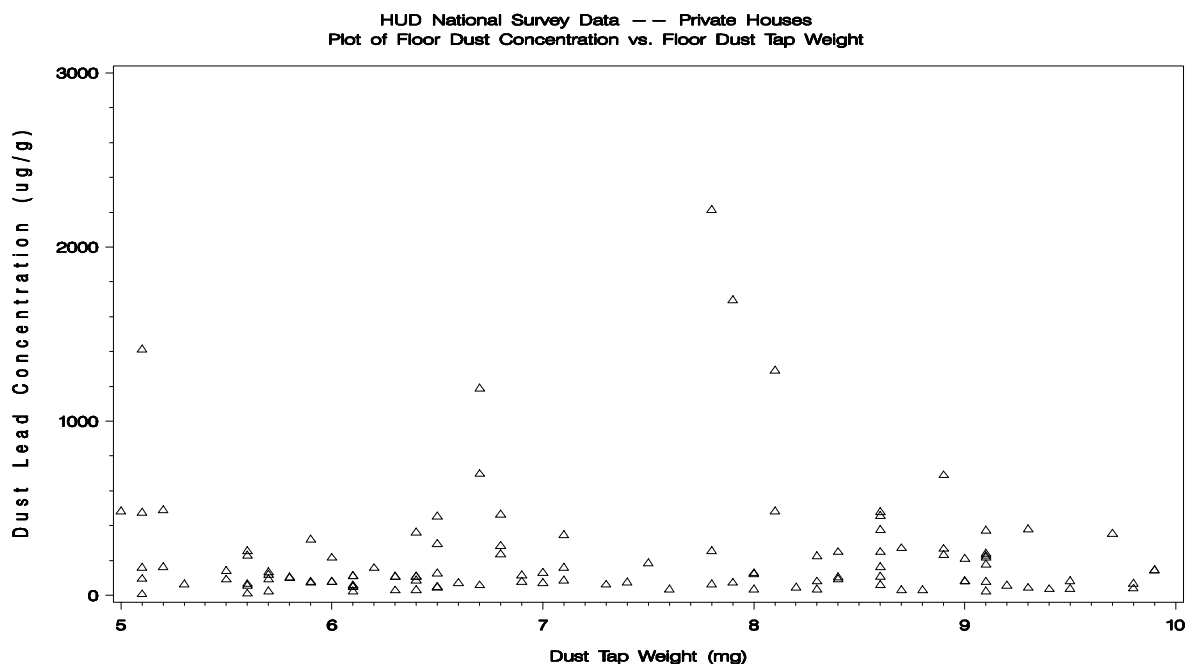
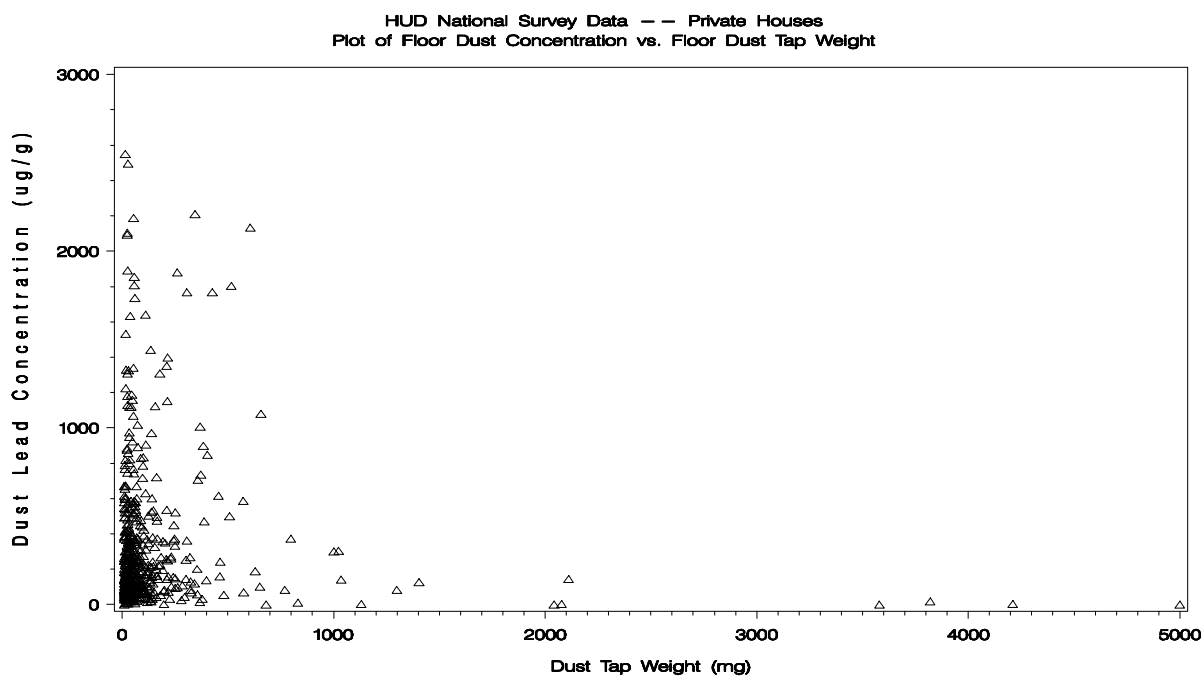


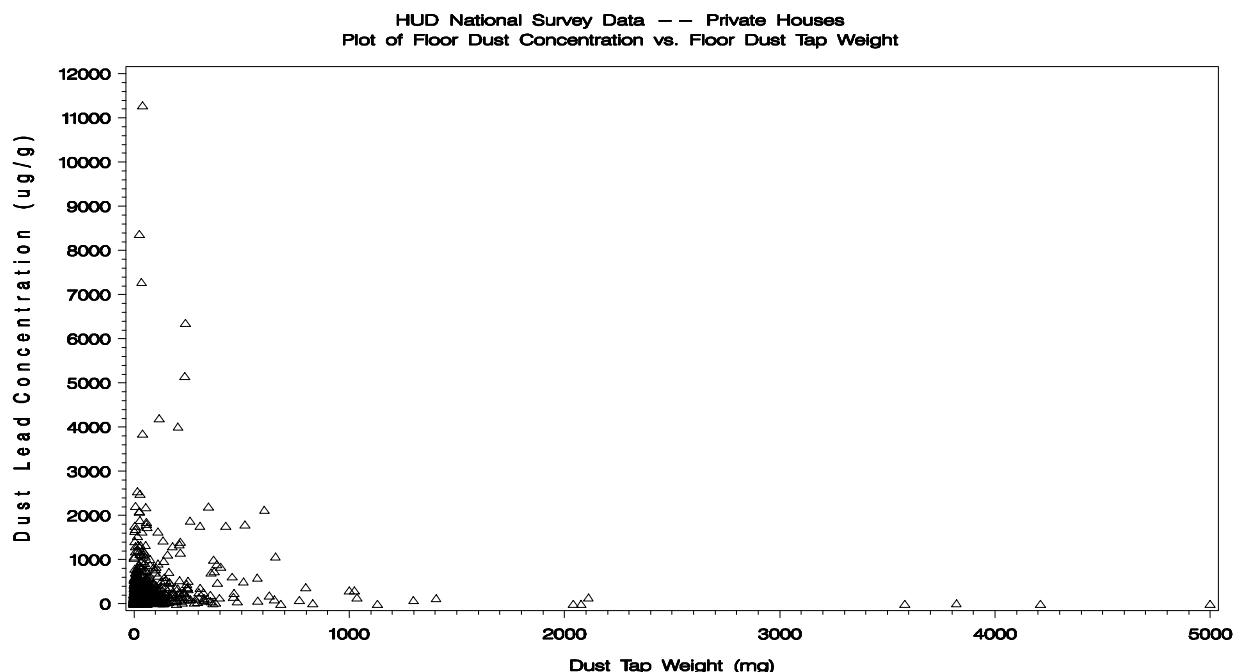
Figure 7. Floor Dust-Lead Concentration Corrected for Bias Plotted Against Tap Weight for Samples with Tap Weights Greater than 0.1 mg and Less than 5 mg. Two Samples with Dust-Lead Concentrations Greater than 29,000  $\mu\text{g/g}$  are not Shown in the Plot.



**Figure 8. Floor Dust-Lead Concentration Corrected for Bias Plotted Against Tap Weight for Samples with Tap Weights Greater than or Equal to 5 mg and less than 10 mg. One Sample with a Dust-Lead Concentration Greater than 29,000  $\mu\text{g/g}$  is not Shown in the Plot.**



**Figure 9. Floor Dust-Lead Concentration Corrected for Bias Plotted Against Tap Weight for Samples with Tap Weights Greater than or Equal to 10 mg. Eight Samples with Dust-Lead Concentrations Between 3,900  $\mu\text{g/g}$  and 12,000  $\mu\text{g/g}$  are not Shown in the Plot.**



**Figure 10. Floor Dust-Lead Concentration Corrected for Bias Plotted Against Tap Weight for All Samples. Three Samples with Dust-Lead Concentrations Greater than 29,000  $\mu\text{g/g}$  are not Shown in Plot.**

There is no reason to suspect the quality of the dust-lead loadings of these two samples. Therefore, they will be utilized in the analyses conducted for Section 403. However, it may be necessary to handle the lead loadings of these two samples differently if a conversion factor is implemented in Section 403 analyses. If the observed lead loadings collected via a Blue Nozzle vacuum are converted to wipe equivalent lead loadings then the conversion will not be required for these two samples. Likewise, if the observed lead loadings are compared to a Blue Nozzle standard equivalent to a wipe standard, then the wipe dust-lead loadings of these two samples should be compared directly against the standard defined for a wipe sample.

#### **4.0 DISCUSSION, SUMMARY, AND CONCLUSIONS**

**Dust Samples with a Tap Weight of 0.1 mg.** Dust samples with a tap weight of 0.1 mg are a concern. Only 5 of the 40 floor dust samples with a tap weight of 0.1 mg had a non-missing dust-lead concentration. Both Westat and MRI were contacted in an attempt to



determine what was the basis of the 0.1 mg number and what is the impact of a tap weight of 0.1 mg on the precision and accuracy of the measured dust-lead concentration. While it is generally believed, both by Westat and MRI, that 0.1 mg represents the limit of detection for the gravimetric analysis, no one at either Westat or MRI was able to confirm this. MRI stated that the balances typically employed in their metals laboratory measure sample weights in gram units to four decimal places. That is, the smallest nonzero weight possible for the balance commonly used is 0.1 mg. MRI stated that detectable dust-lead amounts can be measured for dust samples this small. However, if the dust weight is suspect then the dust-lead concentration is suspect. Due to the large number of missing dust-lead concentrations for samples with a tap weight of 0.1 mg, and the lack of confidence in this tap weight, dust-lead concentrations of the 0.1 mg tap weight samples will be excluded analyses conducted for Section 403. This decision applies only to the dust-lead concentrations of the 0.1 mg tap weight samples and not to the dust-lead loadings of these samples.

**Adjustments to Dust-Lead Concentrations.** Dust-lead concentrations reported in the HUD National Survey may be biased. Because tap weights were not used to compute dust-lead loadings, there is no reason to suspect that the dust-lead loadings are biased. It was shown in Section 2.2 that the HUD National Survey dust-lead concentrations tended to increase with decreased tap weight. This trend may be due to a bias. Laboratory experiments were conducted to generate a database for understanding and addressing the bias in dust-lead concentration computed via tap weight in the HUD National Survey. A regression model, developed for correcting the bias, was fitted to the laboratory data. It was shown in Section 2.4 that dust-lead concentrations corrected for the bias via the regression model no longer exhibited the trend of increased dust-lead concentration with decreased tap weight.

Tap weights generated in the laboratory experiments and used to develop the regression model ranged from 0.7 mg to 27 mg. Tap weights in the HUD National Survey ranged from 0.1 mg to over 5000 mg. The regression model applied to the HUD National Survey was modified to predict a ratio of one for tap weights greater than 23.4 mg. However, use of the model to correct dust-lead concentrations for tap weights less than 0.7 mg may still be of concern.

The correction factor for lower tap weight samples is severe. The dust-lead concentration of a sample with a tap weight of 0.7 mg is reduced by a factor of 18.7; the factor ranges from approximately 5 for samples with a tap weight of 2 mg to approximately 2 for samples with a tap weight of 3 mg. Because the regression model was developed from data with tap weights all  $\geq 0.7$  mg, its application might best be limited to samples with tap weights  $\geq 0.7$  mg.

The correction factor predicted by the regression equation may have over-corrected for lower tap weight samples. As shown in Table 7, the geometric mean of the corrected dust-lead concentrations of floor dust samples with a tap weight  $\geq 0.2$  mg and  $< 1$  mg was 62  $\mu\text{g/g}$ . The geometric means for groups with tap weights  $\geq 2$  mg ranged from 132 to 190  $\mu\text{g/g}$ . There are 37 floor dust samples in the HUD National Survey with a tap weight  $\geq 0.2$  mg and  $< 1$  mg, of which 25 have tap weights  $< 0.7$  mg and 12 have tap weights  $\geq 0.7$  mg. The geometric means of the corrected dust-lead concentrations are 48 and 102  $\mu\text{g/g}$  for the 25 and 12 samples, respectively. Therefore, the tendency for over-correction by the regression model may be strongest for dust samples with a tap weight less than 0.7 mg.

For the purposes of analyses conducted to support Section 403, dust samples with a tap weight less than 0.7 mg will be excluded from the analysis, and the analysis will be conducted on the corrected dust-lead concentrations for all samples with a tap weight  $\geq 0.7$  mg. There is no reason to suspect the quality of the dust-lead loadings for the 25 samples with a tap weight  $\geq 0.2$  mg and  $< 0.7$  mg, and therefore they will be included in Section 403 analyses. Table B-1 in Appendix B lists the corrected dust-lead concentrations alongside those originally reported in the HUD National Survey.

**Outliers.** A statistical analysis was performed to determine if any of the floor dust-lead concentrations for the 284 privately-owned residences in the HUD National Survey were statistical outliers. Three of the 814 floor dust-lead concentrations were determined to be unusually large. All three samples possessed dust-lead concentrations greater than 100,000  $\mu\text{g/g}$ . The corrected dust-lead concentrations of the three samples were all greater than 29,000  $\mu\text{g/g}$ . No basis was uncovered for suspecting the quality of these three samples. Therefore, these samples will be included in the analyses conducted for Section 403.

**Wipe Samples.** Westat provided a table identifying the dwellings and locations of wipe samples. Only two of these samples are being used in analyses conducted for Section 403, because the remaining wipe samples were taken from common areas or publicly-owned houses. The dust-lead concentration is missing for one sample and will be excluded from Section 403 analyses for the other sample. There is no reason to suspect the quality of the lead loadings of the two samples. It will not be necessary to convert the lead loadings of these two samples to wipe equivalent loadings in the analyses conducted for Section 403.

**Summary.** The following decisions were made regarding the quality of dust samples collected in the HUD National Survey for the purposes of the Section 403 Risk Assessment:

1. Dust-lead concentrations of dust samples with a tap weight of 0.1 mg will be excluded from the analysis of dust-lead concentrations. (Five out of 814 floor dust samples, 27 out of 340 window sill samples, and 5 out of 149 window trough samples.)
2. Dust-lead concentrations of dust samples with a tap weight greater than or equal to 0.2 mg and less than 0.7 mg will be excluded from the analysis of dust-lead concentrations. (25 out of 814 floor dust samples, 27 out of 340 window sill samples, and 1 out of 149 window trough samples.)
3. Dust-lead concentrations of dust samples with a tap weight greater than or equal to 0.7 mg will be corrected using the regression model presented in Section 2.3. The corrected dust-lead concentrations are presented in Appendix B.
4. The outliers identified in Section 2.2 (three samples were determined to be unusually large) will be included in the analyses.
5. The dust-lead concentrations of wipe samples collected from the privately-owned residences in the HUD National Survey from floors, window sills, and window troughs will be excluded from Section 403 analyses (1 window trough sample and 1 window sill sample). There is no reason to suspect the quality of the dust-lead loadings of the two samples. Therefore, they will be utilized in analyses conducted for Section 403.

## 5.0 REFERENCES

1. EPA, *Report on the National Survey of Lead-Based Paint in Housing. Appendix I: Design and Methodology*, 1995, U.S. Environmental Protection Agency.

2. EPA, *Report on the National Survey of Lead-Based Paint in Housing. Appendix II: Analysis*, 1995, U.S. Environmental Protection Agency.
3. EPA, *Laboratory Evaluation of Dust and Dust Lead Recoveries for Samplers and Vacuum Cleaners. Volume I: Objectives, Methods, and Results*, 1995, U.S. Environmental Protection Agency: Washington, D.C.
4. EPA, *Laboratory Evaluation of Dust and Dust Lead Recoveries for Samples and Vacuum Cleaners. Volume II: Appendices from the Quality Assurance Project Plan*, 1995, U.S. Environmental Protection Agency: Washington, D.C.

## **APPENDIX A**

### **LABORATORY ASSESSMENT OF THE AMOUNT OF RESIDUAL DUST REMAINING IN BLUE NOZZLE FILTER CASSETTES**

# Contents

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1	Introduction . . . . .	A-3
2	Test Procedures . . . . .	A-4
3	Test Results . . . . .	A- 8
4	Conclusions . . . . .	A-19

# Section 1

## Introduction

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The Department of Housing and Urban Development (HUD) National Survey collected dust samples for Pb analysis using the Blue Nozzle sampler device. This device collects dust in a plastic cassette containing a piece of filter paper to capture the dust. However, in the HUD National Survey, the filter cassette was not pre-weighed before sampling, and only the weight of dust that could be tapped out of the cassette was determined. The weight of dust remaining on the filter was not determined. Nevertheless, the total amount of Pb was determined by analysis of both the “tap” dust and filter cassette, combined. Subsequently, the concentration of Pb in the dust was calculated from the total amount of Pb found, divided by the weight of tap dust. Since that calculation necessarily neglected the weight of any dust retained in the filter cassette, the concentration results were probably biased high, but the extent of the bias is unknown. However, the bias in the Pb concentration measured by the weight of tap dust does not affect the measured dust-lead loadings in the HUD National Survey (i.e.,  $\mu\text{g}/\text{ft}^2$ ).

The purpose of this project was to carry out laboratory experiments using the Blue Nozzle to determine the weight of dust “tapped out” and the weight of dust remaining in the filter cassette, and then to use those data to estimate the bias in the Pb concentrations that may have been present in the HUD National Survey. Subsequent sections of this report describe the procedures used in the experiments and the results of these experiments, along with the conclusions from the project.

## Section 2

### Test Procedures

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Different weights of dust, of various particle sizes, were placed on a 12-inch × 12-inch tile substrate, and the Blue Nozzle sampler was used to vacuum the dust off the substrate. The filter cassette was pre-weighed so that the weight of dust remaining in the filter cassette could be determined, after dust had been tapped out of the cassette. In this way, the weight of dust tapped out of the cassette was determined, as well as the weight of dust remaining in the filter cassette. These data were used to calculate the percentage of dust remaining in the filter cassette, as shown by the equation below.

$$\% \text{ Remaining in filter cassette} = \frac{\text{Wt of dust in filter cassette}}{(\text{Wt of dust in filter cassette}) + (\text{Wt of dust tapped out})}$$

The matrix of experiments covered three different particle sizes, and the amounts of dust tapped out covered three weight ranges. Each combination of particle size/amount was repeated at least five times (i.e., replicates) because of variability in the results for each combination, due to the low weight of dust tapped out, as discussed below. Also, the weight of dust tapped out varied because both the weight of dust applied to the tile substrate and the amount vacuumed off the substrate varied.

The specific particle sizes and the target amounts of dust tapped out were as follows:

Particle sizes of dust
< 53 µm
150-212 µm
250-2000 µm
Target amount of dust tapped out
0.2-5.0 mg
5.0-10.0 mg
10.0-20.0 mg



The three particle sizes shown above represent the range of sizes used by MRI in a previous study of house dust, where dust in vacuum cleaner bags was sieved to obtain different size ranges.<sup>1</sup> These sieved dust samples were still available and were used in this study. Some preliminary experiments were carried out to determine how much dust must be applied in order to obtain the target “tapped” amounts shown.

The substrate to which the dust was applied, for vacuuming with the Blue Nozzle, was 12-inch × 12-inch smooth tile, like that used in the previous MRI study. After each use, these tiles were wiped off with Kimwipes using distilled water and allowed to dry overnight.

In the initial experiments, it was found that the weight of the filter cassette decreased by about 10 mg after vacuuming a clean tile (no dust),<sup>2</sup> but after a second vacuuming of the clean tile, the weight decreased by less than 0.2 mg. Thus the procedure was to first use each cassette to vacuum a clean tile and then weigh the cassette to determine the tare weight.

It should also be noted that after any vacuuming, the weight of the cassette decreases as it sits on the balance, but the rate of decrease slows over time. The weight recorded on the data sheets (i.e., final weight) was taken when the weight did not change more than 0.1 mg over 1 min.

After the initial experiments, the procedure used in all tests was as given below, using the data entry form shown in Table A2-1.

1. Tare weigh an appropriate piece of weighing paper.
2. Add desired weight of dust onto weighing paper.
3. Transfer dust from weighing paper onto tile substrate.
4. Reweigh the paper to determine weight of dust actually transferred to tile.
5. Obtain cassette and use it to vacuum a clean tile.
6. Weigh the cassette (not including the top plastic part of the cassette), using this weight as the tare weight of the cassette.

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<sup>1</sup> "Laboratory Evaluation of Dust and Dust Lead Recoveries for Samplers and Vacuum Cleaners," Volumes I and II. EPA 747-R-94-004A/B. U.S. Environmental Protection Agency: Washington, DC. March 1995.

<sup>2</sup> Possibly the result of partial dehydration of the filter on vacuuming, although this was not confirmed.

7. Place the cassette back in the Blue Nozzle sampler and vacuum dust off the tile that was prepared in Step 3.
8. Tare weigh an appropriate size piece of weighing paper.
9. Tap dust out of the cassette onto tared weighing paper and determine weight of dust “tapped out.”
10. Reweigh the cassette after tapping out dust.

Vacuuming with the Blue Nozzle in each experiment was done in accordance with the protocol specified in Appendix H of the previous report titled “Laboratory Evaluation of Dust and Dust Lead Recoveries for Samplers and Vacuum Cleaners,” except as given above.

**Table  
A2-1.  
Data  
Entry  
Sheet**

Test No. \_\_\_\_\_

Date \_\_\_\_\_

Time \_\_\_\_\_

Operator \_\_\_\_\_

Particle Sizes: < 53µm, 150-212µm, 250-2000µm

Target Weight Tapped Out: 0.2-5 mg, 5-10 mg, 10-20 mg

Replicate No.: 1, 2, 3, 4, or 5

**A. Dust Applied**

Wt of paper plus  
dust

\_\_\_\_\_ g

Wt of paper after  
apply dust

\_\_\_\_\_ g

=

Wt of dust  
applied

\_\_\_\_\_ g

**B. Dust Tapped Out ( $W_T$ )**

Wt of paper plus  
dust

\_\_\_\_\_ g

Tare wt of paper

\_\_\_\_\_ g

=

Wt of dust  
tapped out

\_\_\_\_\_ g

( $W_T$ )

**C. Dust Remaining in Filter Cassette ( $W_F$ )**

Wt of cassette  
with dust (after  
tapping dust out  
of cassette)

\_\_\_\_\_ g

Tare wt of filter  
cassette

\_\_\_\_\_ g

=

Wt of dust  
remaining in filter  
cassette

\_\_\_\_\_ g

( $W_F$ )

**D. Calculation of Percent Remaining in Filter Cassette**

$$\% \text{ Remaining} = \frac{W_F}{W_F + W_T} \times 100 = \frac{(\text{ } \text{g})}{(\text{ } \text{g}) + (\text{ } \text{g})} \times 100 = \text{ } \%$$

Reviewed by \_\_\_\_\_

Date \_\_\_\_\_

## Section 3

### Test Results

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All of the test results are tabulated in Tables A3-1, A3-2, and A3-3. Each table contains the results for one of the three target amounts for the weight of dust tapped out. Each of the tables shows the results for the three particle sizes of dust used in the tests. These tables express the results in terms of the percent of dust remaining on the filter, and the ratio of the total weight (weight of dust tapped out plus weight of dust remaining in the cassette) to the weight of dust tapped out. This ratio is, in effect, a correction factor that might be applied to a lead concentration that had been calculated using only the weight of Pb tapped out. That is, the lead concentration should be divided by the ratio value to obtain a corrected Pb concentration.

It had been anticipated that this ratio might be relatively large when the weight of dust tapped out was small (i.e., 0.2 to 5.0 mg), but that the ratio would decrease toward a ratio of 1.0 as the weight of dust tapped out increased. That is, for larger amounts of dust tapped out, the percent remaining in the filter cassette would be small. To investigate this expectation, the data in Tables A3-1, A3-2, and A3-3 were plotted as shown in Figures A3-1, A3-2, and A3-3 and were combined in Figure A3-4. A dashed reference line, at a ratio of 1.0, has been included in Figure A3-4.

Examination of the results given in the figures shows ratios in the range of 1.1 to 2.7 for the two larger amounts of dust tapped out (i.e., 5 to 10 mg and 10 to 27 mg). On the average, the ratio appears to increase slightly as the amount tapped out decreases toward a value of about 3 mg. In addition, over this range the ratio does not appear to be significantly different for the three different particle size ranges.

For an amount tapped out below about 3 mg, the ratio dramatically increases as the amount tapped out decreases. This certainly provides evidence of a bias in the Pb concentrations used in the HUD National Survey, where the Pb concentration was calculated using only the weight of dust tapped out, especially for those instances where the weight of dust tapped out was low (e.g., 0.2 mg).

**Table A3-1. Summary of Test Results for Weight of Dust Tapped Out (in the range of 0.2 to 5.0 mg)**

Test No.	Wt of dust tapped out (mg)	Wt of dust remaining in filter cassette (mg)	Total wt (mg)	Percent of dust in filter cassette (%)	Ratio of total wt to wt tapped out
<b>Particle Size &lt; 53 µm</b>					
8	1.4	10.8	12.2	88.5	8.7
10	0.7	11.6	12.3	94.3	17.6
11	2.4	2.7	5.1	52.9	2.1
12	1.4	10.0	11.4	87.7	8.1
13	3.5	5.9	9.4	63	2.7
16	1.3	15.8	17.1	92.4	13
20	1.3	19.4	20.7	93.7	16
24	3.9	19.7	23.6	83.5	6.1
<b>Particle Size 150 to 212 µm</b>					
29	4.5	2.5	7.0	36	1.6
30	3.2	4.9	8.1	61	2.5
31	1.9	11.4	13.3	85.7	7.0
38	0.8	12.2	13.0	93.8	16
46	3.2	2.0	5.2	39	1.6
<b>Particle Size 250 to 2000 µm</b>					
47	3.6	2.0	5.6	36	1.6
51	3.3	8.0	11.3	71	3.4
59	4.2	2.4	6.6	36	1.6
60	3.4	4.9	8.3	59	2.4
63	2.0	0.9	2.9	31	1.5

**Table A3-2. Summary of Test Results for Weight of Dust Tapped Out (in the range of 5.0 to 10.0 mg)**

Test No.	Wt of dust tapped out (mg)	Wt of dust remaining in filter cassette (mg)	Total wt (mg)	Percent of dust in filter cassette (%)	Ratio of total wt to wt tapped out
<b>Particle Size &lt; 53 µm</b>					
7	7.8	5.4	13.2	41	1.7
9	5.2	3.4	8.6	40	1.7
15	5.7	9.9	15.6	64	2.7
19	8.9	13.1	22.0	59.5	2.5
22	7.4	7.3	14.7	50	2.0
27	9.9	3.6	13.5	27	1.4
<b>Particle Size 150 to 212 µm</b>					
34	6.5	2.1	8.6	24	1.3
35	8.8	2.7	11.5	24	1.3
36	9.5	4.0	13.5	30	1.4
39	6.1	6.8	12.9	53	2.1
42	8.7	2.3	11.0	21	1.3
43	8.8	9.7	18.5	52	2.1
<b>Particle Size 250 to 2000 µm</b>					
48	8.0	4.2	12.2	34	1.5
49	7.8	2.5	10.3	24	1.3
62	6.6	1.6	8.2	20	1.2
64	6.3	8.6	14.9	58	2.4
65	5.1	3.0	8.1	37	1.6

**Table A3-3. Summary of Test Results for Weight of Dust Tapped Out (in the range of 10.0 to 30.0 mg)**

Test No.	Wt of dust tapped out (mg)	Wt of dust remaining in filter cassette (mg)	Total wt (mg)	Percent of dust in filter cassette (%)	Ratio of total wt to wt tapped out
<b>Particle Size &lt; 53 µm</b>					
14	13.3	2.7	16.0	17	1.2
17	11.5	2.8	14.3	20	1.2
18	24.2	8.1	32.3	25	1.3
21	12.0	6.6	18.6	36	1.6
23	24.3	8.7	33.0	26	1.4
25	10.1	14.0	24.1	58.1	2.4
26	24.7	8.6	33.3	26	1.3
28	14.1	6.8	20.9	33	1.5
<b>Particle Size 150 to 212 µm</b>					
32	13.3	3.1	16.4	19	1.2
33	13.1	4.8	17.9	27	1.4
37	22.2	3.8	26.0	15	1.2
40	13.9	2.8	16.7	17	1.2
41	21.8	3.9	25.7	15	1.2
44	17.2	4.8	22.0	22	1.3
45	16.2	8.7	24.9	35	1.5
<b>Particle Size 250 to 2000 µm</b>					
50	16.7	15.2	31.9	47.6	1.9
52	24.3	9.5	33.8	28	1.4
53	13.1	11.1	24.2	45.9	1.8
54	27.2	9.5	36.7	26	1.3
55	27.2	11.8	39.0	30.3	1.4
56	15.4	3.2	18.6	17	1.2
57	18.9	8.5	27.4	31	1.4
58	16.4	10.2	26.6	38.3	1.6
61	11.5	0.7	12.2	5.7	1.1



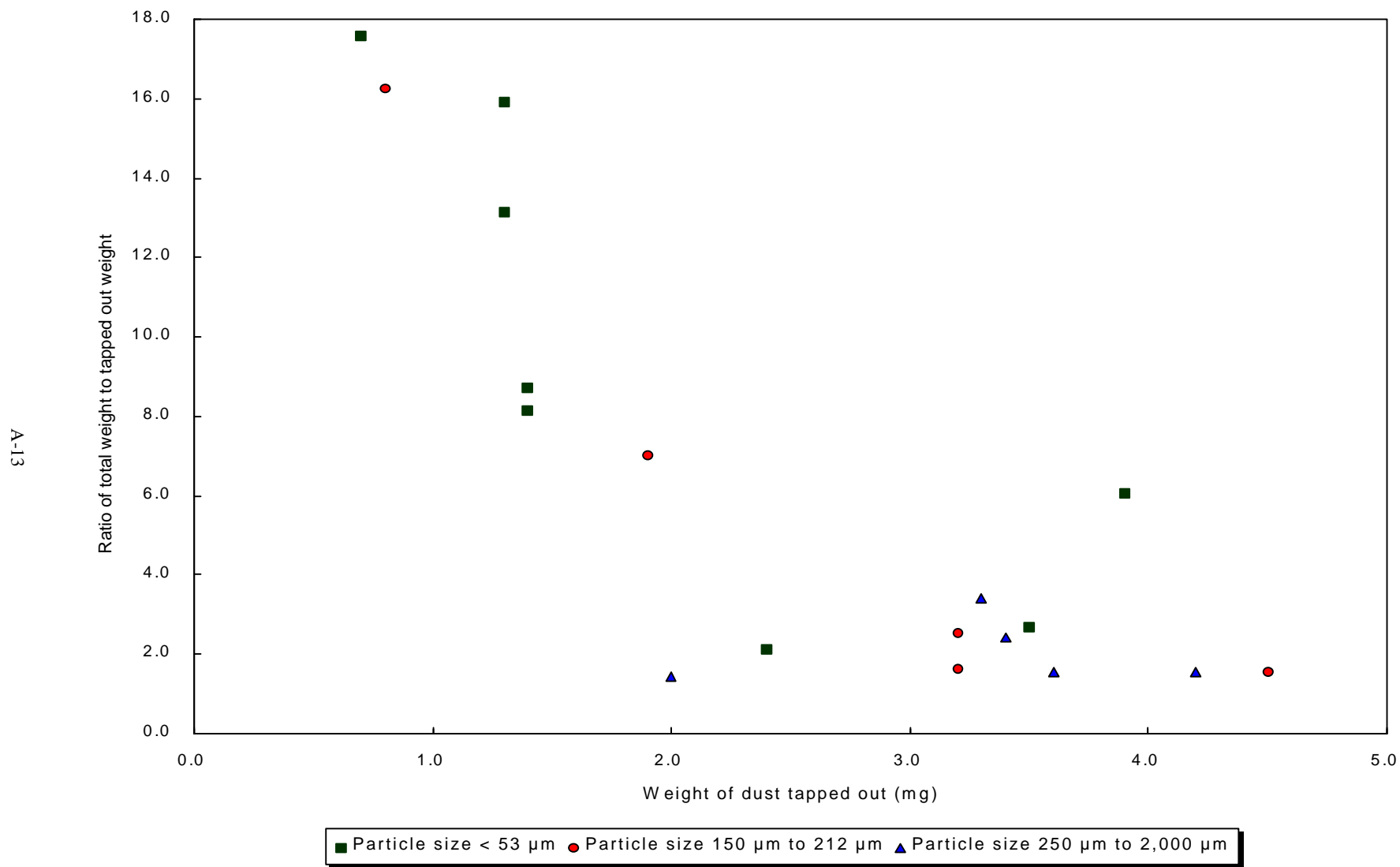


Figure A3-1. Ratio of Total Wt of Dust to Wt of Dust Tapped Out as a Function of the Wt of Dust Tapped Out over the Range of 0.2 to 5.0 mg.

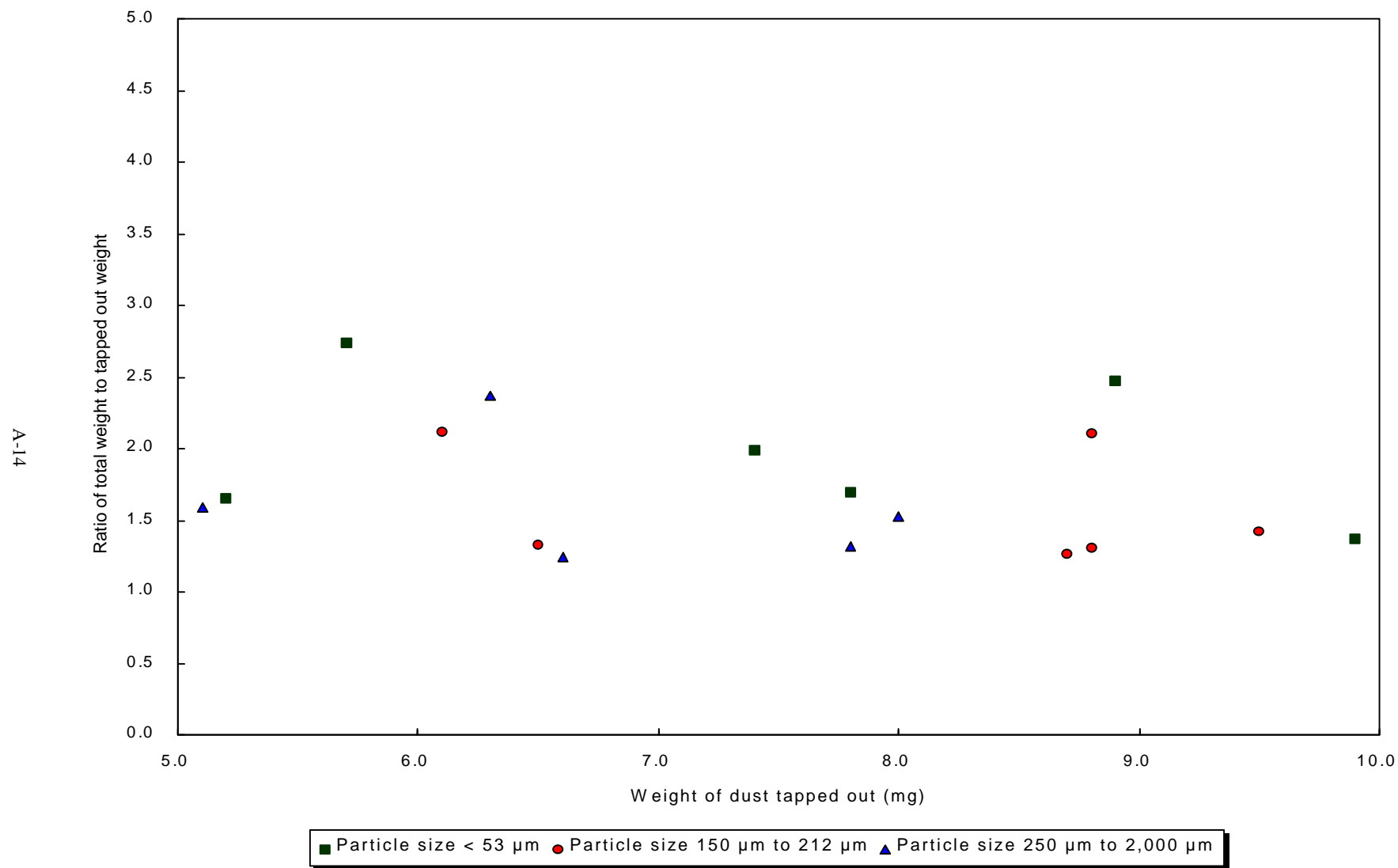


Figure A3-2. Ratio of Total Wt of Dust to Wt of Dust Tapped Out as a Function of the Wt of Dust Tapped Out over the Range of 5.0 to 10.0 mg.

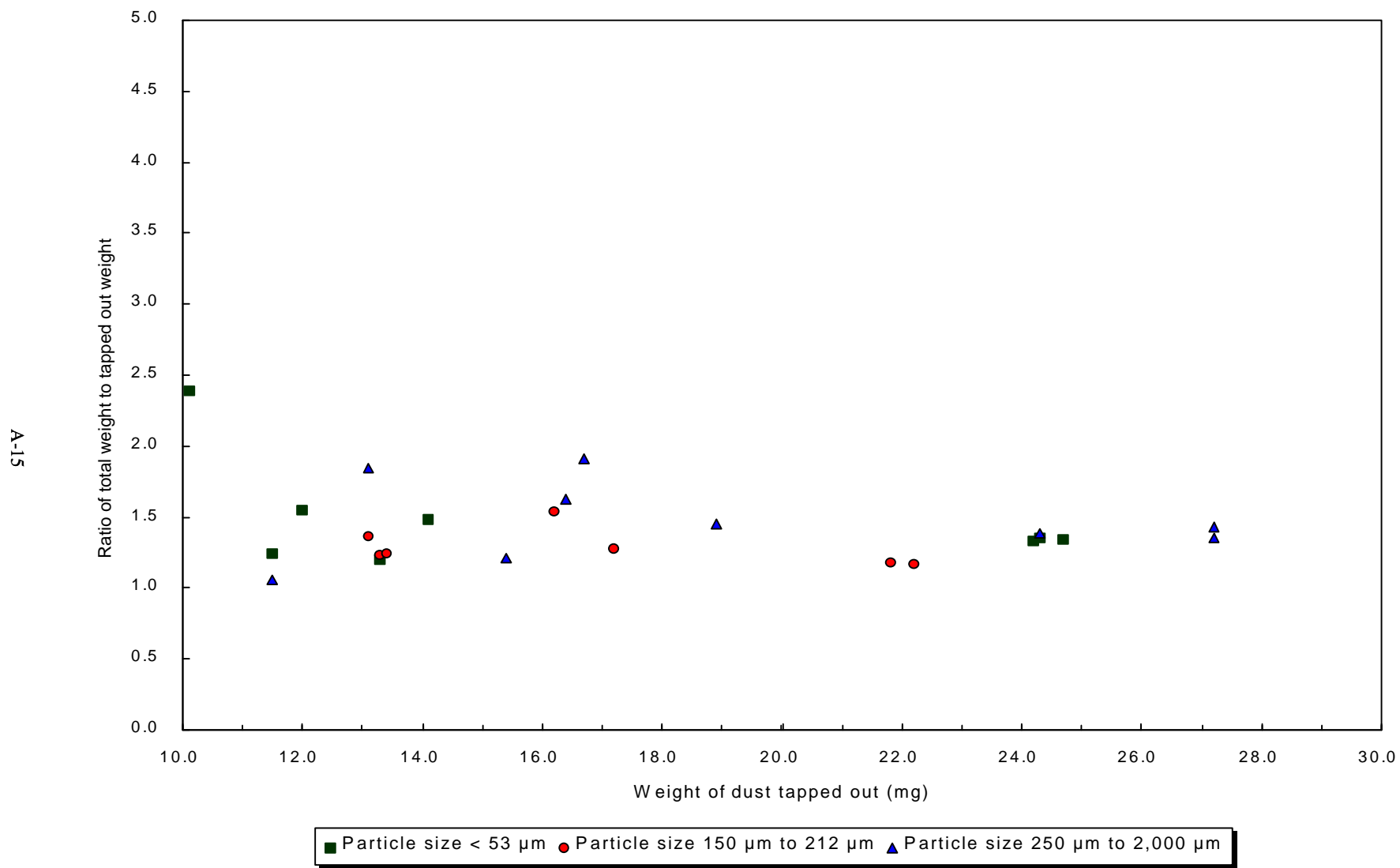


Figure A3-3. Ratio of Total Wt of Dust to Wt of Dust Tapped Out as a Function of the Wt of Dust Tapped Out over the Range of 10.0 to 30.0 mg.

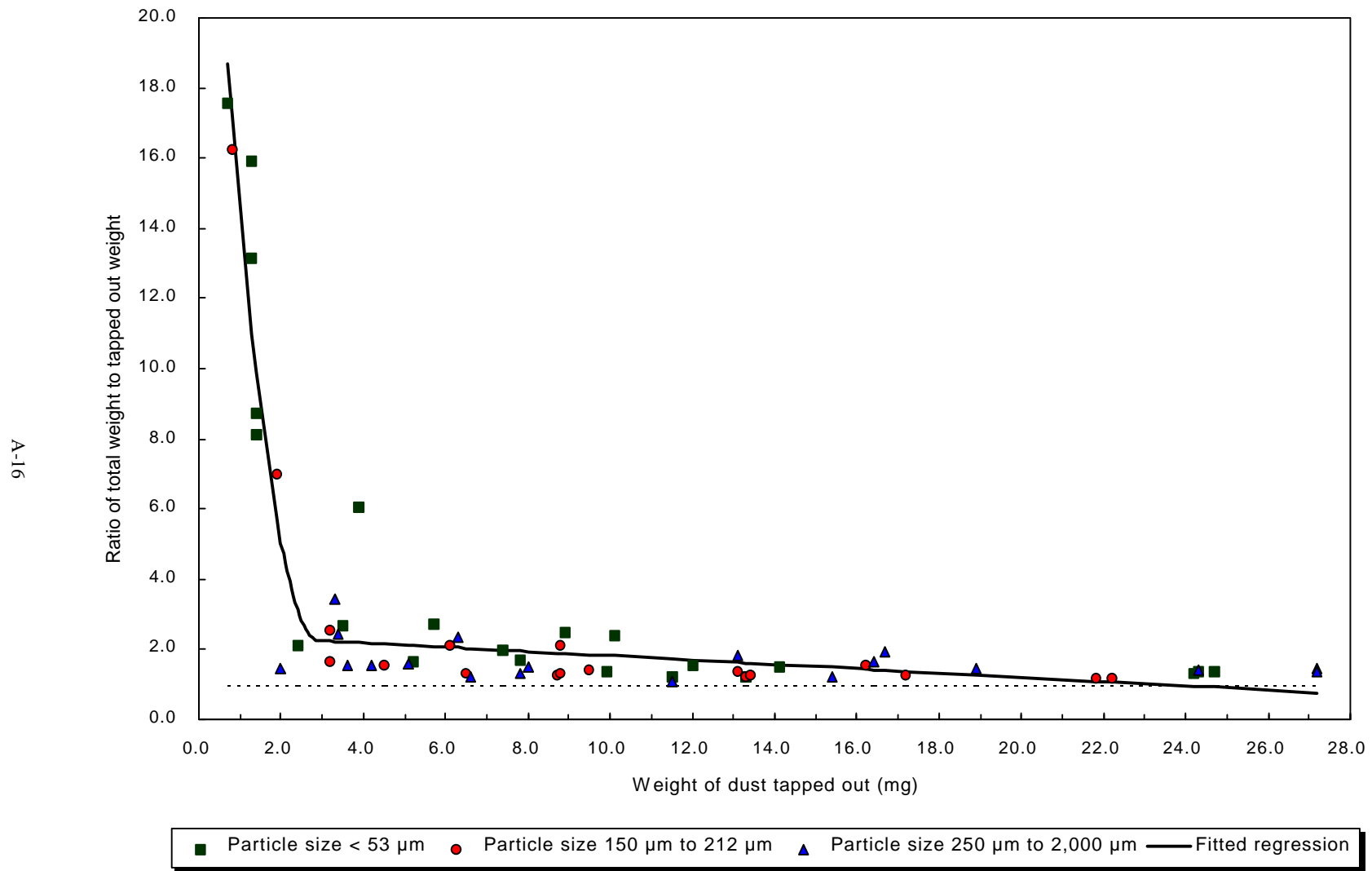


Figure A3-4. Ratio of Total Wt of Dust Tapped Out as a Function of the Wt of Dust Tapped Out over the Entire Range of 0.2 to 30.0 mg.

If an attempt were to be made to correct the Pb concentrations from the HUD National Survey, the results shown in the figures could be used for that purpose. That is, the reported Pb concentration could be divided by the value of the ratio that corresponds to the specific weight of dust tapped out. This calculation is illustrated by the equation below:

$$\text{Corrected Pb Conc} = \frac{\text{Original Pb Concentration}}{\text{Value of Ratio}}$$

where: Value of Ratio is determined based on the weight of dust tapped out, which was used in the original calculation of the Pb concentration, as discussed below.

To provide a method for determination of the ratio value that could be used to correct Pb concentrations calculated in the HUD National Survey, a regression analysis was performed on the data from these experiments (i.e., Tables A3-1, A3-2, and A3-3). A segmented linear model was fit to all 59 data points using PROC NLIN of SAS, a statistical software package. The parameters of a second-order model followed by a first-order model were estimated as well as the value of weight of dust tapped out at which the regression line changes shape. Table A3-4 summarizes the regression results. The following two equations provide the best fit to the data:

For Weight of Dust Tapped Out (Wt in mg)) below 2.90 mg:

$$\text{Ratio} = 30.71 - 19.54 (\text{Wt}) + 3.36 (\text{Wt})^2$$

For Weight of Dust Tapped Out (Wt in mg) above 2.90 mg:

$$\text{Ratio} = 2.43 - 0.061 (\text{Wt})$$

**Table A3-4. Regression Model Results**

Tap dust range	Model parameters <sup>a</sup>			Model summary <sup>b</sup>
	Intercept (se) 95% CI	Linear term (se) 95% CI	Quadratic term (se) 95% CI	
0 to 2.90 mg	30.71 (2.27) [26.16, 35.26]	19.54 (2.62) [ 24.79, 14.30]	3.36 (0.65) [2.06, 4.65]	R <sup>2</sup> = 86% MSE = 1.4
2.90 to 24.5 mg	2.43 (NC) <sup>c</sup> [1.93, 2.56] <sup>d</sup>	0.061 (0.023) [ 0.108, 0.014]	NA	

<sup>a</sup> se = standard error of parameter estimate

95% CI = 95% confidence interval of parameter estimate

<sup>b</sup> R<sup>2</sup>-value = percent variance in data explained by model (adjusted for number of parameters)

MSE = Mean Square Error of estimated ratio

<sup>c</sup> NC: not calculated

<sup>d</sup> 95% CI for ratio of 2.25 calculated at Weight<sub>tapped</sub> of 2.90

For any given weight of dust tapped out in the HUD National Survey data, the appropriate equation above could be used to calculate the ratio value that should be used to correct the Pb concentration that was calculated in the HUD National Survey using that weight of dust tapped out. Use of the equations for that purpose does, of course, involve some uncertainty. This is because the equations are based on the data from these laboratory experiments, which utilized sieved dust that may not duplicate the characteristics of the actual dust sampled in the HUD National Survey. Although differences in dust characteristics could affect the ratio values, given the limited sample set it is not possible to predict the nature and magnitude of the effect of such differences on the equations developed from the laboratory experiments.

Based on the above equations, the corrected Pb concentrations may decrease by a factor ranging from 2.3 to 1.0 for the larger weights of dust tapped out (above 2.90 mg). But for weights of dust tapped out below 2.90 mg, the corrected Pb concentrations would decrease by a factor that might range from 2.3 (for 2.90 mg tapped out) up to 21.8 (for 0.5 mg tapped out).

It should be noted that in these experiments, the lowest amount of dust tapped out was 0.7 mg, and it is very difficult to obtain such low amounts of dust tapped out. In this report, the above equation yielded a ratio of 18.7 for 0.7 mg tapped out and a maximum ratio of 30.7 for 0.0 mg tapped out. Obviously, it would be possible theoretically for no

dust to be tapped out (0.0 mg) when there was some weight of dust in the cassettes, so the ratio could be infinitely high. Thus, the use of the second equation above is only a best fit of the data down to a weight tapped out of 0.7 mg. Use of the equation for lesser amounts (e.g., < 0.7 mg tapped out) is uncertain, but it should provide conservatively low ratios for the lesser amounts.





## Section 4

### Conclusions

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From the results discussed in the previous section, it can be concluded that the total weight of dust collected in Blue Nozzle cassettes is higher than the weight of dust that can be tapped out the cassette, especially for smaller weights of dust tapped out. It can, therefore, also be concluded that Pb concentrations in dust, determined using only the weight of dust tapped out, are biased high and that the extent of the bias is likely quite high for very small weights of dust tapped out.

## **APPENDIX B**

### **DATA TABLES FOR DUST-LEAD CONCENTRATIONS FOR FLOOR, WINDOW SILL, AND WINDOW TROUGH SAMPLES IN THE 284 PRIVATELY-OWNED HOUSES IN THE HUD NATIONAL SURVEY**

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0120105	Entryway	30.4	Carpeted	251.05	251.05
	Dry Floor	26.7	Carpeted	153.26	153.26
	Wet Floor	252.2	Carpeted	95.77	95.77
	Dry Sill	36.2	Uncarpeted	192.39	192.39
	Wet Sill	14.9		826.13	543.11
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0130708	Entryway	17.4	Uncarpeted	166.77	121.85
	Dry Floor	73.0	Carpeted	84.74	84.74
	Wet Floor	9.3	Uncarpeted	91.00	48.85
	Dry Sill	70.1	Uncarpeted	203.31	203.31
	Wet Sill	0.4		908.15	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0130906	Entryway	51.5	Carpeted	128.87	128.87
	Dry Floor	181.5	Carpeted	53.04	53.04
	Wet Floor	41.9	Uncarpeted	59.09	59.09
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	16.1		138.13	95.40
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0131003	Entryway	64.1	Carpeted	142.65	142.65
	Dry Floor	130.7	Carpeted	98.04	98.04
	Wet Floor	21.0	Uncarpeted	104.70	91.12
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	10.2		289.38	160.07
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0131102	Entryway	40.2	Carpeted	300.83	300.83
	Dry Floor	20.5	Carpeted	175.51	148.80
	Wet Floor	1.2	Uncarpeted	354774.13	29320.33
	Dry Sill	9.2		1042.42	557.79
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0131201	Entryway	96.2	Carpeted	210.23	210.23
	Dry Floor	94.8	Carpeted	77.69	77.69
	Wet Floor	3.2	Uncarpeted	262.35	117.39
	Dry Sill	7.4	Uncarpeted	2990.49	1511.41
	Wet Sill	31.0		341.62	341.62
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

0150102	Entryway	66.8	Carpeted	69.36	69.36
	Dry Floor	38.5	Carpeted	97.95	97.95
	Wet Floor	68.5	Uncarpeted	354.32	354.32
	Dry Sill	13.6		133.65	83.51
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0150201	Entryway	769.4	Carpeted	82.43	82.43
	Dry Floor	139.2	Carpeted	39.80	39.80
	Wet Floor	135.0	Uncarpeted	21.31	21.31
	Dry Sill	258.1		16.62	16.62
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0211102	Entryway	44.9	Uncarpeted	1119.92	1119.92
	Dry Floor	14.8	Carpeted	55.93	36.62
	Wet Floor	8.7	Uncarpeted	524.47	276.14
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	5.9	Uncarpeted	11048.08	5336.98
	Wet Trough	0.1	Uncarpeted	.	.
0221101	Entryway	9.1	Uncarpeted	341.10	181.93
	Dry Floor	1.0	Uncarpeted	210.04	14.45
	Wet Floor	2.5	Uncarpeted	219.35	76.69
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.1		2855.66	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0221507	Entryway	34.1	Carpeted	1118.72	1118.72
	Dry Floor	34.2	Carpeted	973.46	973.46
	Wet Floor	12.3	Uncarpeted	971.47	578.35
	Dry Sill	9.0	Uncarpeted	611.46	325.07
	Wet Sill	64.3		1937.84	1937.84
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0250902	Entryway	5.5	Uncarpeted	201.06	96.00
	Dry Floor	41.2	Carpeted	219.30	219.30
	Wet Floor	2.6	Uncarpeted	585.62	223.57
	Dry Sill	4.2	Uncarpeted	1065.19	490.01
	Wet Sill	0.1		2237.48	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0251900	Entryway	8.6	Carpeted	924.06	484.97

	Dry Floor	19.4	Carpeted	305.06	244.71
	Wet Floor	6.7	Uncarpeted	127.31	62.99
	Dry Sill	60.5	Uncarpeted	200.28	200.28
	Wet Sill	7.0		254.19	126.90
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0252404	Entryway	71.5	Carpeted	372.70	372.70
	Dry Floor	88.9	Carpeted	112.49	112.49
	Wet Floor	4.2	Uncarpeted	160.99	74.06
	Dry Sill	202.2	Uncarpeted	494.75	494.75
	Wet Sill	10.5		367.40	205.31
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0310102	Entryway	55.3	Carpeted	510.78	510.78
	Dry Floor	26.0	Carpeted	138.49	138.49
	Wet Floor	43.3	Carpeted	119.24	119.24
	Dry Sill	5.4	Uncarpeted	193.52	92.13
	Wet Sill	6.1		218.81	106.32
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0310201	Entryway	74.6	Carpeted	166.43	166.43
	Dry Floor	3.6	Carpeted	3.45	1.56
	Wet Floor	33.7	Carpeted	30.70	30.70
	Dry Sill	29.1	Uncarpeted	248.89	248.89
	Wet Sill	2.5		1655.46	578.78
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0310607	Entryway	44.1		92.44	92.44
	Dry Floor	28.5		26.50	26.50
	Wet Floor	8.3		77.29	40.18
	Dry Sill	91.1		1067.60	1067.60
	Wet Sill	72.5		543.73	543.73
	Dry Trough	339.2		2287.72	2287.72
	Wet Trough	0.1		.	.
0310706	Entryway	7.1	Carpeted	702.40	351.74
	Dry Floor	4.9	Carpeted	43.08	20.21
	Wet Floor	1.5	Uncarpeted	393.17	43.88
	Dry Sill	9.2	Uncarpeted	2001.84	1071.18
	Wet Sill	5.8	Uncarpeted	2693.69	1297.41
	Dry Trough	193.7	Uncarpeted	2174.02	2174.02
	Wet Trough	170.8	Uncarpeted	6421.20	6421.20
0311100	Entryway	261.2	Uncarpeted	1880.72	1880.72
	Dry Floor	47.4	Carpeted	135.39	135.39

	Wet Floor	2.4	Uncarpeted	1136.15	358.67
	Dry Sill	2.6		1048.76	400.39
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0311209	Entryway	25.8	Carpeted	482.69	482.69
	Dry Floor	22.0	Carpeted	236.25	217.14
	Wet Floor	11.3	Uncarpeted	351.22	201.77
	Dry Sill	101.9		2465.96	2465.96
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0320101	Entryway	12.4	Carpeted	917.84	548.42
	Dry Floor	28.1	Carpeted	294.57	294.57
	Wet Floor	8.0	Uncarpeted	258.67	133.20
	Dry Sill	2.5	Uncarpeted	827.73	289.39
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0320408	Entryway	29.9	Carpeted	456.61	456.61
	Dry Floor	8.6	Carpeted	214.32	112.48
	Wet Floor	23.3	Carpeted	223.06	221.14
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	97.0		13762.54	13762.54
0320507	Entryway	11.9	Uncarpeted	1046.50	614.11
	Dry Floor	64.0	Carpeted	62.01	62.01
	Wet Floor	57.9	Uncarpeted	585.23	585.23
	Dry Sill	9.4	Uncarpeted	1324.82	713.59
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	72.2		780.42	780.42
0320705	Entryway	23.9	Uncarpeted	521.06	521.06
	Dry Floor	6.1		239.02	116.15
	Wet Floor	4.1	Uncarpeted	355.62	163.14
	Dry Sill	0.1	Uncarpeted	3928.96	.
	Wet Sill	0.1		1905.00	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0321307	Entryway	61.1	Carpeted	179.50	179.50
	Dry Floor	5.1	Carpeted	24.55	11.59
	Wet Floor	3.9	Uncarpeted	151.22	68.98

	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	206.9	Uncarpeted	250.04	250.04
	Wet Trough	0.1	Uncarpeted	.	.
0330308	Entryway	52.4	Carpeted	98.73	98.73
	Dry Floor	21.2	Carpeted	12.10	10.65
	Wet Floor	28.8	Uncarpeted	7.33	7.33
	Dry Sill	14.4		71.85	46.31
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0331009	Entryway	1.9	Carpeted	544.56	95.31
	Dry Floor	5.9	Carpeted	175.37	84.71
	Wet Floor	280.5	Carpeted	25.82	25.82
	Dry Sill	20.5		201.89	171.17
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0340406	Entryway	27.6	Carpeted	149.95	149.95
	Dry Floor	57.8	Uncarpeted	17.90	17.90
	Wet Floor	0.6	Uncarpeted	2069.32	.
	Dry Sill	10.2	Uncarpeted	101.44	56.11
	Wet Sill	4.9		42.86	20.11
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0340505	Entryway	2041.7	Uncarpeted	1.01	1.01
	Dry Floor	18.6	Carpeted	55.63	42.94
	Wet Floor	25.4	Carpeted	1181.31	1181.31
	Dry Sill	6.4	Uncarpeted	97.00	47.56
	Wet Sill	1.0		115.88	7.98
	Dry Trough	0.9	Uncarpeted	304.65	19.23
	Wet Trough	0.1	Uncarpeted	.	.
0340802	Entryway	89.3	Uncarpeted	829.00	829.00
	Dry Floor	20.2	Carpeted	72.18	60.26
	Wet Floor	6.3	Uncarpeted	69.32	33.89
	Dry Sill	4.7	Uncarpeted	553.50	258.25
	Wet Sill	1.4		1041.46	104.78
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0341107	Entryway	124.2	Carpeted	31.49	31.49
	Dry Floor	39.4	Uncarpeted	18.38	18.38
	Wet Floor	58.2	Uncarpeted	90.67	90.67
	Dry Sill	10.3	Uncarpeted	80.36	44.60

	Wet Sill	3.4		2312.77	1040.57
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0341404	Entryway	224.9	Carpeted	32.20	32.20
	Dry Floor	2.5	Carpeted	248.32	86.82
	Wet Floor	6.0	Carpeted	172.44	83.55
	Dry Sill	97.6		137.81	137.81
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	249.2		203.44	203.44
0350306	Entryway	1.3	Carpeted	1121.57	102.09
	Dry Floor	21.0	Carpeted	69.43	60.43
	Wet Floor	9.1	Carpeted	436.13	232.61
	Dry Sill	12.6	Uncarpeted	412.49	248.28
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0350801	Entryway	28.7	Uncarpeted	2497.34	2497.34
	Dry Floor	6.8	Carpeted	943.77	468.33
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	5.7	Uncarpeted	2184.80	1049.22
	Wet Sill	2.0		247.14	48.75
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0351205	Entryway	98.9	Carpeted	784.26	784.26
	Dry Floor	33.4	Carpeted	801.40	801.40
	Wet Floor	36.4	Uncarpeted	407.98	407.98
	Dry Sill	29.5	Uncarpeted	26521.10	26521.10
	Wet Sill	94.2		271.54	271.54
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0410100	Entryway	139.2	Uncarpeted	156.09	156.09
	Dry Floor	2077.6	Uncarpeted	4.48	4.48
	Wet Floor	118.9	Uncarpeted	104.42	104.42
	Dry Sill	57.8	Uncarpeted	45646.82	45646.82
	Wet Sill	2.6		5173.31	1975.02
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0410605	Entryway	218.9	Uncarpeted	70.90	70.90
	Dry Floor	162.2	Uncarpeted	44.65	44.65
	Wet Floor	18.4	Uncarpeted	112.46	86.01
	Dry Sill	229.7	Uncarpeted	400.89	400.89
	Wet Sill	120.8		745.16	745.16



	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0411207	Entryway	606.2	Uncarpeted	2133.50	2133.50
	Dry Floor	163.4	Uncarpeted	721.86	721.86
	Wet Floor	12.7	Uncarpeted	814.69	492.16
	Dry Sill	0.7		7390.44	395.67
	Wet Sill	0.1		.	.
	Dry Trough	111.2	Uncarpeted	2605.26	2605.26
	Wet Trough	0.1	Uncarpeted	.	.
0411306	Entryway	426.2	Uncarpeted	1767.13	1767.13
	Dry Floor	403.5	Uncarpeted	846.25	846.25
	Wet Floor	86.3	Uncarpeted	447.53	447.53
	Dry Sill	175.4	Uncarpeted	7011.68	7011.68
	Wet Sill	12.5		513.41	307.90
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0411603	Entryway	58.5	Carpeted	300.67	300.67
	Dry Floor	54.2	Carpeted	133.63	133.63
	Wet Floor	3.5	Uncarpeted	93.71	42.28
	Dry Sill	18.2		682.19	516.91
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0420901	Entryway	135.4	Carpeted	213.96	213.96
	Dry Floor	1131.0	Carpeted	4.57	4.57
	Wet Floor	831.1	Carpeted	9.96	9.96
	Dry Sill	960.4		286.57	286.57
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0421206	Entryway	215.5	Uncarpeted	1399.77	1399.77
	Dry Floor	327.0	Uncarpeted	67.31	67.31
	Wet Floor	48.6	Uncarpeted	1159.38	1159.38
	Dry Sill	198.5		331.39	331.39
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0430108	Entryway	69.5	Carpeted	20.98	20.98
	Dry Floor	18.3	Carpeted	79.67	60.65
	Wet Floor	95.6	Uncarpeted	105.11	105.11
	Dry Sill	34.6	Uncarpeted	150.21	150.21
	Wet Sill	8.7		456.18	240.19
	Dry Trough	0.1	Carpeted	.	.

	Wet Trough	0.1		.	.
0430207	Entryway	324.2	Uncarpeted	82.98	82.98
	Dry Floor	200.5	Carpeted	82.57	82.57
	Wet Floor	91.4	Uncarpeted	113.20	113.20
	Dry Sill	81.3		101.81	101.81
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0430306	Entryway	4210.2	Carpeted	2.21	2.21
	Dry Floor	3580.1	Carpeted	0.58	0.58
	Wet Floor	3820.2	Uncarpeted	18.42	18.42
	Dry Sill	5269.8		0.79	0.79
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0430702	Entryway	111.4	Carpeted	631.57	631.57
	Dry Floor	60.4	Carpeted	5.69	5.69
	Wet Floor	73.5	Uncarpeted	98.54	98.54
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0440107	Entryway	139.7	Carpeted	525.85	525.85
	Dry Floor	53.2	Carpeted	272.28	272.28
	Wet Floor	102.5	Carpeted	60.57	60.57
	Dry Sill	60.9	Uncarpeted	407.75	407.75
	Wet Sill	47.3		153.12	153.12
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0440305	Entryway	125.2	Carpeted	347.09	347.09
	Dry Floor	121.8	Carpeted	169.90	169.90
	Wet Floor	18.1	Carpeted	57.16	43.11
	Dry Sill	5.3	Carpeted	195.22	92.67
	Wet Sill	2.0		517.33	102.04
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0440602	Entryway	60.9	Uncarpeted	220.86	220.86
	Dry Floor	3.8	Uncarpeted	272.28	123.86
	Wet Floor	75.2	Uncarpeted	82.55	82.55
	Dry Sill	5289.9	Uncarpeted	.	.
	Wet Sill	1.5		1379.55	153.97
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
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0441105	Entryway	86.6	Carpeted	102.10	102.10
	Dry Floor	16.3	Carpeted	167.29	116.52
	Wet Floor	75.7	Carpeted	36.02	36.02
	Dry Sill	13.5		293.98	182.99
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0441204	Entryway	301.2	Uncarpeted	144.28	144.28
	Dry Floor	132.1	Uncarpeted	125.32	125.32
	Wet Floor	210.2	Uncarpeted	255.96	255.96
	Dry Sill	6.0	Uncarpeted	172.44	83.55
	Wet Sill	591.4		230.94	230.94
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0520106	Entryway	25.3	Carpeted	257.64	257.64
	Dry Floor	3.1	Carpeted	330.42	147.45
	Wet Floor	77.9	Carpeted	28.69	28.69
	Dry Sill	2.0		770.82	152.04
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0520403	Entryway	1023.7	Carpeted	303.21	303.21
	Dry Floor	1001.1	Carpeted	301.79	301.79
	Wet Floor	51.8	Uncarpeted	171.78	171.78
	Dry Sill	177.4	Uncarpeted	332.44	332.44
	Wet Sill	114.8		214.50	214.50
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0520700	Entryway	96.8	Uncarpeted	716.14	716.14
	Dry Floor	214.5	Uncarpeted	1152.84	1152.84
	Wet Floor	35.9	Carpeted	256.50	256.50
	Dry Sill	0.2	Uncarpeted	5845835.49	.
	Wet Sill	1.2	Uncarpeted	12674.60	1047.49
	Dry Trough	38.6	Uncarpeted	33237.82	33237.82
	Wet Trough	79.3	Uncarpeted	26355.81	26355.81
0520809	Entryway	371.9	Carpeted	734.47	734.47
	Dry Floor	25.1	Carpeted	158.29	158.29
	Wet Floor	145.3	Carpeted	118.92	118.92
	Dry Sill	47.4	Carpeted	19863.75	19863.75
	Wet Sill	0.4	Carpeted	419.04	.
	Dry Trough	41.1	Carpeted	5286.59	5286.59
	Wet Trough	65.4	Carpeted	7245.79	7245.79
0520908	Entryway	4.8	Uncarpeted	269.44	126.07
	Dry Floor	22.6	Carpeted	148.33	141.08
	Wet Floor	27.0	Uncarpeted	1130.46	1130.46
	Dry Sill	66.5		318.96	318.96
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All

Floor, Window Sill, and Window Trough Samples in the  
284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0530105	Entryway	26.6	Carpeted	291.73	291.73
	Dry Floor	55.3	Carpeted	114.13	114.13
	Wet Floor	32.5	Uncarpeted	432.97	432.97
	Dry Sill	29.8	Uncarpeted	503.44	503.44
	Wet Sill	0.9		1655.46	104.48
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0530600	Entryway	27.2	Carpeted	285.29	285.29
	Dry Floor	18.6	Carpeted	75.65	58.40
	Wet Floor	0.1		.	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1	Carpeted	.	.
	Dry Trough	0.1		.	.
	Wet Trough	350.7		22.42	22.42
0531301	Entryway	355.1	Uncarpeted	201.05	201.05
	Dry Floor	109.5	Uncarpeted	68.03	68.03
	Wet Floor	125.1	Uncarpeted	504.51	504.51
	Dry Sill	39.6		182.89	182.89
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
0531400	Entryway	242.1	Carpeted	154.28	154.28
	Dry Floor	1035.5	Carpeted	142.88	142.88
	Wet Floor	398.2	Uncarpeted	137.71	137.71
	Dry Sill	85.2	Uncarpeted	459.04	459.04
	Wet Sill	71.5		196.80	196.80
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0540203	Entryway	212.5	Carpeted	143.64	143.64
	Dry Floor	82.7	Carpeted	41.04	41.04
	Wet Floor	367.6	Carpeted	15.76	15.76
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0541201	Entryway	3.4	Carpeted	636.01	286.16
	Dry Floor	120.3	Carpeted	14.02	14.02
	Wet Floor	0.2	Uncarpeted	662.18	.
	Dry Sill	0.1	Uncarpeted	124.16	.
	Wet Sill	5.1		1095.52	517.03
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
0541300	Entryway	23.0	Carpeted	899.71	876.01
	Dry Floor	64.1	Carpeted	74.90	74.90

Wet Floor	80.6	Uncarpeted	73.17	73.17
Dry Sill	173.0	Uncarpeted	406.69	406.69
Wet Sill	5.8		185.53	89.36
Dry Trough	0.1	Carpeted	.	.
Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0612002	Entryway	13.3	Uncarpeted	1244.71	768.95
	Dry Floor	2.8	Uncarpeted	942.28	402.63
	Wet Floor	0.3	Uncarpeted	896.71	.
	Dry Sill	19.2		307.17	244.02
	Wet Sill	0.5		715.99	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0621607	Entryway	15.9		135.35	92.70
	Dry Floor	55.2	Carpeted	56.23	56.23
	Wet Floor	6.5	Carpeted	101.87	50.10
	Dry Sill	0.1		1355.41	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0631408	Entryway	25.8	Carpeted	320.83	320.83
	Dry Floor	19.4	Carpeted	129.60	103.96
	Wet Floor	1.5	Uncarpeted	244.18	27.25
	Dry Sill	46.6		273.10	273.10
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0651901	Entryway	7.9	Carpeted	151.92	77.99
	Dry Floor	5.9	Carpeted	161.34	77.94
	Wet Floor	0.2	Uncarpeted	931.20	.
	Dry Sill	68.0		488.42	488.42
	Wet Sill	26.5		234.26	234.26
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0710103	Entryway	10.2	Carpeted	695.91	384.94
	Dry Floor	16.0	Carpeted	247.28	170.06
	Wet Floor	12.4	Uncarpeted	310.11	185.29
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0711002	Entryway	74.2	Carpeted	1017.93	1017.93
	Dry Floor	19.5	Carpeted	134.24	108.22
	Wet Floor	63.6	Uncarpeted	107.37	107.37

	Dry Sill	9.6		418.18	226.73
	Wet Sill	0.1		.	.
	Dry Trough	222.6		6693.23	6693.23
	Wet Trough	0.1		.	.
0720300	Entryway	45.7	Carpeted	492.05	492.05
	Dry Floor	53.7	Carpeted	243.08	243.08
	Wet Floor	7.1	Uncarpeted	181.59	90.94
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	47.0		8709.51	8709.51
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0720706	Entryway	10.3	Uncarpeted	1209.06	671.07
	Dry Floor	54.9	Uncarpeted	517.84	517.84
	Wet Floor	6.4	Uncarpeted	745.08	365.31
	Dry Sill	41.4		3208.34	3208.34
	Wet Sill	25.4		843.12	843.12
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0721001	Entryway	193.1	Carpeted	359.00	359.00
	Dry Floor	87.8	Carpeted	174.41	174.41
	Wet Floor	4.8	Uncarpeted	3772.20	1765.03
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0730606	Entryway	61.4	Carpeted	559.46	559.46
	Dry Floor	247.9	Carpeted	371.46	371.46
	Wet Floor	26.8	Uncarpeted	1891.73	1891.73
	Dry Sill	1948.0		4674.27	4674.27
	Wet Sill	116.7		101958.90	101958.90
	Dry Trough	2061.8		19620.37	19620.37
	Wet Trough	257.3		27746.45	27746.45
0750406	Entryway	48.6	Carpeted	374.42	374.42
	Dry Floor	1.4	Uncarpeted	4331.75	435.80
	Wet Floor	358.5		707.46	707.46
	Dry Sill	0.1		.	.
	Wet Sill	7.6		690.31	351.05
	Dry Trough	94.4	Uncarpeted	1593.61	1593.61
	Wet Trough	0.1	Uncarpeted	.	.
0820506	Entryway	23.2	Carpeted	459.07	452.38
	Dry Floor	41.9	Carpeted	63.88	63.88
	Wet Floor	55.7	Carpeted	45.13	45.13
	Dry Sill	8.1	Uncarpeted	574.31	296.66

	Wet Sill	1.2	Uncarpeted	2105.13	173.98
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	57.5		1615.03	1615.03
0821009	Entryway	1.3	Uncarpeted	1654.26	150.57
	Dry Floor	14.9	Carpeted	150.10	98.68
	Wet Floor	2.5	Uncarpeted	179.33	62.70
	Dry Sill	1.7		4373.86	607.31
	Wet Sill	0.1		.	.
	Dry Trough	10.8	Uncarpeted	877.37	495.36
	Wet Trough	0.1	Uncarpeted	.	.
0840702	Entryway	61.9	Carpeted	82.74	82.74
	Dry Floor	26.9	Carpeted	116.45	116.45
	Wet Floor	23.4	Uncarpeted	42.28	42.17
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.2		1552.11	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0911404	Entryway	1.9	Carpeted	519.33	90.89
	Dry Floor	6.4	Carpeted	187.16	91.76
	Wet Floor	1.9	Carpeted	740.14	129.54
	Dry Sill	0.1		.	.
	Wet Sill	0.2		687.57	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0911503	Entryway	99.7	Uncarpeted	230.32	230.32
	Dry Floor	0.1		.	.
	Wet Floor	322.0	Uncarpeted	267.93	267.93
	Dry Sill	5.3		1918.65	910.74
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0911800	Entryway	6.9	Carpeted	169.80	84.51
	Dry Floor	10.4	Carpeted	183.35	102.11
	Wet Floor	15.5	Carpeted	132.04	88.95
	Dry Sill	121.7		111.20	111.20
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0920801	Entryway	0.1	Carpeted	5483.70	.
	Dry Floor	0.4	Carpeted	1070.87	.
	Wet Floor	38.9	Carpeted	80.06	80.06
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.

	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0920900	Entryway	1.9	Carpeted	1303.10	228.07
	Dry Floor	5.1	Carpeted	211.66	99.89
	Wet Floor	32.9	Uncarpeted	197.65	197.65
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0921304	Entryway	0.2	Uncarpeted	3879.98	.
	Dry Floor	8.0	Carpeted	247.03	127.20
	Wet Floor	1.6	Uncarpeted	1183.39	147.04
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0930701	Entryway	0.6		2224.52	.
	Dry Floor	2.6	Carpeted	306.42	116.98
	Wet Floor	16.3	Uncarpeted	603.02	420.02
	Dry Sill	0.1		.	.
	Wet Sill	1.6		472.06	58.65
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
0940700	Entryway	0.1	Uncarpeted	.	.
	Dry Floor	12.8	Carpeted	175.71	106.55
	Wet Floor	46.1	Uncarpeted	30.50	30.50
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0940809	Entryway	10.9	Carpeted	443.11	251.04
	Dry Floor	8.9	Carpeted	1311.54	695.00
	Wet Floor	9.3	Uncarpeted	714.92	383.81
	Dry Sill	22.6		582.88	554.39
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
0941005	Entryway	0.1	Uncarpeted	.	.
	Dry Floor	19.6	Carpeted	354.72	287.37
	Wet Floor	6.9	Uncarpeted	241.17	120.04
	Dry Sill	27.3		4650.27	4650.27
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.



	Wet Trough	0.1		.	.
0950402	Entryway	34.9	Carpeted	950.53	950.53
	Dry Floor	31.7	Carpeted	370.12	370.12
	Wet Floor	8.6	Uncarpeted	726.42	381.24
	Dry Sill	90.9		5429.96	5429.96
	Wet Sill	60.6		502.42	502.42
	Dry Trough	201.5		.	.
	Wet Trough	0.1		.	.
0951004	Entryway	0.3	Carpeted	1599.94	.
	Dry Floor	25.3	Uncarpeted	568.04	568.04
	Wet Floor	5.9	Uncarpeted	672.68	324.95
	Dry Sill	35.9		1950.53	1950.53
	Wet Sill	1.3		3185.73	289.97
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1010503	Entryway	306.4	Carpeted	1767.42	1767.42
	Dry Floor	210.9	Uncarpeted	1352.56	1352.56
	Wet Floor	29.8	Uncarpeted	858.35	858.35
	Dry Sill	4.6		4526.01	2105.71
	Wet Sill	16.8		2510.18	1786.32
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1010909	Entryway	53.5	Uncarpeted	1339.70	1339.70
	Dry Floor	5.1	Carpeted	1019.10	480.96
	Wet Floor	1.7		1603.98	222.71
	Dry Sill	2.3		3896.81	1100.18
	Wet Sill	0.1		27267.66	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1011303	Entryway	60.8	Carpeted	1735.78	1735.78
	Dry Floor	59.1	Carpeted	367.65	367.65
	Wet Floor	19.0	Uncarpeted	1688.13	1328.21
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	6.9		2249.26	1119.55
1011501	Entryway	0.8	Uncarpeted	18563.00	1077.46
	Dry Floor	41.5	Carpeted	587.71	587.71
	Wet Floor	13.9	Uncarpeted	1068.37	675.28
	Dry Sill	0.1		.	.
	Wet Sill	9.9		1862.14	1019.75
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

1011600	Entryway	0.4		5173.31	.
	Dry Floor	5.0		1034.66	486.90
	Wet Floor	0.8		3879.98	225.21
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1011709	Entryway	1.8	Carpeted	3448.87	536.80
	Dry Floor	0.3	Carpeted	3448.87	.
	Wet Floor	2.1	Uncarpeted	985.39	219.30
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1020205	Entryway	0.5	Uncarpeted	2916.08	.
	Dry Floor	21.4	Carpeted	202.73	180.26
	Wet Floor	1.4	Carpeted	216.25	21.76
	Dry Sill	5.0		793.76	373.53
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1020304	Entryway	6.3	Carpeted	231.44	113.13
	Dry Floor	2.5	Carpeted	264.96	92.63
	Wet Floor	10.5	Carpeted	330.86	184.89
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1020403	Entryway	10.4	Carpeted	262.19	146.02
	Dry Floor	10.4	Carpeted	140.20	78.08
	Wet Floor	9.0		162.00	86.13
	Dry Sill	0.1		2237.48	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1020502	Entryway	15.9		326.88	223.88
	Dry Floor	20.6	Carpeted	132.37	112.80
	Wet Floor	1.0	Uncarpeted	1458.04	100.34
	Dry Sill	3.5		2526.25	1139.75
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1020700	Entryway	0.4	Carpeted	718.27	.

	Dry Floor	2.2	Carpeted	205.10	51.48
	Wet Floor	0.6	Carpeted	630.20	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1020809	Entryway	6.5	Carpeted	610.58	300.26
	Dry Floor	0.1	Carpeted	.	.
	Wet Floor	3.4		428.84	192.94
	Dry Sill	0.3		9089.22	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1021005	Entryway	0.5	Uncarpeted	1543.73	.
	Dry Floor	0.1	Carpeted	4656.28	.
	Wet Floor	0.8	Uncarpeted	3408.46	197.84
	Dry Sill	0.3		4860.14	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1030204	Entryway	6.8	Carpeted	583.65	289.62
	Dry Floor	14.5	Carpeted	100.55	65.06
	Wet Floor	19.2	Carpeted	75.94	60.33
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1040500	Entryway	38.0	Uncarpeted	200.84	200.84
	Dry Floor	2.8	Carpeted	973.84	416.11
	Wet Floor	2.0	Uncarpeted	254.26	50.15
	Dry Sill	10.3		264.73	146.94
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1041607	Entryway	0.1	Uncarpeted	.	.
	Dry Floor	0.9	Carpeted	3448.87	217.66
	Wet Floor	4999.8	Uncarpeted	0.05	0.05
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1050509	Entryway	0.5	Carpeted	2069.32	.
	Dry Floor	4.1	Carpeted	108.01	49.55

	Wet Floor	3.7	Uncarpeted	83.89	38.06
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1050608	Entryway	6.2	Carpeted	333.76	162.67
	Dry Floor	2.2	Carpeted	66.78	16.76
	Wet Floor	0.2	Uncarpeted	631.14	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1051200	Entryway	2.2	Carpeted	470.30	118.03
	Dry Floor	3.2	Carpeted	323.33	144.68
	Wet Floor	2.4	Carpeted	194.43	61.38
	Dry Sill	0.1		.	.
	Wet Sill	3043.8		1.02	1.02
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1051408	Entryway	2.6	Carpeted	795.89	303.85
	Dry Floor	7.8	Carpeted	132.65	67.88
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1120401	Entryway	230.5	Carpeted	260.35	260.35
	Dry Floor	464.5	Uncarpeted	242.79	242.79
	Wet Floor	32.2	Uncarpeted	234.57	234.57
	Dry Sill	6.5	Uncarpeted	581.00	285.71
	Wet Sill	8.8	Uncarpeted	3.06	1.61
	Dry Trough	38.8	Uncarpeted	1653.32	1653.32
	Wet Trough	110.0	Uncarpeted	434.56	434.56
1121300	Entryway	6.8	Carpeted	483.86	240.10
	Dry Floor	15.8	Carpeted	65.48	44.66
	Wet Floor	22.6	Carpeted	17.31	16.46
	Dry Sill	5.4		118.79	56.55
	Wet Sill	0.1		.	.
	Dry Trough	4.4	Uncarpeted	2915.86	1348.93
	Wet Trough	0.1	Uncarpeted	.	.
1130806	Entryway	1.0	Uncarpeted	351.78	24.21
	Dry Floor	52.8	Carpeted	272.38	272.38
	Wet Floor	73.2	Carpeted	250.18	250.18
	Dry Sill	11.7	Uncarpeted	106.12	61.83
	Wet Sill	0.8	Uncarpeted	15.52	0.90
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	2.0		122.09	24.08

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1140508	Entryway	74.4	Carpeted	890.03	890.03
	Dry Floor	9.4	Carpeted	77.05	41.50
	Wet Floor	2.2	Carpeted	24.93	6.26
	Dry Sill	3.9	Uncarpeted	2918.28	1331.27
	Wet Sill	0.7	Uncarpeted	235.02	12.58
	Dry Trough	4.5	Uncarpeted	13335.63	6186.78
	Wet Trough	5.4	Uncarpeted	7185.15	3420.50
1150200	Entryway	34.6	Carpeted	319.97	319.97
	Dry Floor	3.5	Uncarpeted	31.93	14.40
	Wet Floor	9.1	Uncarpeted	54.80	29.23
	Dry Sill	33.6		705.17	705.17
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1150705	Entryway	17.5	Carpeted	253.64	186.15
	Dry Floor	22.1		266.86	246.65
	Wet Floor	9.5	Uncarpeted	77.33	41.79
	Dry Sill	57.2		1646.05	1646.05
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1210806	Entryway	53.3	Carpeted	1069.53	1069.53
	Dry Floor	13.0	Carpeted	1291.93	789.21
	Wet Floor	3.8	Uncarpeted	422.01	191.98
	Dry Sill	0.1		.	.
	Wet Sill	2.4		1895.25	598.30
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1221902	Entryway	36.7	Uncarpeted	820.40	820.40
	Dry Floor	40.7	Uncarpeted	11287.21	11287.21
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	89.4	Uncarpeted	67125.67	67125.67
	Wet Sill	16.9		759.16	542.62
	Dry Trough	524.0	Uncarpeted	13031.99	13031.99
	Wet Trough	0.1	Uncarpeted	.	.
1241801	Entryway	2.0	Carpeted	615.62	121.43
	Dry Floor	13.5	Uncarpeted	137.95	85.87
	Wet Floor	14.8	Uncarpeted	206.23	135.04
	Dry Sill	0.1	Uncarpeted	3000.52	.
	Wet Sill	47.8		18398.79	18398.79
	Dry Trough	103.8	Uncarpeted	1624.76	1624.76
	Wet Trough	0.1		.	.
1250406	Entryway	15.7	Uncarpeted	3756.41	2551.38
	Dry Floor	5.1	Uncarpeted	3002.55	1417.03
	Wet Floor	7.8	Uncarpeted	4337.62	2219.66
	Dry Sill	2.0	Uncarpeted	2043.46	403.06
	Wet Sill	2.0	Uncarpeted	7501.29	1479.57

Dry Trough	34.6	Uncarpeted	16446.93	16446.93
Wet Trough	18.1	Uncarpeted	27038.38	20393.21

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1251107	Entryway	141.0	Carpeted	601.72	601.72
	Dry Floor	2.3	Uncarpeted	1228.10	346.73
	Wet Floor	25.2	Uncarpeted	8375.83	8375.83
	Dry Sill	4.8		3621.31	1694.43
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1251404	Entryway	16.3	Carpeted	1174.31	817.93
	Dry Floor	8.6	Carpeted	878.26	460.93
	Wet Floor	3.7	Uncarpeted	559.28	253.72
	Dry Sill	1.4	Uncarpeted	6947.01	698.91
	Wet Sill	0.1	Uncarpeted	37454.73	.
	Dry Trough	75.5	Uncarpeted	25626.71	25626.71
	Wet Trough	57.0	Uncarpeted	15973.72	15973.72
1311505	Entryway	0.3	Carpeted	7320.24	.
	Dry Floor	2.1	Carpeted	367.56	81.80
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	12.8	Uncarpeted	188.32	114.19
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		2431.64	.
1312701	Entryway	1.8	Carpeted	398.52	62.03
	Dry Floor	0.2	Carpeted	282.59	.
	Wet Floor	0.4	Uncarpeted	141.29	.
	Dry Sill	0.1	Uncarpeted	23437.42	.
	Wet Sill	0.6		94.20	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1312800	Entryway	3.0	Carpeted	988.06	439.73
	Dry Floor	302.3	Uncarpeted	254.63	254.63
	Wet Floor	8.8	Uncarpeted	69.76	36.85
	Dry Sill	0.3	Uncarpeted	188.39	.
	Wet Sill	2.0	Uncarpeted	268.43	52.95
	Dry Trough	48.0	Uncarpeted	635.54	635.54
	Wet Trough	0.7	Uncarpeted	4980.61	266.66
1322601	Entryway	0.1	Uncarpeted	13023.23	.
	Dry Floor	2.3	Carpeted	359.14	101.40
	Wet Floor	0.1	Uncarpeted	5227.16	.
	Dry Sill	0.1	Uncarpeted	4656.28	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.

	Wet Trough	0.1		.	.
1323609	Entryway	13.1	Carpeted	218.84	134.19
	Dry Floor	5.7	Carpeted	61.11	29.35
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1332402	Entryway	2.4	Uncarpeted	698.71	220.57
	Dry Floor	84.2	Carpeted	274.13	274.13
	Wet Floor	3.1	Uncarpeted	770.27	343.73
	Dry Sill	4.4	Uncarpeted	833.19	385.45
	Wet Sill	4.0		236.70	108.28
	Dry Trough	3.3	Uncarpeted	7796.16	3498.08
	Wet Trough	0.1	Uncarpeted	.	.
1333806	Entryway	1.1	Uncarpeted	1457.93	109.78
	Dry Floor	232.1	Carpeted	271.93	271.93
	Wet Floor	7.9	Carpeted	3313.54	1700.90
	Dry Sill	1.1	Uncarpeted	2596.06	195.47
	Wet Sill	0.3		2379.72	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1352608	Entryway	101.4	Uncarpeted	833.14	833.14
	Dry Floor	204.8	Uncarpeted	4008.50	4008.50
	Wet Floor	147.2	Carpeted	218.72	218.72
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1352806	Entryway	13.9	Uncarpeted	253.94	160.51
	Dry Floor	43.9	Carpeted	85.90	85.90
	Wet Floor	17.3	Uncarpeted	85.18	61.96
	Dry Sill	40.6	Uncarpeted	56.49	56.49
	Wet Sill	7.7	Uncarpeted	7.34	3.74
	Dry Trough	145.0	Uncarpeted	615.29	615.29
	Wet Trough	23.6	Uncarpeted	33.74	33.74
1353309	Entryway	5.6	Carpeted	147.02	70.40
	Dry Floor	3.8	Carpeted	14.87	6.77
	Wet Floor	28.7	Uncarpeted	6.34	6.34
	Dry Sill	1.5	Uncarpeted	37.68	4.21
	Wet Sill	1.3		238.79	21.73
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1	Uncarpeted	.	.

1353705	Entryway	5.2	Carpeted	1048.89	496.45
	Dry Floor	0.1	Carpeted	6899.22	.
	Wet Floor	4.9	Carpeted	860.28	403.68
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	19.7		17808.45	14498.97
1410406	Entryway	11.9	Carpeted	419.95	246.44
	Dry Floor	29.4	Carpeted	93.96	93.96
	Wet Floor	3.8	Uncarpeted	1045.55	475.64
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	18.6		235.30	181.64
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1411909	Entryway	236.7	Carpeted	5158.01	5158.01
	Dry Floor	17.7	Carpeted	159.58	118.18
	Wet Floor	29.0	Carpeted	196.23	196.23
	Dry Sill	5.9	Uncarpeted	1806.27	872.55
	Wet Sill	2.4	Uncarpeted	698.40	220.47
	Dry Trough	76.2	Uncarpeted	13985.58	13985.58
	Wet Trough	165.4	Uncarpeted	1163.52	1163.52
1440205	Entryway	214.8	Uncarpeted	250.48	250.48
	Dry Floor	5.7	Carpeted	203.30	97.63
	Wet Floor	54.0	Carpeted	191.60	191.60
	Dry Sill	13.2		1199.27	738.11
	Wet Sill	0.1		.	.
	Dry Trough	32.2	Uncarpeted	848.29	848.29
	Wet Trough	0.1	Uncarpeted	.	.
1441005	Entryway	6.3	Carpeted	231.57	113.20
	Dry Floor	6.1	Carpeted	111.95	54.40
	Wet Floor	57.3	Carpeted	38.82	38.82
	Dry Sill	6.3		54.20	26.49
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1441302	Entryway	3.8	Carpeted	402.97	183.32
	Dry Floor	8.0	Carpeted	75.01	38.63
	Wet Floor	0.3	Carpeted	41.39	.
	Dry Sill	0.1	Uncarpeted	506.98	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1450907	Entryway	1298.7	Carpeted	82.05	82.05



	Dry Floor	144.1	Carpeted	31.74	31.74
	Wet Floor	356.2	Carpeted	58.97	58.97
	Dry Sill	4.2		83.02	38.19
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1510403	Entryway	21.4	Carpeted	264.55	235.23
	Dry Floor	5.8	Carpeted	228.93	110.26
	Wet Floor	20.3	Carpeted	361.22	303.12
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	177.4		63.80	63.80
	Wet Trough	0.1		.	.
1510908	Entryway	163.0	Carpeted	200.02	200.02
	Dry Floor	0.1	Carpeted	.	.
	Wet Floor	15.9	Carpeted	88.15	60.37
	Dry Sill	4.8	Uncarpeted	153.39	71.77
	Wet Sill	0.8	Uncarpeted	456.46	26.49
	Dry Trough	24.6	Uncarpeted	90.48	90.48
	Wet Trough	0.1	Uncarpeted	.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1520204	Entryway	65.8	Carpeted	252.51	252.51
	Dry Floor	6.5	Carpeted	108.02	53.12
	Wet Floor	3.6	Uncarpeted	183.15	82.86
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.4	Uncarpeted	2917.36	.
	Dry Trough	131.9	Uncarpeted	2030.78	2030.78
	Wet Trough	152.3	Uncarpeted	1581.45	1581.45
1521400	Entryway	75.2	Carpeted	245.15	245.15
	Dry Floor	48.8	Carpeted	205.91	205.91
	Wet Floor	461.7	Carpeted	157.79	157.79
	Dry Sill	81.3	Uncarpeted	387.63	387.63
	Wet Sill	105.8		320.27	320.27
	Dry Trough	20.2	Uncarpeted	557.03	465.03
	Wet Trough	0.1	Uncarpeted	.	.
1521509	Entryway	15.3	Carpeted	892.33	596.20
	Dry Floor	0.1		.	.
	Wet Floor	117.8	Carpeted	368.03	368.03
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	155.3	Uncarpeted	1919.75	1919.75
	Wet Trough	0.1	Uncarpeted	.	.
1530104	Entryway	55.4	Carpeted	200.93	200.93
	Dry Floor	32.4	Carpeted	160.41	160.41

	Wet Floor	53.2	Uncarpeted	234.09	234.09
	Dry Sill	66.3		169.71	169.71
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1530302	Entryway	16.2	Uncarpeted	396.15	274.77
	Dry Floor	29.9	Carpeted	295.71	295.71
	Wet Floor	20.5	Uncarpeted	490.16	415.58
	Dry Sill	28.0	Uncarpeted	1421.61	1421.61
	Wet Sill	230.2	Uncarpeted	786.03	786.03
	Dry Trough	456.1	Uncarpeted	1043.71	1043.71
	Wet Trough	0.1	Uncarpeted	3180.58	.
1530500	Entryway	8.4	Carpeted	487.16	254.05
	Dry Floor	19.6	Carpeted	139.12	112.71
	Wet Floor	2.6	Carpeted	560.79	214.09
	Dry Sill	72.8	Uncarpeted	1081.60	1081.60
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	155.5		2271.17	2271.17
1530807	Entryway	102.1	Carpeted	273.79	273.79
	Dry Floor	107.8	Carpeted	215.22	215.22
	Wet Floor	11.5	Uncarpeted	237.11	137.18
	Dry Sill	45.6	Uncarpeted	404.28	404.28
	Wet Sill	0.1	Uncarpeted	14580.42	.
	Dry Trough	155.5	Uncarpeted	627.45	627.45
	Wet Trough	4.0	Uncarpeted	4906.98	2244.72

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1531201	Entryway	369.7	Carpeted	1005.94	1005.94
	Dry Floor	0.1		.	.
	Wet Floor	144.5	Uncarpeted	381.77	381.77
	Dry Sill	56.9		1093.92	1093.92
	Wet Sill	0.1		.	.
	Dry Trough	899.3		2003.84	2003.84
	Wet Trough	0.1		.	.
1531300	Entryway	89.7	Carpeted	477.12	477.12
	Dry Floor	18.1	Uncarpeted	185.71	140.07
	Wet Floor	59.3	Carpeted	89.37	89.37
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	1.3	Uncarpeted	5288.92	481.40
	Dry Trough	17.8	Uncarpeted	3852.22	2865.71
	Wet Trough	328.1	Uncarpeted	1550.90	1550.90
1531607	Entryway	54.9	Carpeted	574.02	574.02
	Dry Floor	9.1	Carpeted	705.23	376.14
	Wet Floor	141.1	Carpeted	172.86	172.86

	Dry Sill	6.4		96491.66	47308.72
	Wet Sill	0.1		.	.
	Dry Trough	65.3	Uncarpeted	17724.80	17724.80
	Wet Trough	0.1	Uncarpeted	.	.
1531706	Entryway	108.3	Carpeted	166.86	166.86
	Dry Floor	23.5	Carpeted	104.11	104.11
	Wet Floor	14.6	Uncarpeted	294.28	191.17
	Dry Sill	445.8	Uncarpeted	180.25	180.25
	Wet Sill	0.4	Uncarpeted	3409.81	.
	Dry Trough	825.9	Uncarpeted	388.63	388.63
	Wet Trough	269.1	Uncarpeted	2141.82	2141.82
1540202	Entryway	9.1	Carpeted	461.89	246.35
	Dry Floor	10.3	Carpeted	111.98	62.15
	Wet Floor	3.0	Uncarpeted	171.73	76.42
	Dry Sill	0.1		.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	244.8		290.72	290.72
	Wet Trough	650.2	Uncarpeted	133.74	133.74
1540400	Entryway	165.0	Carpeted	162.61	162.61
	Dry Floor	121.6	Carpeted	.	.
	Wet Floor	7.3	Uncarpeted	132.61	66.82
	Dry Sill	49.5		87.32	87.32
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	1011.2		78.68	78.68
1540806	Entryway	324.7	Carpeted	129.88	129.88
	Dry Floor	5.7	Carpeted	255.80	122.84
	Wet Floor	74.9	Carpeted	373.22	373.22
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	152.2		113.28	113.28
	Wet Trough	0.1	Uncarpeted	.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1541200	Entryway	15.0	Uncarpeted	457.31	301.86
	Dry Floor	11.8	Carpeted	149.17	87.22
	Wet Floor	7.4	Uncarpeted	156.94	79.32
	Dry Sill	0.1		.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1		.	.
	Wet Trough	1632.5		150.41	150.41
1550102	Entryway	58.5	Carpeted	355.89	355.89
	Dry Floor	0.1		.	.
	Wet Floor	17.7	Uncarpeted	82.38	61.00
	Dry Sill	7.0	Uncarpeted	208.29	103.99

	Wet Sill	0.1	Uncarpeted	1557.25	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	165.0		13044.11	13044.11
1550607	Entryway	82.9	Carpeted	121.21	121.21
	Dry Floor	30.0	Uncarpeted	1326.84	1326.84
	Wet Floor	38.7	Carpeted	352.78	352.78
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1551704	Entryway	250.6	Carpeted	333.00	333.00
	Dry Floor	37.8	Carpeted	392.87	392.87
	Wet Floor	79.2	Carpeted	217.70	217.70
	Dry Sill	0.5	Uncarpeted	44021.12	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	457178.46	.
	Wet Trough	13.4	Uncarpeted	21637.24	13417.62
1631209	Entryway	69.9	Carpeted	380.41	380.41
	Dry Floor	100.6	Carpeted	102.85	102.85
	Wet Floor	1.2	Uncarpeted	75.01	6.20
	Dry Sill	42.0		1177.54	1177.54
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1631308	Entryway	8.3	Carpeted	445.03	231.34
	Dry Floor	20.5	Carpeted	164.54	139.50
	Wet Floor	65.6	Carpeted	102.52	102.52
	Dry Sill	190.4		701.00	701.00
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1722206	Entryway	0.1		.	.
	Dry Floor	166.3	Uncarpeted	373.30	373.30
	Wet Floor	0.1		.	.
	Dry Sill	15.9		260.29	178.27
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1730407	Entryway	113.2	Uncarpeted	310.76	310.76
	Dry Floor	116.7	Uncarpeted	62.06	62.06
	Wet Floor	37.8	Uncarpeted	26.82	26.82
	Dry Sill	232.1		503.73	503.73
	Wet Sill	0.1		.	.

	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1730704	Entryway	9.7	Carpeted	661.61	359.91
	Dry Floor	7.8	Carpeted	508.82	260.37
	Wet Floor	13.0	Uncarpeted	112.16	68.51
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.3		4860.14	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1730803	Entryway	32.2	Carpeted	123.25	123.25
	Dry Floor	32.3	Carpeted	348.36	348.36
	Wet Floor	138.5	Uncarpeted	19.69	19.69
	Dry Sill	4.8		1842.06	861.91
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1731603	Entryway	11.0	Carpeted	1.13	0.64
	Dry Floor	0.1	Carpeted	.	.
	Wet Floor	48.7	Uncarpeted	21.25	21.25
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1740901	Entryway	111.1	Uncarpeted	1639.22	1639.22
	Dry Floor	211.2	Carpeted	534.34	534.34
	Wet Floor	64.4	Uncarpeted	581.34	581.34
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1741701	Entryway	341.5	Carpeted	118.16	118.16
	Dry Floor	2111.1	Carpeted	146.06	146.06
	Wet Floor	37.8	Carpeted	54.74	54.74
	Dry Sill	0.1		.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	15.8		261.94	178.66
	Wet Trough	134.0	Uncarpeted	185.31	185.31
1741800	Entryway	0.1		.	.
	Dry Floor	162.8	Carpeted	164.42	164.42
	Wet Floor	68.5	Uncarpeted	93.69	93.69
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	302.9		111.87	111.87
	Wet Trough	0.1	Uncarpeted	.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House	Sampling	Dust Tap Weight	Surface	Original Dust-Lead Concentration	Revised Dust-Lead Concentration
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ID	Location	(mg)	Sampled	(µg/g)	(µg/g)
1743103	Entryway	30.5	Carpeted	33.92	33.92
	Dry Floor	21.9	Carpeted	10.20	9.33
	Wet Floor	9.2	Uncarpeted	112.46	60.18
	Dry Sill	0.1		734.61	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1750108	Entryway	29.1	Carpeted	355.55	355.55
	Dry Floor	8.0	Carpeted	.	.
	Wet Floor	3.9	Uncarpeted	48.55	22.15
	Dry Sill	4.9	Uncarpeted	633.47	297.25
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1751304	Entryway	68.2	Carpeted	470.30	470.30
	Dry Floor	27.2	Carpeted	114.12	114.12
	Wet Floor	119.3	Carpeted	60.71	60.71
	Dry Sill	20.2		1.74	1.45
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1820802	Entryway	0.6	Uncarpeted	1724.44	.
	Dry Floor	53.1	Uncarpeted	116.91	116.91
	Wet Floor	11.7	Uncarpeted	88.43	51.52
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.6		710.47	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1830801	Entryway	4.8	Carpeted	1293.33	605.15
	Dry Floor	14.6	Carpeted	637.80	414.33
	Wet Floor	40.3	Carpeted	179.72	179.72
	Dry Sill	0.1		.	.
	Wet Sill	1.4		739.04	74.35
	Dry Trough	0.1		.	.
	Wet Trough	10.3		3716.74	2062.92
1830900	Entryway	239.4	Uncarpeted	6356.80	6356.80
	Dry Floor	345.3	Uncarpeted	2208.23	2208.23
	Wet Floor	56.7	Uncarpeted	743.76	743.76
	Dry Sill	0.6		2430.07	.
	Wet Sill	0.1		.	.
	Dry Trough	43.5		1701.84	1701.84
	Wet Trough	6.1		2434.49	1182.99
1831106	Entryway	15.6	Uncarpeted	798.29	539.96
	Dry Floor	112.8	Uncarpeted	906.68	906.68
	Wet Floor	5.6	Uncarpeted	486.92	233.16
	Dry Sill	10.7		2945.23	1657.14
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1831304	Entryway	48.3	Carpeted	554.18	554.18
	Dry Floor	60.2	Carpeted	365.62	365.62
	Wet Floor	4.5	Uncarpeted	661.48	306.88
	Dry Sill	61.4		1933.69	1933.69
	Wet Sill	39.8		4457.92	4457.92
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1840305	Entryway	64.4	Carpeted	526.16	526.16
	Dry Floor	37.3	Carpeted	139.34	139.34
	Wet Floor	94.7	Carpeted	93.37	93.37
	Dry Sill	59.9		1039.14	1039.14
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1840503	Entryway	116.4	Uncarpeted	4195.53	4195.53
	Dry Floor	165.8	Uncarpeted	474.27	474.27
	Wet Floor	6.0	Uncarpeted	172.44	83.55
	Dry Sill	9.4		990.63	533.58
	Wet Sill	0.9		1149.62	72.55
	Dry Trough	0.1		.	.
	Wet Trough	8.2		2397.39	1242.30
1841105	Entryway	2.6	Uncarpeted	4327.69	1652.19
	Dry Floor	8.9	Uncarpeted	445.93	236.31
	Wet Floor	184.5	Carpeted	267.01	267.01
	Dry Sill	0.1		.	.
	Wet Sill	5.1		2206.28	1041.24
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
1851104	Entryway	245.5	Carpeted	450.11	450.11
	Dry Floor	128.7	Carpeted	87.43	87.43
	Wet Floor	13.8	Uncarpeted	105.66	66.52
	Dry Sill	3.8		5792.25	2634.99
	Wet Sill	0.1		.	.
	Dry Trough	59.2		6202.95	6202.95
	Wet Trough	0.1		.	.
1921709	Entryway	24.6	Uncarpeted	883.25	883.25
	Dry Floor	69.3	Uncarpeted	492.70	492.70
	Wet Floor	63.0	Uncarpeted	229.92	229.92
	Dry Sill	1.3		6367.15	579.54
	Wet Sill	0.1		.	.
	Dry Trough	713.3		7687.79	7687.79
	Wet Trough	0.1		.	.
1931906	Entryway	24.0	Uncarpeted	216.56	216.56

Dry Floor	43.5	Uncarpeted	175.45	175.45
Wet Floor	192.8	Uncarpeted	194.18	194.18
Dry Sill	37.6		5841.46	5841.46
Wet Sill	0.1		.	.
Dry Trough	0.1		.	.
Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
1932300	Entryway	285.7	Uncarpeted	108.64	108.64
	Dry Floor	307.1	Carpeted	363.87	363.87
	Wet Floor	573.3	Carpeted	588.35	588.35
	Dry Sill	88.0		1881.20	1881.20
	Wet Sill	0.1		.	.
	Dry Trough	611.7		3315.25	3315.25
	Wet Trough	0.1		.	.
1942606	Entryway	165.1	Carpeted	495.08	495.08
	Dry Floor	233.3	Carpeted	102.00	102.00
	Wet Floor	44.6	Uncarpeted	81.20	81.20
	Dry Sill	34.0		10863.94	10863.94
	Wet Sill	0.1		.	.
	Dry Trough	567.8		3772.01	3772.01
	Wet Trough	0.1		.	.
1951904	Entryway	16.9	Uncarpeted	2145.20	1533.32
	Dry Floor	147.9	Uncarpeted	532.39	532.39
	Wet Floor	70.2	Uncarpeted	600.73	600.73
	Dry Sill	3.9		1645.54	750.67
	Wet Sill	42.8		2197.21	2197.21
	Dry Trough	76.5		3177.50	3177.50
	Wet Trough	15.0		2337.97	1543.22
1952506	Entryway	25.0	Uncarpeted	744.96	744.96
	Dry Floor	18.7	Uncarpeted	497.97	386.24
	Wet Floor	51.0	Uncarpeted	101.44	101.44
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	1.7		287.27	39.89
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
1953009	Entryway	0.3	Uncarpeted	1369.20	.
	Dry Floor	4.7	Uncarpeted	220.14	102.71
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	2.0		517.33	102.04
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2022507	Entryway	508.3	Carpeted	501.27	501.27
	Dry Floor	46.0	Carpeted	395.58	395.58



	Wet Floor	139.1	Uncarpeted	971.77	971.77
	Dry Sill	19.2		1109.17	881.17
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	81.9	Uncarpeted	3082.45	3082.45
	Wet Trough	209.0	Uncarpeted	6555.04	6555.04
2022705	Entryway	100.1	Uncarpeted	73.82	73.82
	Dry Floor	78.9	Uncarpeted	311.01	311.01
	Wet Floor	295.5	Uncarpeted	43.56	43.56
	Dry Sill	11.4	Uncarpeted	276.41	159.35
	Wet Sill	5.8	Uncarpeted	1287.01	619.89
	Dry Trough	146.3	Uncarpeted	330.67	330.67
	Wet Trough	492.3	Uncarpeted	3530.03	3530.03

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2030302	Entryway	62.9	Carpeted	131.73	131.73
	Dry Floor	0.5	Carpeted	1374.35	.
	Wet Floor	35.9	Uncarpeted	48.85	48.85
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	16.8	Uncarpeted	371.86	264.62
	Wet Trough	0.1	Uncarpeted	.	.
2040301	Entryway	23.8	Carpeted	333.90	333.90
	Dry Floor	65.2	Carpeted	99.55	99.55
	Wet Floor	71.9	Carpeted	80.11	80.11
	Dry Sill	1.9	Uncarpeted	2683.94	469.75
	Wet Sill	0.6		3029.38	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2110906	Entryway	57.8	Carpeted	1807.97	1807.97
	Dry Floor	69.2	Carpeted	671.33	671.33
	Wet Floor	516.7	Uncarpeted	1802.20	1802.20
	Dry Sill	32.9	Uncarpeted	5346.27	5346.27
	Wet Sill	8.1		1749.98	903.96
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1	Uncarpeted	.	.
2121507	Entryway	204.3	Carpeted	349.45	349.45
	Dry Floor	95.8		187.92	187.92
	Wet Floor	28.3	Uncarpeted	96.89	96.89
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2122000	Entryway	252.0	Carpeted	521.44	521.44
	Dry Floor	172.2	Carpeted	220.51	220.51
	Wet Floor	6.1	Uncarpeted	240.86	117.04

	Dry Sill	89.7	Uncarpeted	493.68	493.68
	Wet Sill	0.1		15312.99	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2130706	Entryway	17.3	Uncarpeted	532.28	387.21
	Dry Floor	196.8	Carpeted	74.66	74.66
	Wet Floor	96.4	Carpeted	186.75	186.75
	Dry Sill	19.5		185.71	149.71
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2131902	Entryway	20.0	Uncarpeted	211.07	174.44
	Dry Floor	51.3	Carpeted	39.13	39.13
	Wet Floor	4.7	Uncarpeted	140.89	65.74
	Dry Sill	50.5		290.93	290.93
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2141505	Entryway	0.1	Uncarpeted	.	.
	Dry Floor	2.2	Carpeted	183.42	46.03
	Wet Floor	1.2	Uncarpeted	77.60	6.41
	Dry Sill	0.1		1448.53	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2141604	Entryway	262.6	Uncarpeted	98.50	98.50
	Dry Floor	150.8	Carpeted	74.10	74.10
	Wet Floor	100.3	Uncarpeted	76.34	76.34
	Dry Sill	0.4		2017.59	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	13.2	Uncarpeted	1309.00	805.65
	Wet Trough	15.6	Uncarpeted	6499.79	4396.46
2142107	Entryway	46.0	Carpeted	186.69	186.69
	Dry Floor	112.7	Carpeted	62.43	62.43
	Wet Floor	12.0	Uncarpeted	50.87	29.96
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2151207	Entryway	13.0	Carpeted	421.82	257.68
	Dry Floor	6.0	Carpeted	456.98	221.40
	Wet Floor	98.8	Uncarpeted	339.30	339.30
	Dry Sill	0.1	Uncarpeted	10346.61	.

	Wet Sill	516.0		59.35	59.35
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2211308	Entryway	70.7	Carpeted	146.35	146.35
	Dry Floor	16.7	Carpeted	110.28	78.14
	Wet Floor	84.0	Uncarpeted	43.73	43.73
	Dry Sill	99.4	Uncarpeted	309.15	309.15
	Wet Sill	72.2		1662.34	1662.34
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2211902	Entryway	574.9	Carpeted	67.67	67.67
	Dry Floor	29.7	Carpeted	60.27	60.27
	Wet Floor	480.8	Carpeted	54.66	54.66
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	5.8	Uncarpeted	470.95	226.83
	Dry Trough	0.1		.	.
	Wet Trough	514.9		426.00	426.00
2220507	Entryway	39.1	Carpeted	71.98	71.98
	Dry Floor	47.7	Carpeted	336.21	336.21
	Wet Floor	94.1	Uncarpeted	35.19	35.19
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2230100	Entryway	378.0	Uncarpeted	32.79	32.79
	Dry Floor	18.5	Carpeted	67.72	52.03
	Wet Floor	54.6	Uncarpeted	21.58	21.58
	Dry Sill	1.9	Uncarpeted	258.64	45.27
	Wet Sill	3.6	Uncarpeted	160.07	72.42
	Dry Trough	291.6	Uncarpeted	199.81	199.81
	Wet Trough	150.6	Uncarpeted	158.20	158.20
2230209	Entryway	17.0	Uncarpeted	150.33	107.92
	Dry Floor	9.1	Carpeted	156.90	83.69
	Wet Floor	19.4	Uncarpeted	33.60	26.95
	Dry Sill	1.2	Uncarpeted	310.40	25.65
	Wet Sill	3.0	Uncarpeted	334.54	148.88
	Dry Trough	36.1	Uncarpeted	5015.67	5015.67
	Wet Trough	0.1	Uncarpeted	7449.56	.
2230506	Entryway	55.6	Uncarpeted	65.16	65.16
	Dry Floor	10.5	Carpeted	70.66	39.49
	Wet Floor	28.9	Uncarpeted	114.41	114.41
	Dry Sill	3.7	Uncarpeted	1135.30	515.04
	Wet Sill	0.4		2582.96	.

	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
2240406	Entryway	657.1	Uncarpeted	1078.14	1078.14
	Dry Floor	388.0	Uncarpeted	472.40	472.40
	Wet Floor	456.4	Uncarpeted	616.03	616.03
	Dry Sill	38.9	Uncarpeted	3739.01	3739.01
	Wet Sill	305.5		9089.15	9089.15
	Dry Trough	83.0	Uncarpeted	4064.62	4064.62
	Wet Trough	0.1	Uncarpeted	.	.
2311108	Entryway	135.1	Carpeted	1439.79	1439.79
	Dry Floor	58.0	Uncarpeted	1855.25	1855.25
	Wet Floor	54.5	Carpeted	279.07	279.07
	Dry Sill	0.3	Uncarpeted	32419.38	.
	Wet Sill	1055.2	Uncarpeted	500.07	500.07
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	35.9		21327.28	21327.28
2332005	Entryway	24.1	Carpeted	2093.09	2093.09
	Dry Floor	17.9	Uncarpeted	896.46	669.92
	Wet Floor	95.4	Uncarpeted	442.04	442.04
	Dry Sill	1.9	Uncarpeted	4016.81	703.03
	Wet Sill	0.9	Uncarpeted	38966.11	2459.14
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	275.2		15538.53	15538.53
2343002	Entryway	2.4	Carpeted	3319.54	1047.93
	Dry Floor	9.0	Carpeted	160.95	85.57
	Wet Floor	10.2	Carpeted	479.80	265.40
	Dry Sill	3.2		9635.28	4311.48
	Wet Sill	0.1		.	.
	Dry Trough	39.7		10502.98	10502.98
	Wet Trough	53.6		1718.00	1718.00

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2343606	Entryway	8.3	Carpeted	164.55	85.54
	Dry Floor	8.1	Carpeted	945.25	488.27
	Wet Floor	31.1	Carpeted	58.22	58.22
	Dry Sill	2.2		578.47	145.18
	Wet Sill	0.1		.	.
	Dry Trough	85.1		5.17	5.17
	Wet Trough	0.1		.	.
2351500	Entryway	65.5	Carpeted	173.76	173.76
	Dry Floor	59.3	Carpeted	97.71	97.71
	Wet Floor	8.4	Uncarpeted	189.69	98.92
	Dry Sill	7.8	Uncarpeted	31305.13	16019.53
	Wet Sill	2.5	Uncarpeted	55.87	19.53
	Dry Trough	7.3	Uncarpeted	1006.31	507.03

	Wet Trough	280.1	Uncarpeted	70.18	70.18
2352201	Entryway	47.2	Carpeted	199.48	199.48
	Dry Floor	6.1	Carpeted	130.60	63.46
	Wet Floor	1.5	Uncarpeted	253.15	28.25
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2410801	Entryway	3.8	Carpeted	1742.59	792.73
	Dry Floor	1.2	Carpeted	1500.26	123.99
	Wet Floor	15.0	Uncarpeted	917.40	605.55
	Dry Sill	1.3		14485.26	1318.46
	Wet Sill	0.1		.	.
	Dry Trough	100.5	Uncarpeted	11942.36	11942.36
	Wet Trough	0.1	Uncarpeted	.	.
2421709	Entryway	118.4	Carpeted	185.26	185.26
	Dry Floor	30.1	Carpeted	114.81	114.81
	Wet Floor	2.2	Uncarpeted	113.81	28.56
	Dry Sill	637.0	Uncarpeted	159.18	159.18
	Wet Sill	4.2	Uncarpeted	123.17	56.66
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	16.2		402.37	279.08
2430403	Entryway	13.6	Uncarpeted	1049.88	656.00
	Dry Floor	6.5	Carpeted	269.01	132.29
	Wet Floor	2.8	Uncarpeted	580.15	247.89
	Dry Sill	1.0	Uncarpeted	155.20	10.68
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	311.0		6953.19	6953.19
2431807	Entryway	70.5	Carpeted	274.44	274.44
	Dry Floor	17.2	Carpeted	48.73	35.29
	Wet Floor	5.6	Uncarpeted	31.78	15.22
	Dry Sill	4.1	Uncarpeted	239.74	109.98
	Wet Sill	5.6	Uncarpeted	267.90	128.28
	Dry Trough	47.3	Uncarpeted	715.29	715.29
	Wet Trough	61.9	Uncarpeted	670.27	670.27

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2441509	Entryway	54.9	Uncarpeted	2186.17	2186.17
	Dry Floor	14.8	Uncarpeted	796.97	521.86
	Wet Floor	25.1	Carpeted	1306.72	1306.72
	Dry Sill	6.1	Uncarpeted	3002.21	1458.86
	Wet Sill	2.2	Uncarpeted	5173.31	1298.38
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	48.2		41429.38	41429.38

2441608	Entryway	6.7	Carpeted	1420.73	702.89
	Dry Floor	7.0	Carpeted	271.97	135.78
	Wet Floor	3.3	Uncarpeted	109.42	49.10
	Dry Sill	13.4	Uncarpeted	9651.69	5985.17
	Wet Sill	0.1	Uncarpeted	55871.70	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	101.7		46086.68	46086.68
2451805	Entryway	5.6	Carpeted	545.04	260.99
	Dry Floor	16.7	Carpeted	254.64	180.43
	Wet Floor	1.0		259.70	17.87
	Dry Sill	11.3	Uncarpeted	6592.53	3787.22
	Wet Sill	5.2	Uncarpeted	3004.50	1422.04
	Dry Trough	49.8	Uncarpeted	17659.88	17659.88
	Wet Trough	34.7	Uncarpeted	4084.97	4084.97
2452605	Entryway	26.6	Carpeted	423.98	423.98
	Dry Floor	8.6	Carpeted	484.85	254.46
	Wet Floor	9.8	Uncarpeted	134.08	73.18
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2511806	Entryway	55.5	Carpeted	49.13	49.13
	Dry Floor	1.7	Carpeted	121.93	16.93
	Wet Floor	12.1	Carpeted	120.50	71.22
	Dry Sill	1.2	Uncarpeted	315.10	26.04
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2520609	Entryway	17.4	Uncarpeted	1674.79	1223.71
	Dry Floor	5.3	Carpeted	145.64	69.13
	Wet Floor	4.7	Uncarpeted	158.44	73.92
	Dry Sill	0.4		559.37	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2520906	Entryway	245.5	Carpeted	363.89	363.89
	Dry Floor	144.6	Carpeted	242.53	242.53
	Wet Floor	154.4	Uncarpeted	326.71	326.71
	Dry Sill	62.3	Uncarpeted	276.75	276.75
	Wet Sill	41.3		301.53	301.53
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2521102	Entryway	26.0	Uncarpeted	90.39	90.39

	Dry Floor	96.2	Carpeted	141.92	141.92
	Wet Floor	15.8	Uncarpeted	13.12	8.95
	Dry Sill	322.7		200.19	200.19
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2521201	Entryway	124.4	Uncarpeted	224.71	224.71
	Dry Floor	218.9	Carpeted	160.21	160.21
	Wet Floor	19.7	Uncarpeted	201.46	164.02
	Dry Sill	0.7		92120.76	4932.02
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2521300	Entryway	31.1	Carpeted	206.35	206.35
	Dry Floor	80.0		140.65	140.65
	Wet Floor	169.7		143.72	143.72
	Dry Sill	7.5		142.17	72.07
	Wet Sill	0.1		565.17	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2531804	Entryway	0.1	Carpeted	.	.
	Dry Floor	1.5	Carpeted	505.51	56.42
	Wet Floor	19.6	Carpeted	74.39	60.26
	Dry Sill	0.1		5085.22	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2540102	Entryway	1403.4	Uncarpeted	126.07	126.07
	Dry Floor	156.8	Uncarpeted	1121.76	1121.76
	Wet Floor	46.1	Uncarpeted	1189.52	1189.52
	Dry Sill	63.6	Uncarpeted	1008.63	1008.63
	Wet Sill	4653.9	Uncarpeted	18.23	18.23
	Dry Trough	17.5	Uncarpeted	15312.99	11238.49
	Wet Trough	6.3	Uncarpeted	9525.45	4656.33
2540201	Entryway	25.7	Uncarpeted	302.48	302.48
	Dry Floor	9.1	Carpeted	418.80	223.37
	Wet Floor	4.7	Uncarpeted	315.86	147.37
	Dry Sill	137.8	Uncarpeted	178.79	178.79
	Wet Sill	0.8	Uncarpeted	885.97	51.42
	Dry Trough	262.4	Uncarpeted	277.32	277.32
	Wet Trough	3.4	Uncarpeted	1987.34	894.15
2541209	Entryway	629.0	Carpeted	186.89	186.89
	Dry Floor	146.3	Carpeted	55.48	55.48
	Wet Floor	7.6	Uncarpeted	76.19	38.75
	Dry Sill	21.1	Uncarpeted	3005.85	2629.97
	Wet Sill	12.2		1804.14	1070.21
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the

284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2541407	Entryway	797.8	Carpeted	373.18	373.18
	Dry Floor	33.2	Carpeted	543.96	543.96
	Wet Floor	5.7	Uncarpeted	285.87	137.29
	Dry Sill	1.0	Uncarpeted	1465.59	100.86
	Wet Sill	1.6	Uncarpeted	4898.71	608.67
	Dry Trough	189.7	Uncarpeted	1007.99	1007.99
	Wet Trough	126.1	Uncarpeted	574.71	574.71
2541506	Entryway	52.8	Uncarpeted	258.57	258.57
	Dry Floor	35.3	Uncarpeted	7284.40	7284.40
	Wet Floor	53.4	Uncarpeted	767.57	767.57
	Dry Sill	65.5	Uncarpeted	1471.65	1471.65
	Wet Sill	10.2		389.10	215.23
	Dry Trough	31.5	Uncarpeted	1413.84	1413.84
	Wet Trough	0.1	Uncarpeted	.	.
2541902	Entryway	8.6	Carpeted	121.67	63.86
	Dry Floor	5.6	Carpeted	128.91	61.73
	Wet Floor	1.1	Uncarpeted	457.07	34.42
	Dry Sill	11.7	Uncarpeted	1681.04	979.44
	Wet Sill	8.5		2284.44	1195.10
	Dry Trough	3.5	Uncarpeted	473.19	213.48
	Wet Trough	0.1	Uncarpeted	.	.
2542009	Entryway	38.3	Carpeted	167.56	167.56
	Dry Floor	36.2	Carpeted	344.02	344.02
	Wet Floor	20.2	Uncarpeted	437.72	365.42
	Dry Sill	148.7	Uncarpeted	1697.73	1697.73
	Wet Sill	11.7	Uncarpeted	1881.24	1096.09
	Dry Trough	43.8	Uncarpeted	2630.22	2630.22
	Wet Trough	25.8	Uncarpeted	2960.68	2960.68
2550309	Entryway	9.8	Uncarpeted	81.49	44.48
	Dry Floor	3.7	Carpeted	211.82	96.09
	Wet Floor	2.3	Uncarpeted	181.06	51.12
	Dry Sill	9.2	Uncarpeted	826.28	442.14
	Wet Sill	2.2		552.97	138.78
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2551000	Entryway	6.4	Uncarpeted	73.19	35.89
	Dry Floor	32.5	Carpeted	57.27	57.27
	Wet Floor	3.8	Uncarpeted	76.52	34.81
	Dry Sill	10.8	Uncarpeted	107.47	60.68
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2551802	Entryway	250.8	Carpeted	149.18	149.18
	Dry Floor	16.1	Uncarpeted	41.59	28.72
	Wet Floor	0.3	Uncarpeted	825.16	.



Dry Sill	124.1	Uncarpeted	61.47	61.47
Wet Sill	1.6	Uncarpeted	254.14	31.58
Dry Trough	0.1	Uncarpeted	.	.
Wet Trough	454.8		189.79	189.79

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2552107	Entryway	1.2	Uncarpeted	1418.81	117.26
	Dry Floor	21.7	Carpeted	40.81	36.89
	Wet Floor	1.2	Uncarpeted	344.87	28.50
	Dry Sill	3.6	Uncarpeted	155.78	70.48
	Wet Sill	0.1		2012.77	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2610103	Entryway	36.8	Carpeted	336.38	336.38
	Dry Floor	5.8	Carpeted	218.92	105.44
	Wet Floor	33.3	Carpeted	255.36	255.36
	Dry Sill	6.9		635.01	316.07
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2611101	Entryway	0.1		.	.
	Dry Floor	6.1		117.15	56.93
	Wet Floor	0.9		411.89	25.99
	Dry Sill	4.0		676.06	309.27
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.2		4042.32	.
2620508	Entryway	11.8		239.03	139.77
	Dry Floor	4.6		162.47	75.59
	Wet Floor	5.2		357.39	169.16
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2621704	Entryway	49.7	Carpeted	206.10	206.10
	Dry Floor	31.6	Carpeted	166.99	166.99
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	7.5		189.00	95.82
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2622603	Entryway	5.5	Carpeted	308.52	147.30
	Dry Floor	0.2	Carpeted	1448.53	.
	Wet Floor	681.1	Uncarpeted	0.84	0.84
	Dry Sill	20.1		67.43	56.01

	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2623007	Entryway	2.6		314.38	120.02
	Dry Floor	3.8		302.23	137.49
	Wet Floor	0.1		.	.
	Dry Sill	4.3		209.34	96.57
	Wet Sill	0.4		931.20	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2650208	Entryway	17.5	Carpeted	319.27	234.32
	Dry Floor	32.1	Carpeted	31.27	31.27
	Wet Floor	8.7	Uncarpeted	68.98	36.32
	Dry Sill	0.3		45525.09	.
	Wet Sill	3.4		188.67	84.89
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2651206	Entryway	197.5	Uncarpeted	1.83	1.83
	Dry Floor	0.9	Uncarpeted	8967.06	565.91
	Wet Floor	65.8	Uncarpeted	54.09	54.09
	Dry Sill	33.7		383.78	383.78
	Wet Sill	13.2		365.27	224.81
	Dry Trough	4.3		2815.24	1298.73
	Wet Trough	6.1		2679.94	1302.26
2651800	Entryway	61.4	Uncarpeted	362.30	362.30
	Dry Floor	103.2	Uncarpeted	425.09	425.09
	Wet Floor	29.8	Uncarpeted	381.92	381.92
	Dry Sill	1.1		1006.44	75.78
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2652303	Entryway	2.9		536.15	237.96
	Dry Floor	7.0		152.70	76.24
	Wet Floor	28.0		325.49	325.49
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	218.5		369.13	369.13
2710101	Entryway	10.8	Carpeted	662.87	374.25
	Dry Floor	45.7	Carpeted	236.21	236.21
	Wet Floor	1.0	Uncarpeted	2375.24	163.46
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	0.1		.	.

	Dry Trough	46.8		198.73	198.73
	Wet Trough	0.1	Uncarpeted	.	.
2711109	Entryway	134.4	Carpeted	137.17	137.17
	Dry Floor	100.9	Carpeted	120.09	120.09
	Wet Floor	11.5	Uncarpeted	138.00	79.84
	Dry Sill	44.1		170.86	170.86
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2711505	Entryway	180.3	Carpeted	224.05	224.05
	Dry Floor	123.7	Carpeted	187.56	187.56
	Wet Floor	16.8	Uncarpeted	310.83	221.19
	Dry Sill	0.1	Uncarpeted	.	.
	Wet Sill	18.5		5178.64	3978.93
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2721009	Entryway	82.6	Carpeted	260.71	260.71
	Dry Floor	33.7	Carpeted	419.35	419.35
	Wet Floor	32.8	Carpeted	351.11	351.11
	Dry Sill	71.7		1983.53	1983.53
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	26.3	Uncarpeted	2689.40	2689.40
	Wet Trough	53.1	Uncarpeted	32617.62	32617.62
2730703	Entryway	7.1	Carpeted	329.22	164.86
	Dry Floor	31.8	Carpeted	66.75	66.75
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	0.8	Uncarpeted	2335.81	135.58
	Wet Sill	5.7	Uncarpeted	289.69	139.12
	Dry Trough	25.4	Uncarpeted	294.74	294.74
	Wet Trough	118.3	Uncarpeted	167.93	167.93
2731503	Entryway	85.9	Carpeted	136.87	136.87
	Dry Floor	16.3	Carpeted	188.73	131.46
	Wet Floor	65.6	Uncarpeted	137.55	137.55
	Dry Sill	21.4	Uncarpeted	1937.45	1722.72
	Wet Sill	20.6		465.55	396.73
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2731800	Entryway	39.0	Uncarpeted	334.70	334.70
	Dry Floor	651.5	Uncarpeted	100.79	100.79
	Wet Floor	8.4		207.26	108.08
	Dry Sill	115.6		509.88	509.88
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.

	Wet Trough	0.1		.	.
2751402	Entryway	3.1	Carpeted	705.15	314.67
	Dry Floor	8.2	Carpeted	132887.36	68861.07
	Wet Floor	3.5	Uncarpeted	114281.43	51559.37
	Dry Sill	108.3	Uncarpeted	89.55	89.55
	Wet Sill	0.4		2928.99	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2810307	Entryway	3.8	Carpeted	1044.42	475.12
	Dry Floor	3.8	Carpeted	1044.42	475.12
	Wet Floor	29.5	Uncarpeted	49.43	49.43
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	281.8		821.01	821.01
	Wet Trough	0.1	Uncarpeted	.	.
2812105	Entryway	9.9	Carpeted	275.43	150.83
	Dry Floor	9.9	Carpeted	275.43	150.83
	Wet Floor	30.9	Uncarpeted	128.44	128.44
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	155.1		1090.99	1090.99
	Wet Trough	0.1	Uncarpeted	.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2812204	Entryway	63.3	Carpeted	535.30	535.30
	Dry Floor	8.6	Carpeted	317.07	166.40
	Wet Floor	1.3	Uncarpeted	267.92	24.39
	Dry Sill	5.1	Uncarpeted	534.66	252.33
	Wet Sill	7.1	Uncarpeted	732.03	366.58
	Dry Trough	232.7	Uncarpeted	287.75	287.75
	Wet Trough	255.6	Uncarpeted	354.11	354.11
2822005	Entryway	3.8	Carpeted	302.23	137.49
	Dry Floor	51.7	Carpeted	74.05	74.05
	Wet Floor	40.8	Carpeted	48.69	48.69
	Dry Sill	9.9	Carpeted	2435.11	1333.51
	Wet Sill	31.8		732.07	732.07
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.
2830602	Entryway	56.0	Carpeted	319.64	319.64
	Dry Floor	22.1	Carpeted	67.42	62.31
	Wet Floor	42.5	Carpeted	28.48	28.48
	Dry Sill	2.9		1088.18	482.97
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1		.	.

2831006	Entryway	16.3	Carpeted	71.09	49.52
	Dry Floor	3.5		112.04	50.55
	Wet Floor	30.2	Carpeted	23.30	23.30
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	16.8		50.50	35.94
	Wet Trough	0.1		.	.
2831709	Entryway	11.8	Uncarpeted	77.16	45.12
	Dry Floor	9.5	Carpeted	162.28	87.69
	Wet Floor	98.0	Carpeted	64.40	64.40
	Dry Sill	0.8		2315.05	134.37
	Wet Sill	0.1		.	.
	Dry Trough	135.7	Carpeted	1555.42	1555.42
	Wet Trough	0.1	Carpeted	.	.
2832004	Entryway	8.9	Uncarpeted	515.01	272.91
	Dry Floor	56.4	Carpeted	273.34	273.34
	Wet Floor	3.2	Uncarpeted	1063.76	476.00
	Dry Sill	0.1	Uncarpeted	434.56	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	26.4		1258.05	1258.05
2832103	Entryway	6.4	Carpeted	227.82	111.70
	Dry Floor	6.4	Carpeted	227.82	111.70
	Wet Floor	8.2	Carpeted	95.79	49.63
	Dry Sill	0.1		.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1		.	.
	Wet Trough	32.8		1609.91	1609.91

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2840106	Entryway	0.1		.	.
	Dry Floor	0.1		.	.
	Wet Floor	0.1		.	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2840205	Entryway	0.1		.	.
	Dry Floor	0.1		.	.
	Wet Floor	0.1		.	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
2840403	Entryway	38.0	Carpeted	1633.68	1633.68

	Dry Floor	18.5	Uncarpeted	62.08	47.70
	Wet Floor	2.7	Uncarpeted	172.44	70.49
	Dry Sill	7.1	Uncarpeted	268.14	134.28
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2841203	Entryway	13.7	Uncarpeted	118.57	74.37
	Dry Floor	88.2	Carpeted	308.52	308.52
	Wet Floor	39.2	Carpeted	3853.58	3853.58
	Dry Sill	0.1	Carpeted	.	.
	Wet Sill	111.5		2756.00	2756.00
	Dry Trough	177.1	Carpeted	3154.81	3154.81
	Wet Trough	0.1	Carpeted	.	.
2841401	Entryway	75.7	Carpeted	71.07	71.07
	Dry Floor	36.2	Carpeted	41.44	41.44
	Wet Floor	6.1	Uncarpeted	57.67	28.02
	Dry Sill	59.8	Uncarpeted	1193.84	1193.84
	Wet Sill	0.5	Uncarpeted	879.46	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	55.6	Carpeted	1079.32	1079.32
2841500	Entryway	83.3	Carpeted	144.08	144.08
	Dry Floor	6.6	Carpeted	152.06	75.00
	Wet Floor	23.6	Carpeted	37.70	37.70
	Dry Sill	0.3	Uncarpeted	1062.25	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1	Carpeted	.	.
	Wet Trough	0.1	Carpeted	5276.77	.
2910107	Entryway	15.2	Carpeted	747.38	497.31
	Dry Floor	77.8	Carpeted	240.02	240.02
	Wet Floor	30.7	Carpeted	70.38	70.38
	Dry Sill	0.1	Uncarpeted	36722.14	.
	Wet Sill	0.1		5509.65	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
2931202	Entryway	101.9	Uncarpeted	392.95	392.95
	Dry Floor	80.2	Uncarpeted	248.99	248.99
	Wet Floor	12.6	Uncarpeted	199.54	120.10
	Dry Sill	26.1		697.70	697.70
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2931608	Entryway	6.7	Uncarpeted	2412.86	1193.73
	Dry Floor	61.2	Carpeted	225.04	225.04

	Wet Floor	384.8	Uncarpeted	899.54	899.54
	Dry Sill	56.1	Uncarpeted	1672.11	1672.11
	Wet Sill	27.2		2851.59	2851.59
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2940401	Entryway	1.5	Carpeted	920.22	102.70
	Dry Floor	1.4	Carpeted	570.71	57.42
	Wet Floor	1.4	Uncarpeted	363.23	36.54
	Dry Sill	0.1		13413.62	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
2940708	Entryway	4.9	Uncarpeted	1030.71	483.65
	Dry Floor	13.9	Uncarpeted	287.30	181.59
	Wet Floor	10.6	Uncarpeted	254.88	142.92
	Dry Sill	10.9	Uncarpeted	471.21	266.96
	Wet Sill	1.8		845.89	131.66
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
3011103	Entryway	178.6	Uncarpeted	1308.53	1308.53
	Dry Floor	49.4	Carpeted	923.07	923.07
	Wet Floor	25.6	Uncarpeted	2104.20	2104.20
	Dry Sill	6.2	Uncarpeted	14294.90	6967.01
	Wet Sill	1.7	Uncarpeted	104367.71	14491.44
	Dry Trough	50.5	Uncarpeted	109165.57	109165.57
	Wet Trough	56.4	Uncarpeted	44369.80	44369.80
3011509	Entryway	3.3	Carpeted	1195.19	536.27
	Dry Floor	3.1	Carpeted	992.38	442.85
	Wet Floor	9.0	Uncarpeted	406.65	216.19
	Dry Sill	6.7		643.86	318.54
	Wet Sill	0.1		.	.
	Dry Trough	0.1	Uncarpeted	.	.
	Wet Trough	0.1		.	.
3011905	Entryway	8.1	Carpeted	2511.49	1297.32
	Dry Floor	7.5	Carpeted	371.91	188.55
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	12.0	Uncarpeted	2309.75	1360.30
	Wet Sill	26.5	Uncarpeted	18493.37	18493.37
	Dry Trough	150.7	Uncarpeted	3934.92	3934.92
	Wet Trough	5.3	Uncarpeted	63101.24	29952.87

Table B-1. Original and Revised Dust-Lead Concentrations for All Floor, Window Sill, and Window Trough Samples in the 284 Privately-Owned Houses in the HUD National Survey

House ID	Sampling Location	Dust Tap Weight (mg)	Surface Sampled	Original Dust-Lead Concentration (µg/g)	Revised Dust-Lead Concentration (µg/g)
3020401	Entryway	74.9	Uncarpeted	.	.
	Dry Floor	24.8	Carpeted	410.52	410.52
	Wet Floor	14.5	Carpeted	286.47	185.36

	Dry Sill	17.2	Uncarpeted	3680.55	2665.61
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	123.4	Uncarpeted	8830.44	8830.44
	Wet Trough	16.8	Uncarpeted	83633.26	59515.96
3040706	Entryway	5.1	Uncarpeted	348.88	164.65
	Dry Floor	2.5	Carpeted	655.36	229.13
	Wet Floor	2.1	Carpeted	829.02	184.50
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1		.	.
3050101	Entryway	6.5	Carpeted	929.24	456.96
	Dry Floor	2.3	Carpeted	2046.60	577.81
	Wet Floor	0.7	Uncarpeted	1438.09	76.99
	Dry Sill	0.1		.	.
	Wet Sill	0.1	Uncarpeted	.	.
	Dry Trough	0.1		.	.
	Wet Trough	100.4		666.93	666.93
3051000	Entryway	1.1	Carpeted	2021.70	152.23
	Dry Floor	0.1	Carpeted	.	.
	Wet Floor	0.1	Uncarpeted	.	.
	Dry Sill	0.1		.	.
	Wet Sill	0.1		.	.
	Dry Trough	0.1		.	.
	Wet Trough	0.1	Uncarpeted	.	.



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16. Abstract (Limit 200 words)  Analyses being conducted to support the rule-making for Section 403 of Title IV of the Toxic Substances and Control Act require information on environmental-lead levels in the national housing stock. The primary source of national environmental-lead levels is the HUD National Survey; however, an issue regarding the quality of dust-lead concentrations for dust samples collected in the HUD National Survey was raised. Only the weight of dust collected in the vacuum cassette was measured; rather than also measuring the amount of dust remaining on the vacuum filter. Dust-lead concentrations were calculated as the total lead found in the tapped-out dust and residual dust on the filter divided by the weight of the tapped-out dust. The dust-lead concentration will be biased if the tapped-out weight underestimates the total dust weight of the sample. The objective of this study was to assess the potential bias and define a way to adjust for it.  Laboratory experiments were conducted to generate a database for understanding and addressing the bias, and a regression model developed for correcting the bias was fitted to the laboratory data. Dust-lead concentrations reported in the HUD National Survey were then adjusted using correction factors predicted by the regression model.			
17. Document Analysis  a. Descriptors  Lead, Dust Sample, Dust-Lead Concentration, Bias, Statistical Analysis  b. Identifiers/Open-Ended Terms  Blue Nozzle Vacuum, Tap Weight, Wipe Sample  c. COSATI Field/Group			

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