

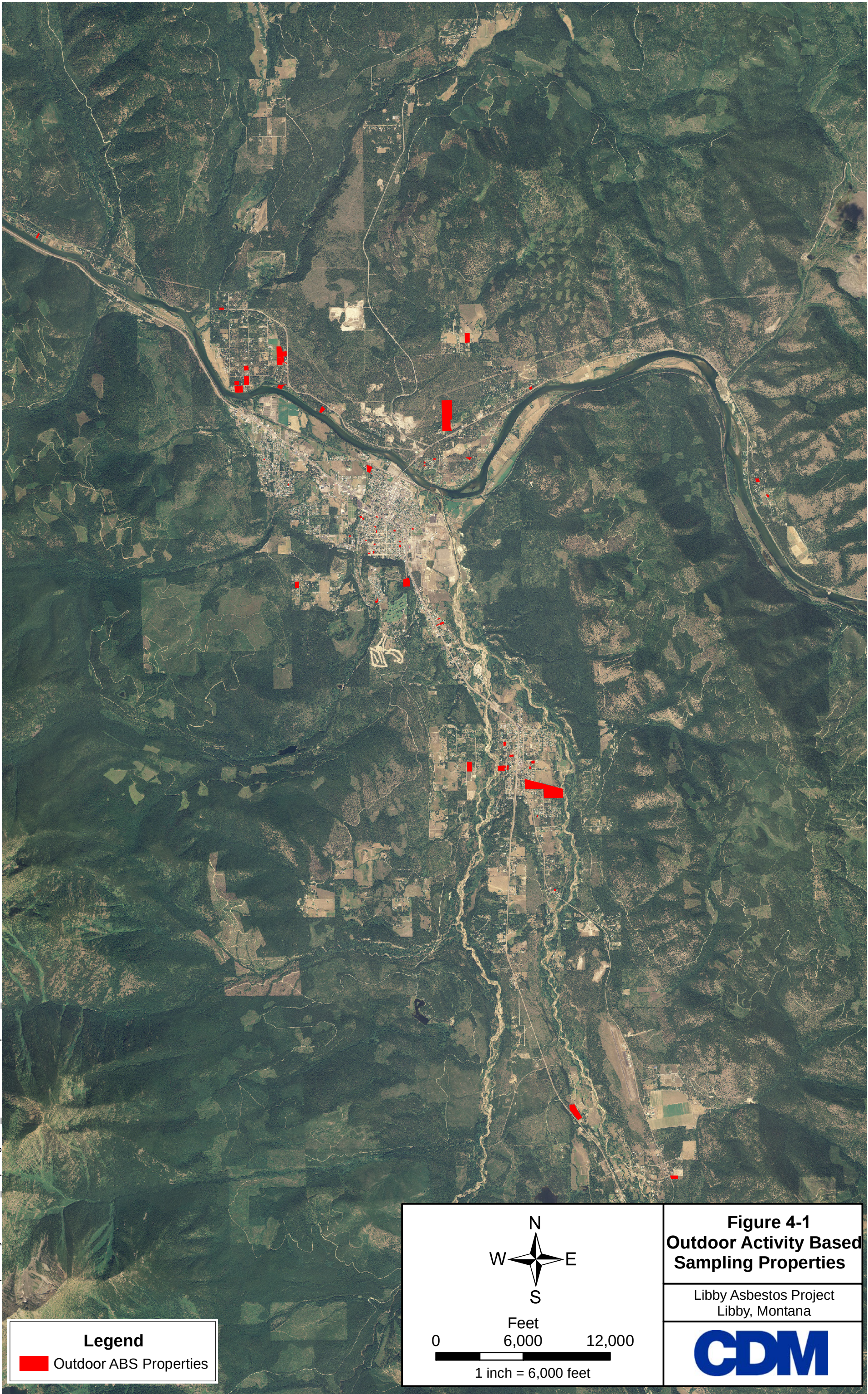
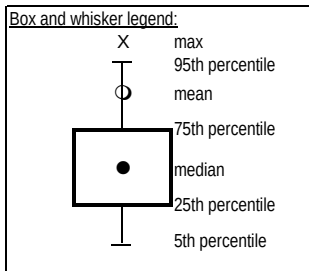
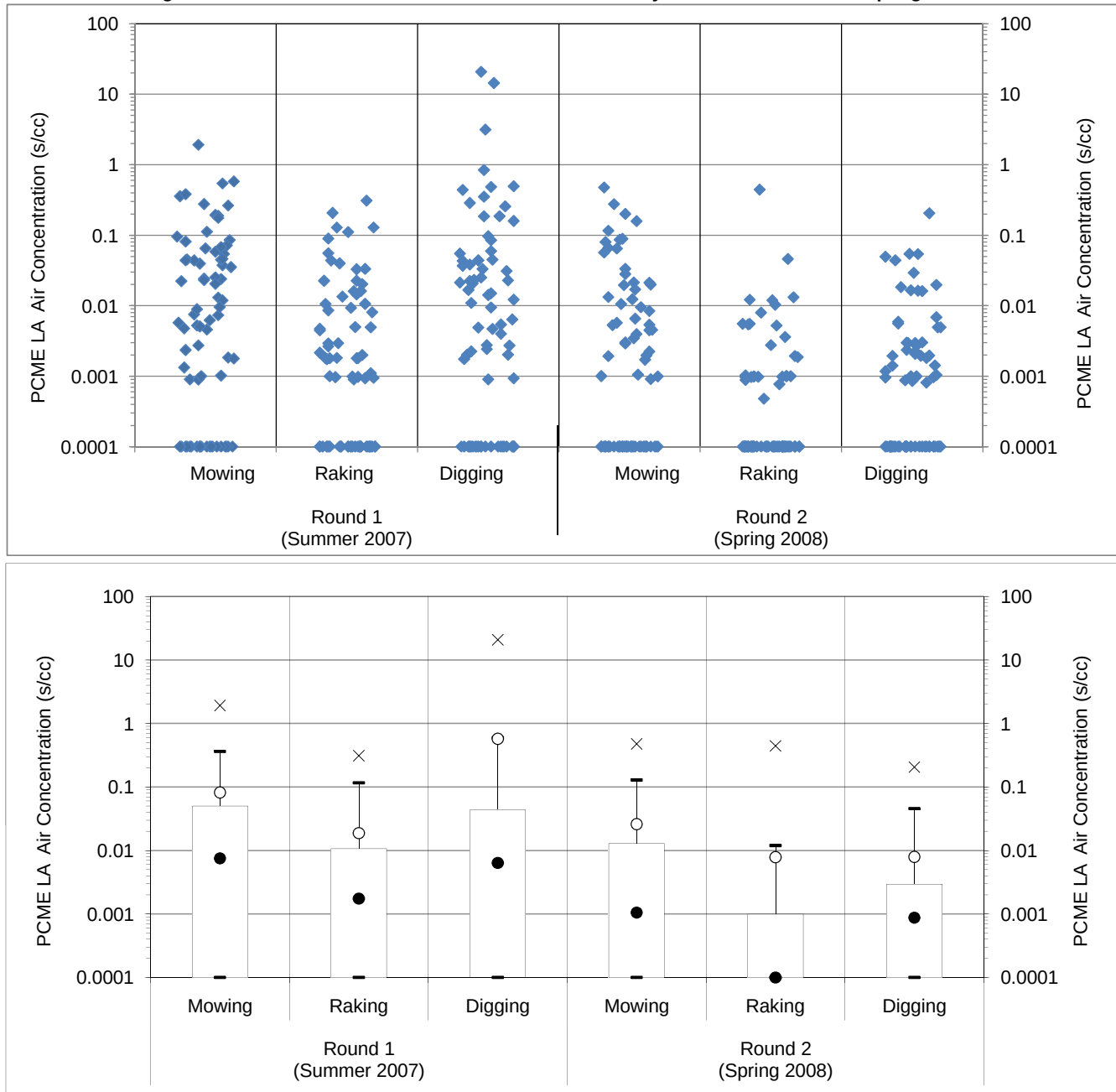


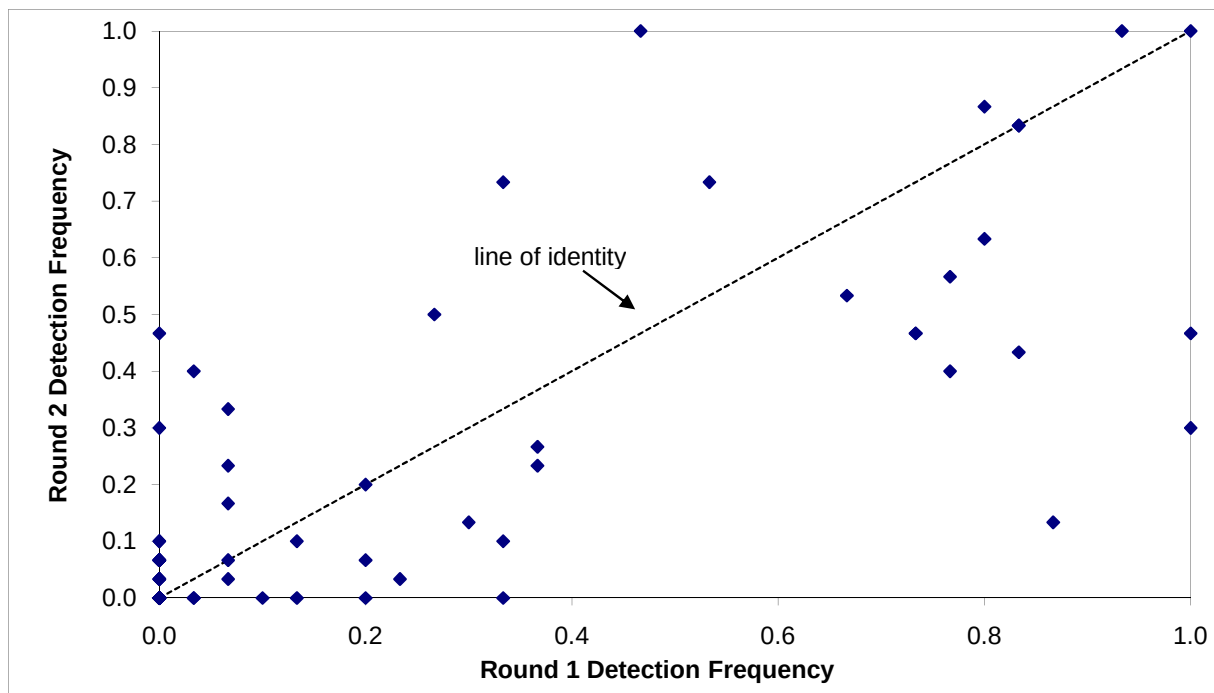
Figure 4-2. Outdoor ABS Air Concentrations Stratified by ABS Scenario and Sampling Round



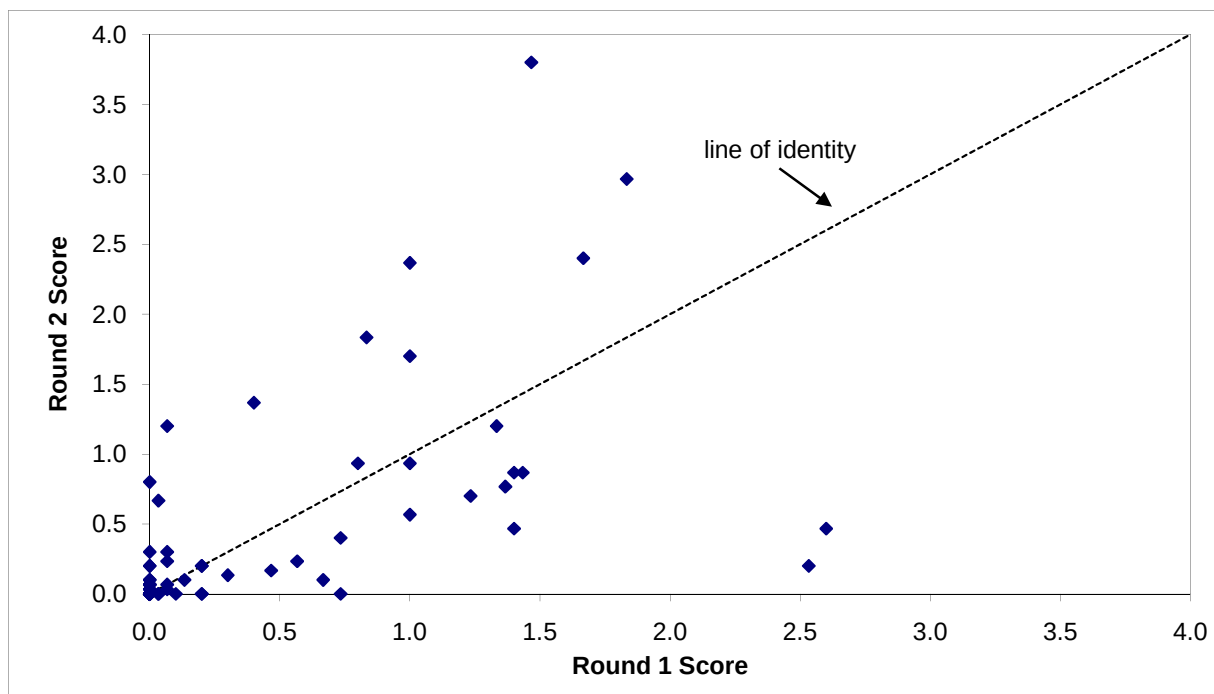
Round	Soil Bin	ABS Air Data								
		N	DF	Max (s/cc)	Ave (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
Round 1 (Summer 2007)	Mowing	75	73%	1.9	0.082	0.36	0.05	0.0075	0	0
	Raking	75	61%	0.31	0.019	0.12	0.011	0.0017	0	0
	Digging	75	68%	21	0.57	0.6	0.044	0.0064	0	0
Round 2 (Spring 2008)	Mowing	75	55%	0.48	0.026	0.13	0.013	0.001	0	0
	Raking	75	37%	0.44	0.0079	0.012	0.001	0	0	0
	Digging	75	53%	0.21	0.0079	0.046	0.003	0.00087	0	0

Figure 4-3
Between Round Variability in Visible Inspection Data

Panel A: Visible Vermiculite Detection Frequency



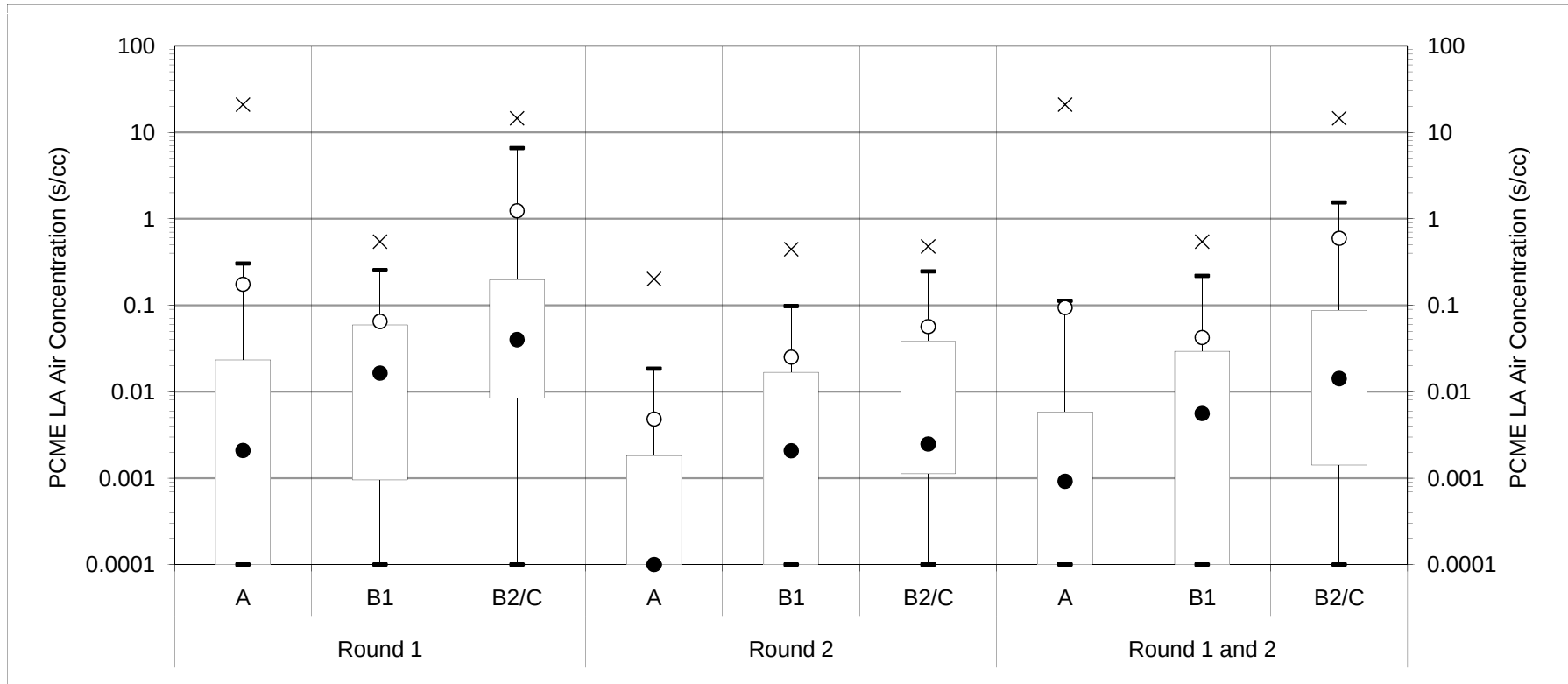
Panel B: Visible Vermiculite Weighted Score



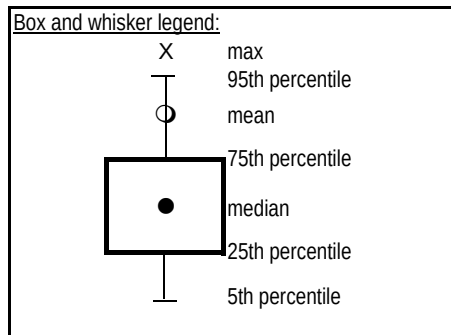
One visible vermiculite weighted score is off-scale (Round 1 = 3.7, Round 2 = 7.5)

Restricted to 30-pt composite samples.

Figure 4-4. Outdoor ABS Air Concentrations Stratified by PLM-VE Results

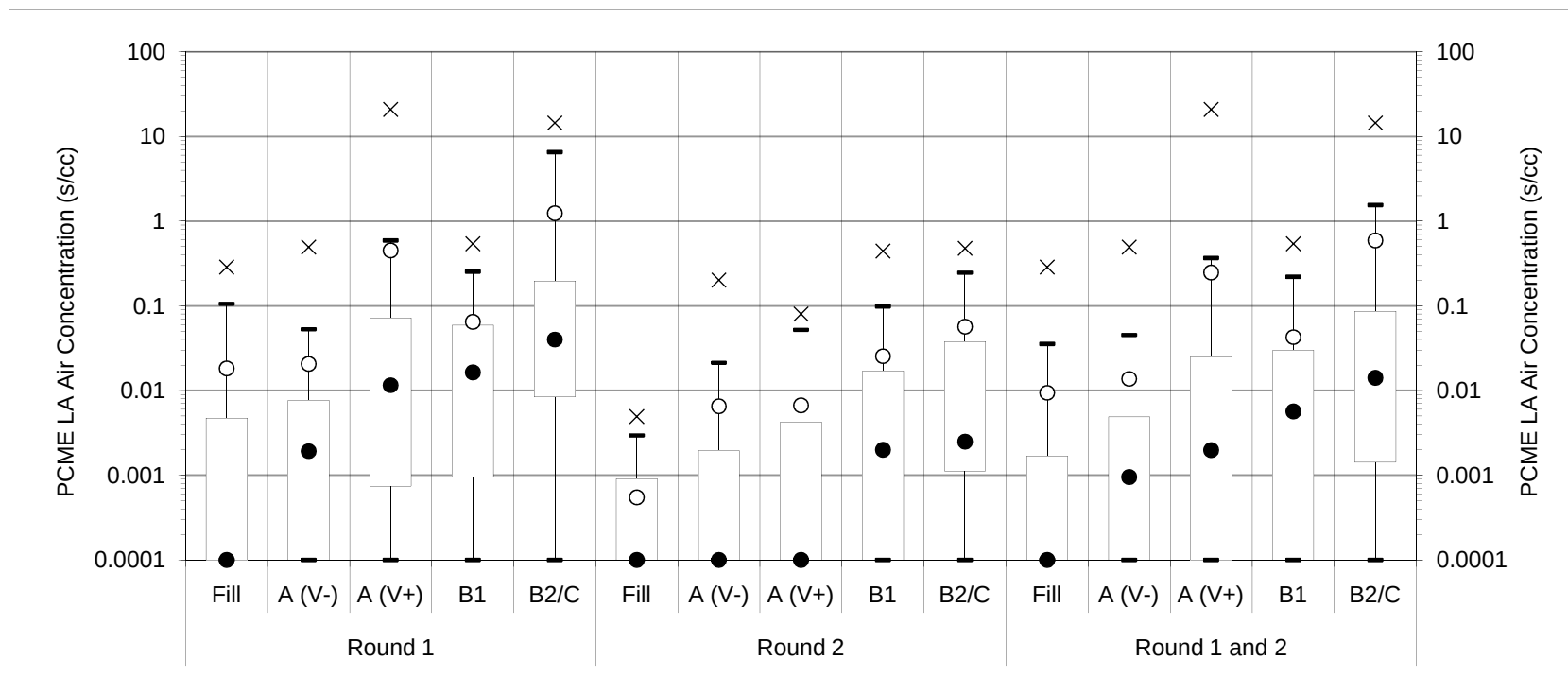


For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).

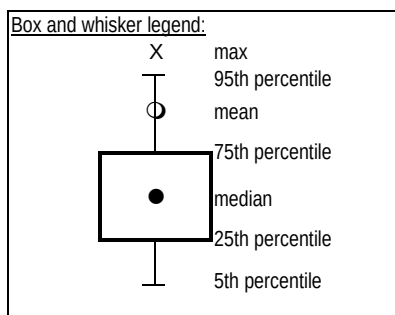


Round	Soil Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
1	Bin A	168	63%	21	0.17	0.3	0.023	0.0021	0	0
	Bin B1	42	81%	0.54	0.065	0.25	0.059	0.016	0.001	0
	Bin B2/C	15	80%	14	1.2	6.5	0.2	0.04	0.0084	0
2	Bin A	152	41%	0.2	0.0048	0.019	0.0018	0	0	0
	Bin B1	55	56%	0.44	0.025	0.1	0.017	0.0021	0	0
	Bin B2/C	18	83%	0.48	0.057	0.25	0.038	0.0025	0.0011	0
1 and 2	Bin A	320	53%	21	0.094	0.11	0.0058	0.00092	0	0
	Bin B1	97	67%	0.54	0.042	0.22	0.029	0.0056	0	0
	Bin B2/C	33	82%	14	0.59	1.5	0.087	0.014	0.0014	0

Figure 4-5. Outdoor ABS Air Concentrations Stratified by PLM-VE/Visible Vermiculite Ranking

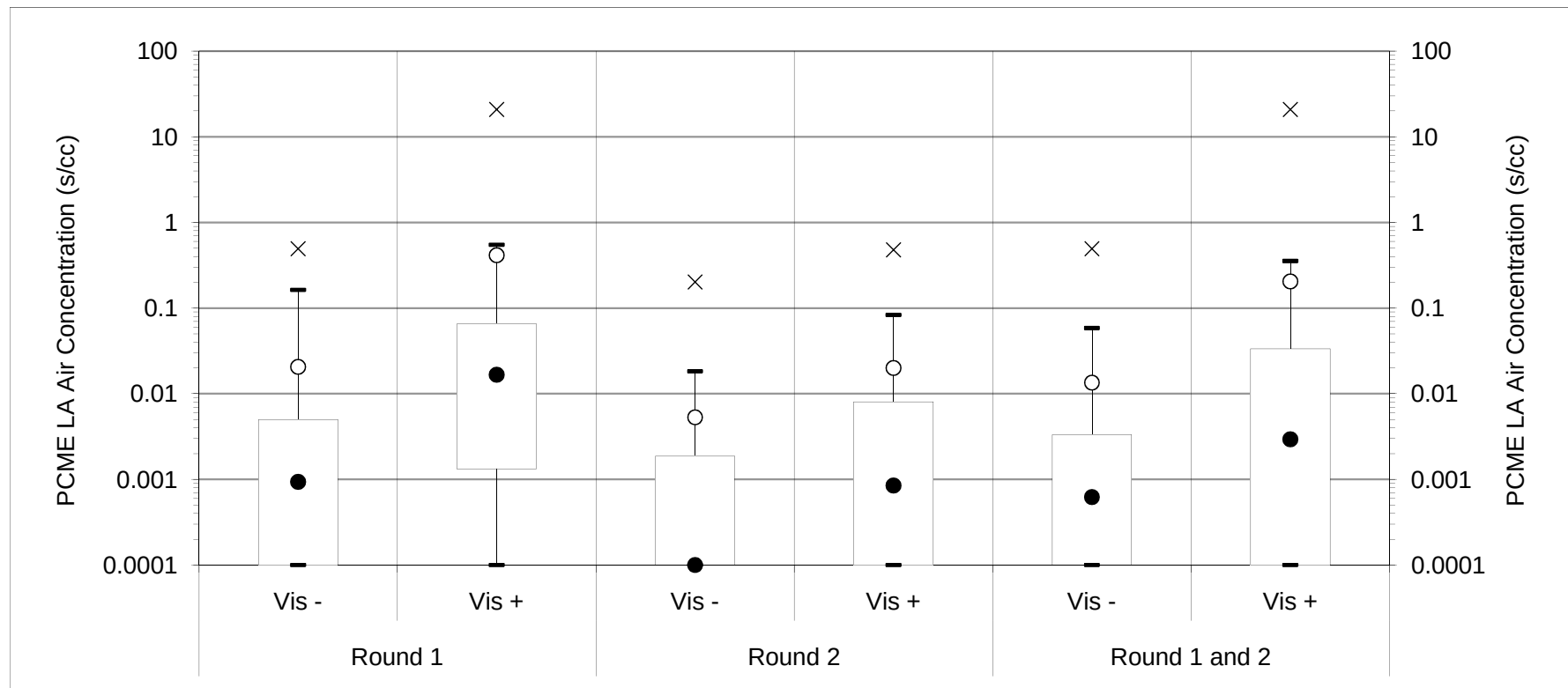


For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).



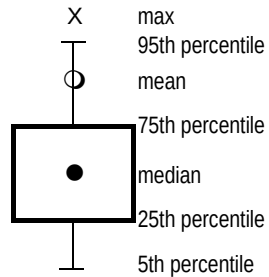
Round	Soil Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
1	Clean Fill	45	44%	0.29	0.018	0.11	0.0047	0	0	0
	Bin A Vis -	60	63%	0.49	0.021	0.053	0.0076	0.0019	0	0
	Bin A Vis +	60	75%	21	0.45	0.59	0.072	0.012	0.00074	0
	Bin B1	42	81%	0.54	0.065	0.25	0.059	0.016	0.001	0
	Bin B2/C	15	80%	14	1.2	6.5	0.2	0.04	0.0084	0
2	Clean Fill	45	27%	0.0049	0.00055	0.0029	0.00091	0	0	0
	Bin A Vis -	57	49%	0.2	0.0065	0.021	0.0019	0	0	0
	Bin A Vis +	51	47%	0.08	0.0067	0.052	0.0042	0	0	0
	Bin B1	54	56%	0.44	0.025	0.1	0.017	0.002	0	0
	Bin B2/C	18	83%	0.48	0.057	0.25	0.038	0.0025	0.0011	0
1 and 2	Clean Fill	90	36%	0.29	0.0094	0.035	0.0017	0	0	0
	Bin A Vis -	117	56%	0.49	0.014	0.045	0.0049	0.00095	0	0
	Bin A Vis +	111	62%	21	0.25	0.37	0.025	0.002	0	0
	Bin B1	96	67%	0.54	0.043	0.22	0.03	0.0057	0	0
	Bin B2/C	33	82%	14	0.59	1.5	0.087	0.014	0.0014	0

Figure 4-6. Outdoor ABS Air Concentrations Stratified by Visible Vermiculite Ranking^a



For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).

Box and whisker legend:



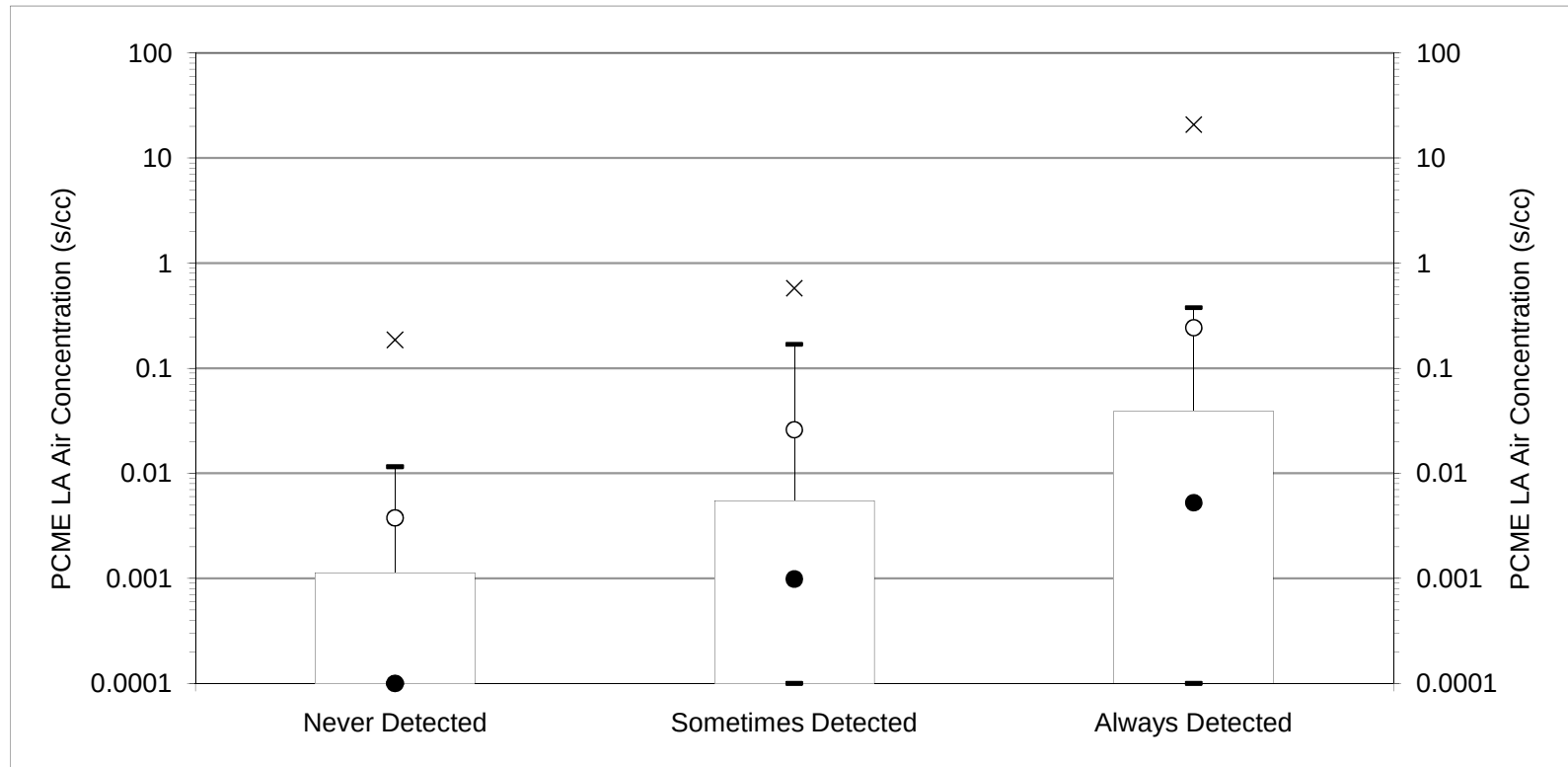
Round	Vis Rank	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
1	Vis -	105	55%	0.49	0.021	0.16	0.005	0.00094	0	0
	Vis +	117	78%	21	0.41	0.55	0.065	0.017	0.0013	0
2	Vis -	93	45%	0.2	0.0053	0.018	0.0019	0	0	0
	Vis +	132	51%	0.48	0.02	0.083	0.0081	0.00085	0	0
1 and 2	Vis -	198	51%	0.49	0.013	0.058	0.0033	0.00062	0	0
	Vis +	249	63%	21	0.2	0.35	0.033	0.0029	0	0

^a Vis (-) = visible vermiculite was not detected at any sample node.

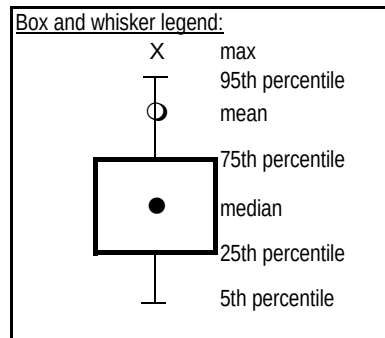
Vis (+) = visible vermiculite was detected at one or more sampling nodes.

Note: Results from 1573 Kootenai River Rd are not included in Round 1 because visible vermiculite information was not reported.

Figure 4-7. Outdoor ABS Air Concentrations Stratified by Visual Vermiculite Detection Status Across Rounds



For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).



Visible Detection Status	ABS Air Data								
	N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
					0.95	0.75	0.5	0.25	0.05
Never Detected	96	39%	0.19	0.0038	0.012	0.0011	0	0	0
Sometimes Detected	144	58%	0.58	0.026	0.17	0.0055	0.001	0	0
Always Detected	204	67%	21	0.24	0.38	0.039	0.0052	0	0

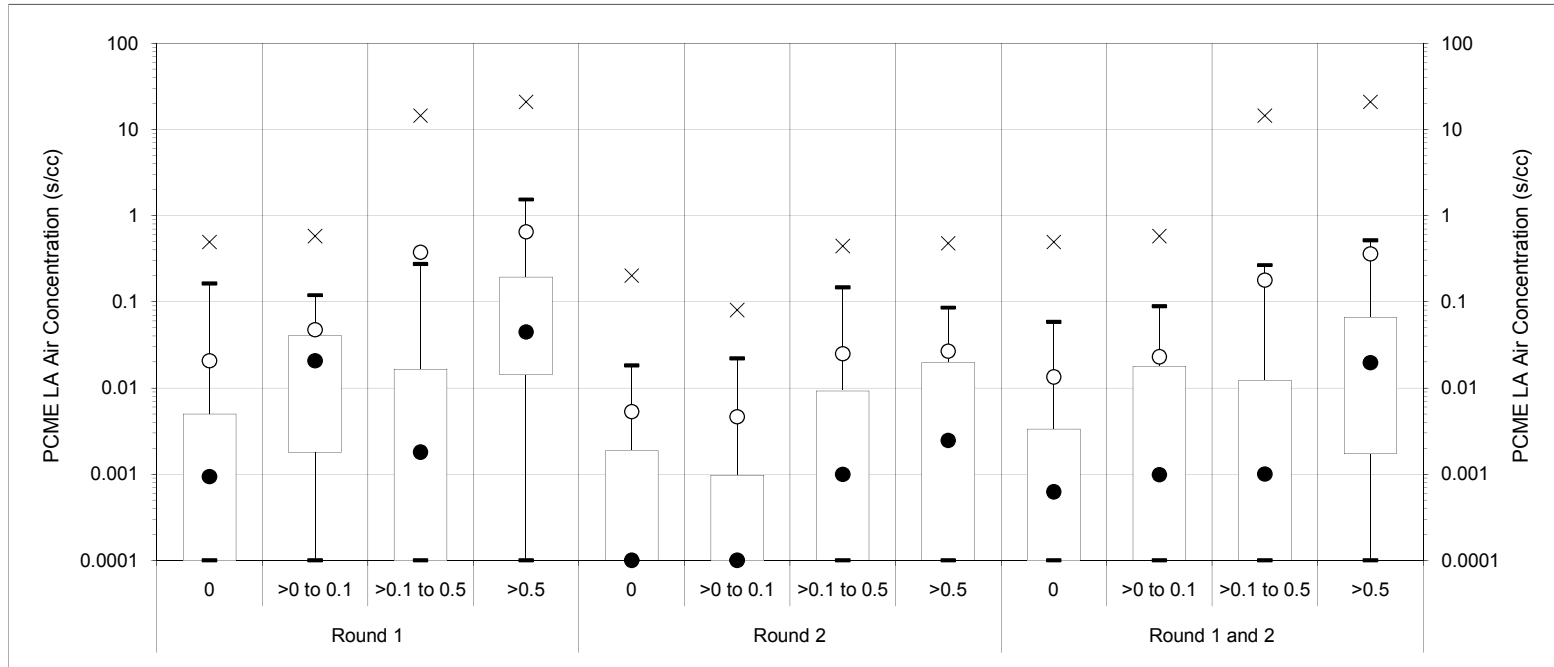
Never Detected: Visual vermiculite estimates always rank the ABS area as non-detect for LA.

Sometimes Detected: One of the sampling rounds ranked the ABS area as non-detect by visual vermiculite estimates, but the other round differed.

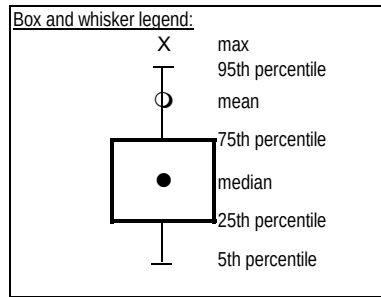
Always Detected: The ABS area has never been ranked as non-detect by visual vermiculite estimates.

Note: Results from 1573 Kootenai River Rd are not included because visible vermiculite information was not reported in Round 1.

Figure 4-8. Outdoor ABS Air Concentrations Stratified by Visible Detection Frequency Ranking



For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).



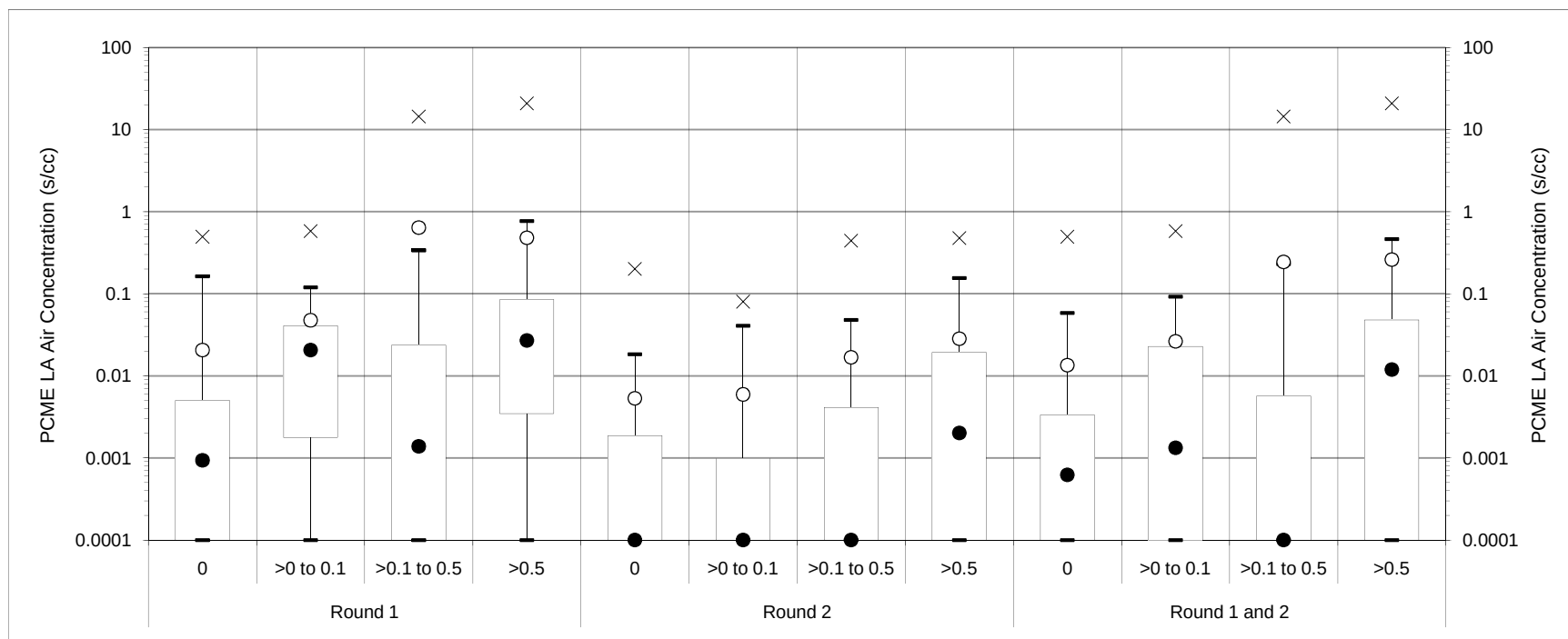
Round	Soil Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
1	0	105	55%	0.49	0.021	0.16	0.005	0.00094	0	0
	>0 to 0.1	27	85%	0.58	0.048	0.12	0.041	0.021	0.0018	0
	>0.1 to 0.5	42	57%	14	0.38	0.28	0.017	0.0018	0	0
	>0.5	48	92%	21	0.65	1.5	0.19	0.045	0.014	0
2	0	93	45%	0.2	0.0053	0.018	0.0019	0	0	0
	>0 to 0.1	36	28%	0.08	0.0046	0.022	0.001	0	0	0
	>0.1 to 0.5	54	54%	0.44	0.025	0.15	0.0093	0.001	0	0
	>0.5	42	67%	0.48	0.027	0.086	0.02	0.0025	0	0
1 and 2	0	198	51%	0.49	0.013	0.058	0.0033	0.00062	0	0
	>0 to 0.1	63	52%	0.58	0.023	0.089	0.018	0.001	0	0
	>0.1 to 0.5	96	55%	14	0.18	0.27	0.012	0.001	0	0
	>0.5	90	80%	21	0.36	0.52	0.066	0.02	0.0017	0

Detection Frequency Bins:

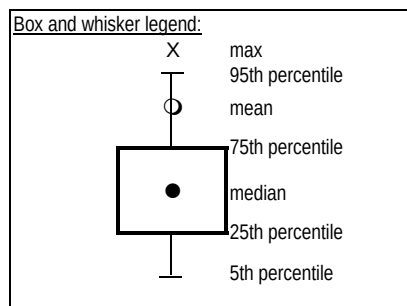
- 0 no visible vermiculite present
- >0 to 0.1 visible vermiculite present in ≤ 10% of visual inspection points
- >0.1 to 0.5 visible vermiculite present in ≤ 50% of visual inspection points
- >0.5 visible vermiculite present in more than 50% of visual inspection points

Note: Results from 1573 Kootenai River Rd are not included in Round 1 because visible vermiculite information was not reported.

Figure 4-9. Outdoor ABS Air Concentrations Stratified by Visible Vermiculite Weighted Score Ranking



For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).



Weighted Score Bins:

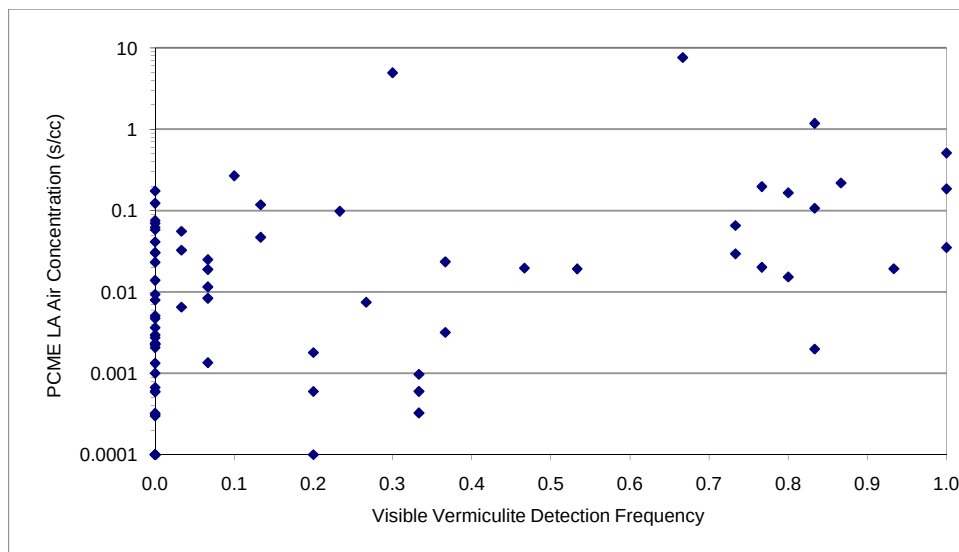
- 0 no visible vermiculite present
- >0 to 0.1 visible vermiculite weighted score of ≤ 0.1
- >0.1 to 0.5 visible vermiculite weighted score of ≤ 0.5
- >0.5 visible vermiculite weighted score higher than 0.5

Round	Soil Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
1	0	105	55%	0.49	0.021	0.16	0.005	0.00094	0	0
	>0 to 0.1	27	85%	0.58	0.048	0.12	0.041	0.021	0.0018	0
	>0.1 to 0.5	24	54%	14	0.64	0.34	0.023	0.0014	0	0
	>0.5	66	83%	21	0.48	0.77	0.085	0.027	0.0035	0
2	0	93	45%	0.2	0.0053	0.018	0.0019	0	0	0
	>0 to 0.1	28	36%	0.08	0.0059	0.041	0.001	0	0	0
	>0.1 to 0.5	42	40%	0.44	0.017	0.048	0.0041	0	0	0
	>0.5	62	65%	0.48	0.028	0.16	0.019	0.002	0	0
1 and 2	0	198	51%	0.49	0.013	0.058	0.0033	0.00062	0	0
	>0 to 0.1	55	60%	0.58	0.026	0.092	0.023	0.0013	0	0
	>0.1 to 0.5	66	45%	14	0.24	0.23	0.0056	0	0	0
	>0.5	128	74%	21	0.26	0.46	0.048	0.012	0	0

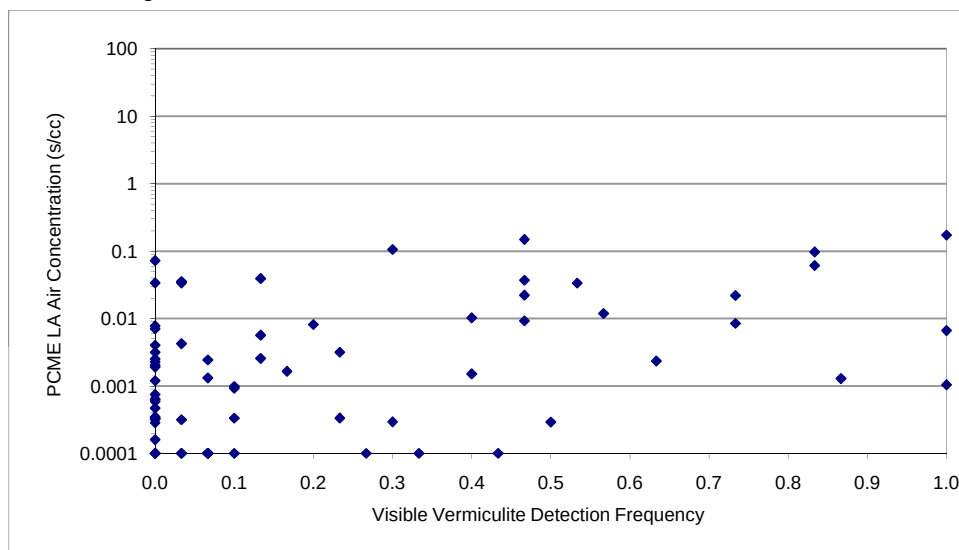
Note: Results from 1573 Kootenai River Rd are not included in Round 1 because visible vermiculite information was not reported.

Figure 4-10. Outdoor ABS Air Concentrations as a Function of Visible Detection Frequency

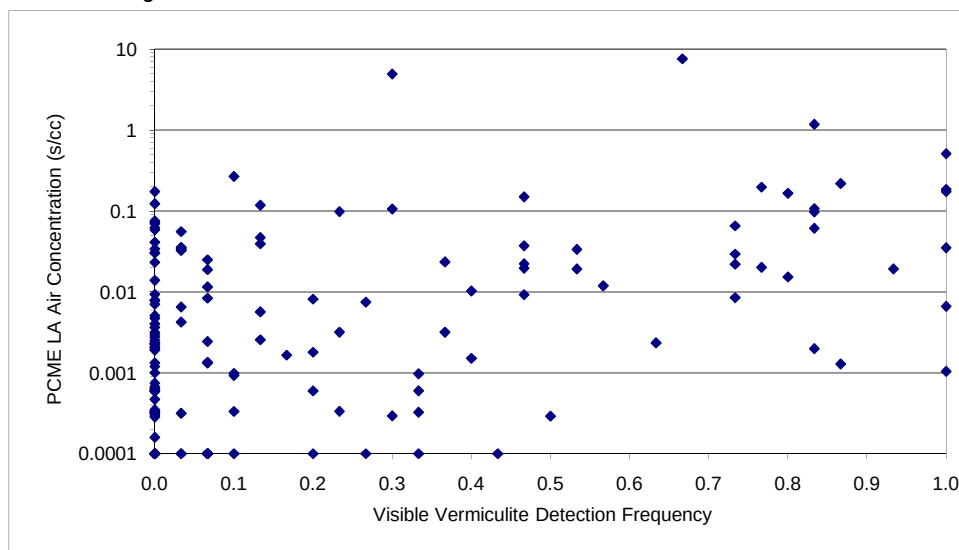
Panel A: Average of all Air Concentrations Across Scenarios for Round 1



Panel B: Average of all Air Concentrations Across Scenarios for Round 2



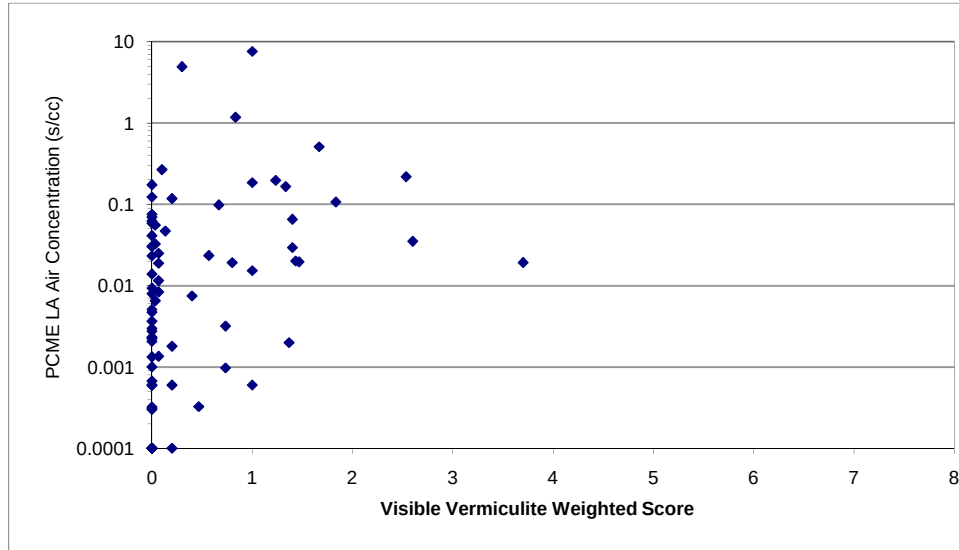
Panel C: Average of all Air Concentrations Across Scenarios For Both Rounds



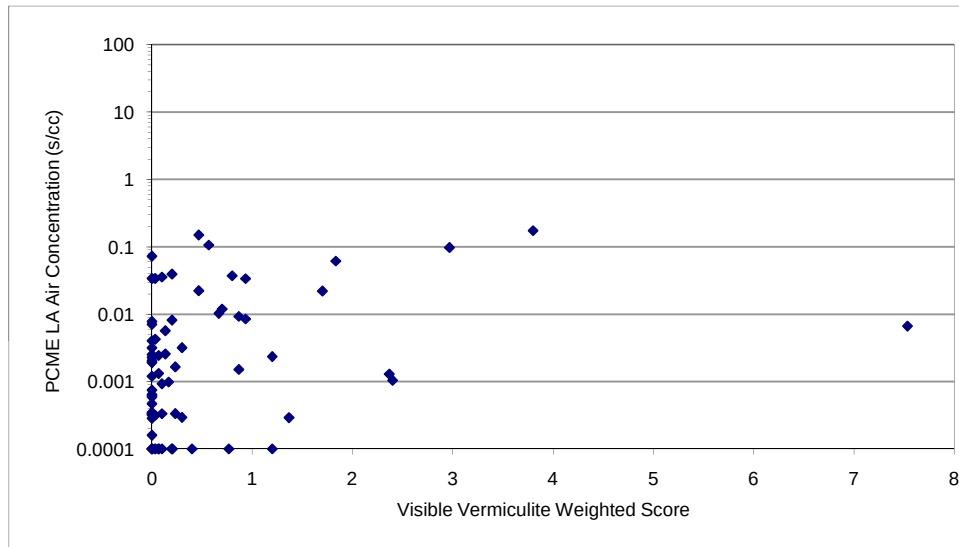
For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).
Average air concentrations are plotted vs. the visible detection frequency from the 30-pt soil sample.

Figure 4-11. Outdoor ABS Air Concentrations as a Function of Visible Vermiculite Weighted Score

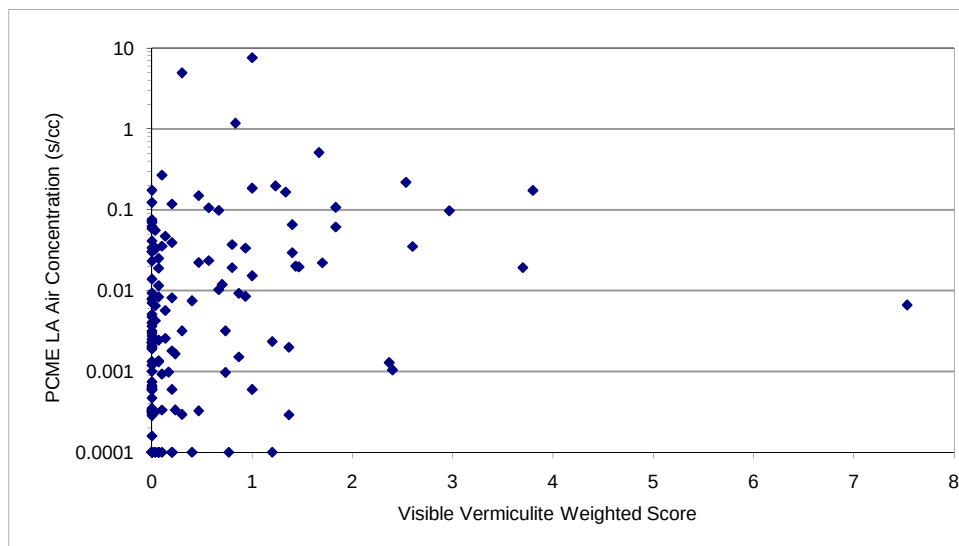
Panel A: Average of all Air Concentrations Across Scenarios for Round 1



Panel B: Average of all Air Concentrations Across Scenarios for Round 2

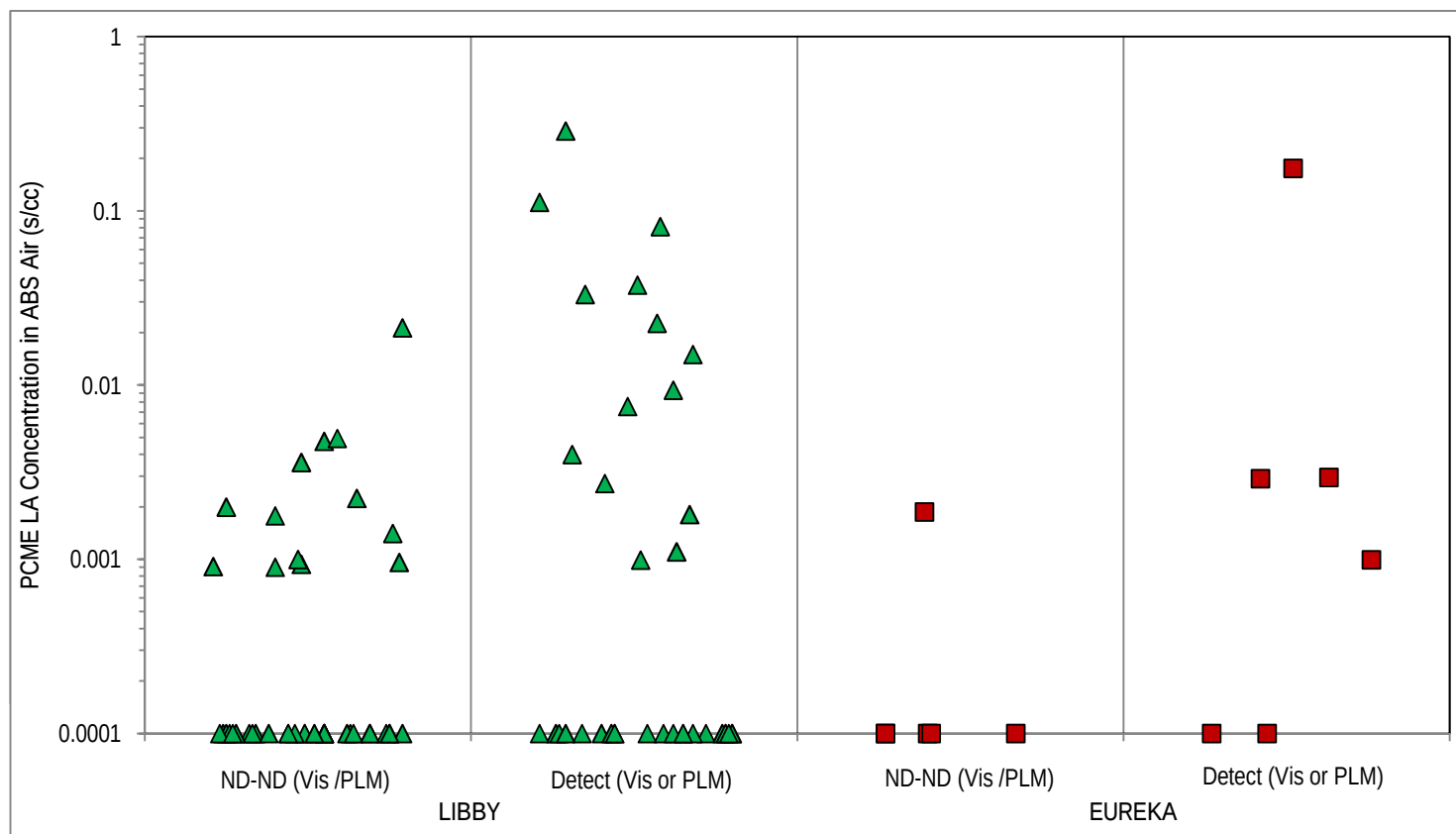


Panel C: Average of all Air Concentrations Across Scenarios For Both Rounds



For plotting on a log scale, non-detects are assigned a value of 0.0001 s/cc (the x-axis).
Average air concentrations are plotted vs. the visible detection frequency from the 30-pt soil sample.

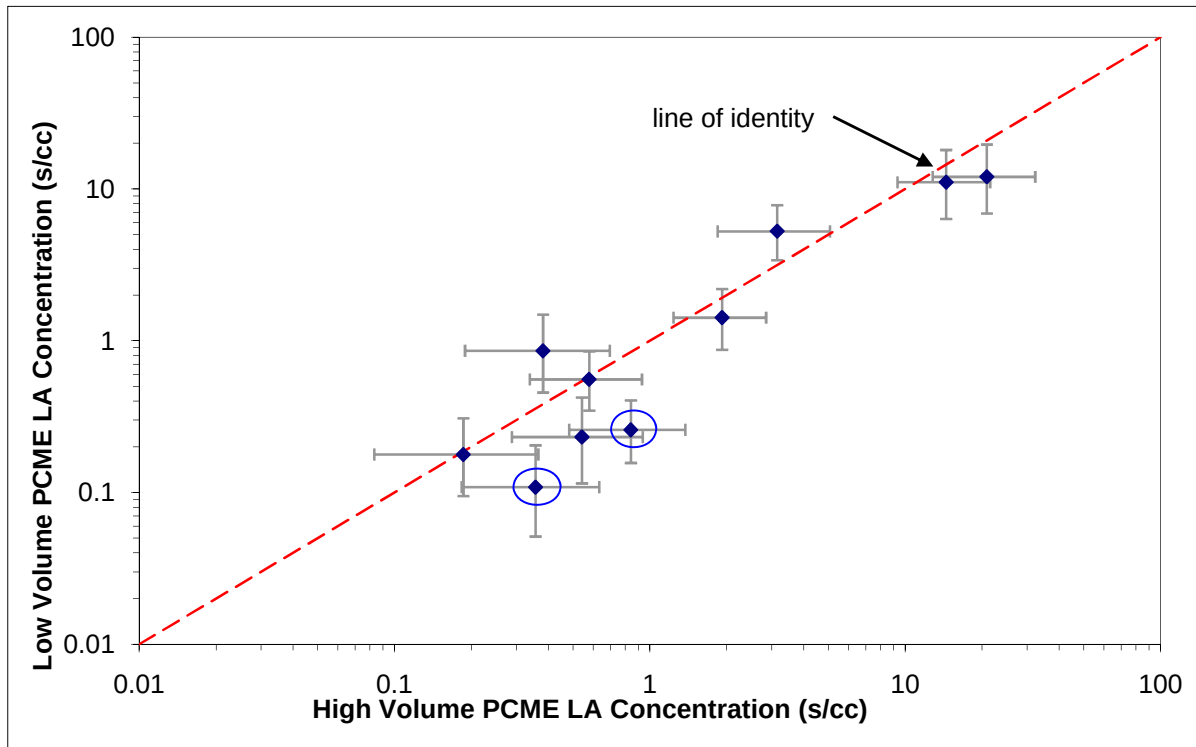
Figure 4-12. Outdoor ABS Data for Clean Fill Locations



Non-detects are shown at 0.0001 s/cc.

Clean Fill Source	Soil Status	N		Mean PCME LA Conc (s/cc)
		properties	samples	
Libby	ND-ND	7	42	1.1E-03
	Detect	6	36	1.7E-02
Eureka	ND-ND	1	6	3.1E-04
	Detect	1	6	3.0E-02

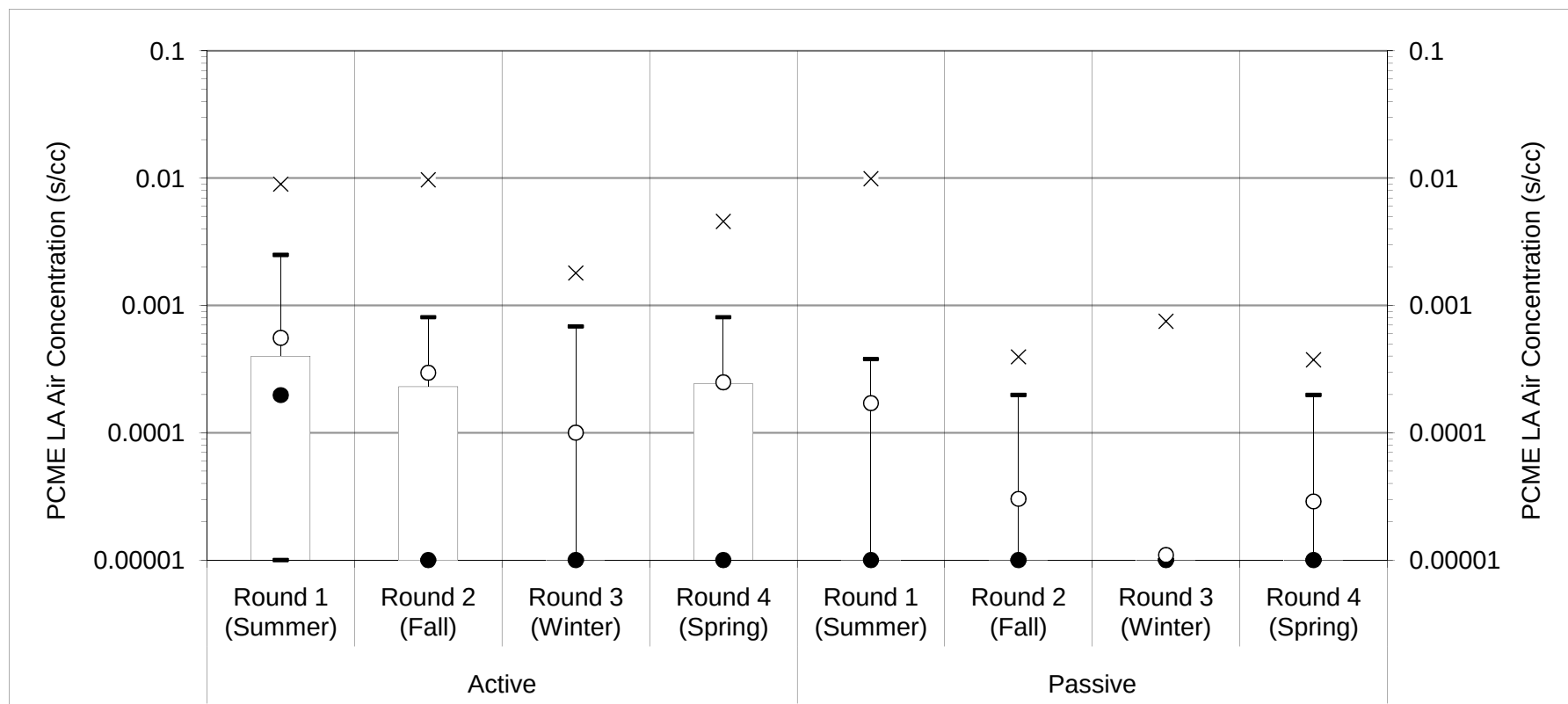
Figure 4-13. Comparison of High Volume and Low Volume Samples



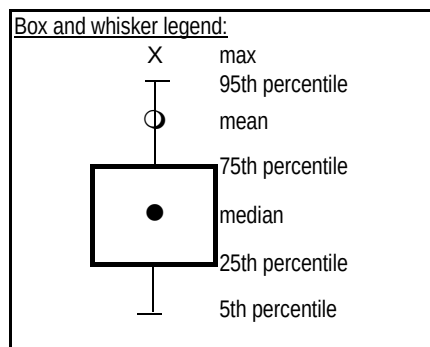
○ = statistically different based on Poisson ratio rate comparison (CI=95%)



Figure 5-2. Indoor ABS Air Concentrations Stratified by ABS Scenario and Sampling Round

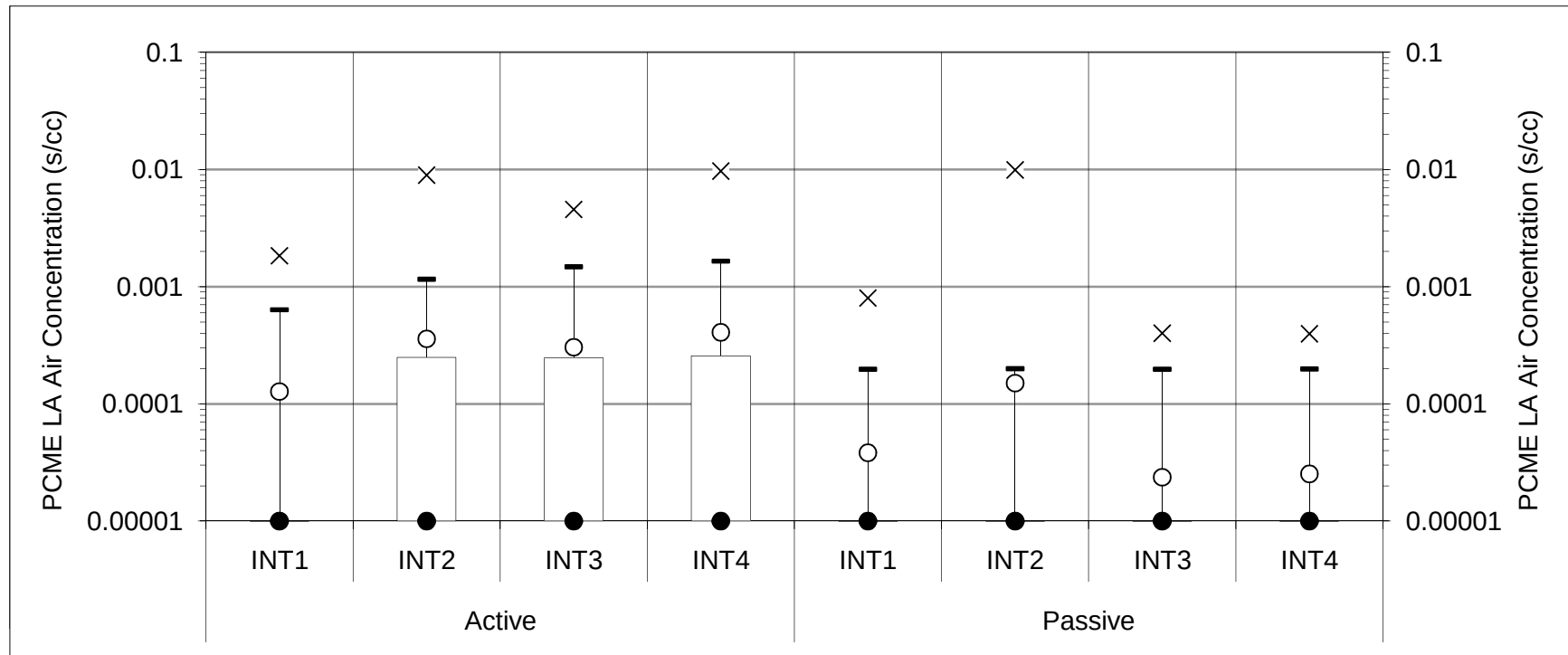


For plotting on a log scale, non-detects are assigned a value of 0.00001 s/cc (the x-axis).

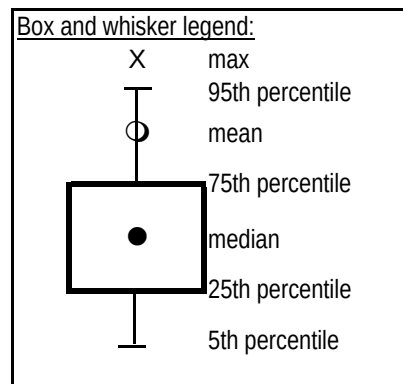


Scenario	Round	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
Active	Round 1	81	58%	0.009	0.00056	0.0025	0.0004	0.0002	0	0
	Round 2	80	34%	0.01	0.0003	0.00081	0.00023	0	0	0
	Round 3	80	14%	0.0018	0.0001	0.00068	0	0	0	0
	Round 4	80	44%	0.0046	0.00025	0.00081	0.00024	0	0	0
Passive	Round 1	81	19%	0.01	0.00017	0.00038	0	0	0	0
	Round 2	80	14%	0.00039	0.00003	0.0002	0	0	0	0
	Round 3	80	3%	0.00075	0.000011	0	0	0	0	0
	Round 4	80	14%	0.00037	0.000029	0.0002	0	0	0	0

Figure 5-3. Indoor ABS Air Concentrations Stratified by Interior Category



For plotting on a log scale, non-detects are assigned a value of 0.00001 s/cc (the x-axis).

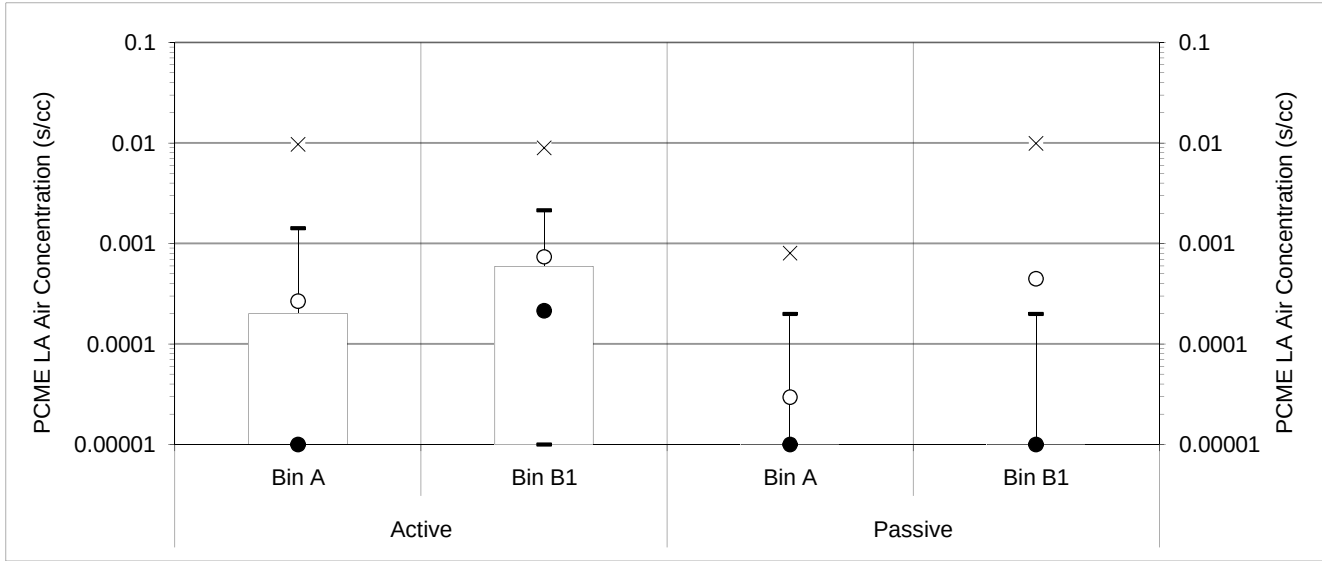


Scenario	Interior Category	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
Active	INT1	76	24%	0.0018	0.00013	0.00064	0	0	0	0
	INT2	84	44%	0.009	0.00036	0.0012	0.00025	0	0	0
	INT3	79	42%	0.0046	0.0003	0.0015	0.00025	0	0	0
	INT4	80	39%	0.01	0.00041	0.0017	0.00026	0	0	0
Passive	INT1	76	12%	0.0008	0.000038	0.0002	0	0	0	0
	INT2	84	15%	0.01	0.00015	0.0002	0	0	0	0
	INT3	80	11%	0.0004	0.000024	0.0002	0	0	0	0
	INT4	80	10%	0.0004	0.000025	0.0002	0	0	0	0

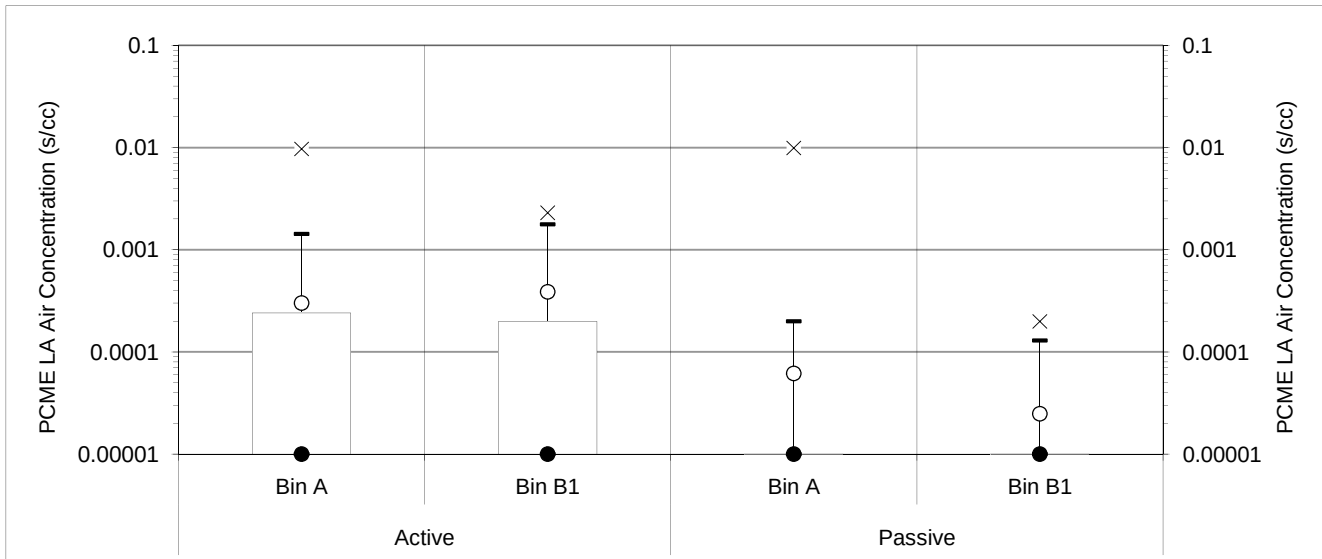
Note: Excludes data from 628 Avenue B because this property was only sampled in Round 1.

Figure 5-4. Indoor ABS Air Concentrations Stratified by PLM-VE Results

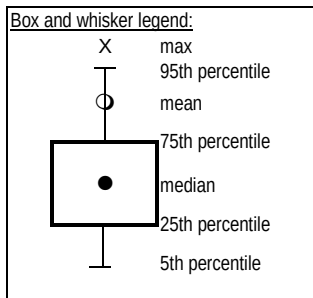
Panel A: Based on SUA Data



Panel B: Based on NSUA Data



For plotting on a log scale, non-detects are assigned a value of 0.00001 s/cc (the x-axis).

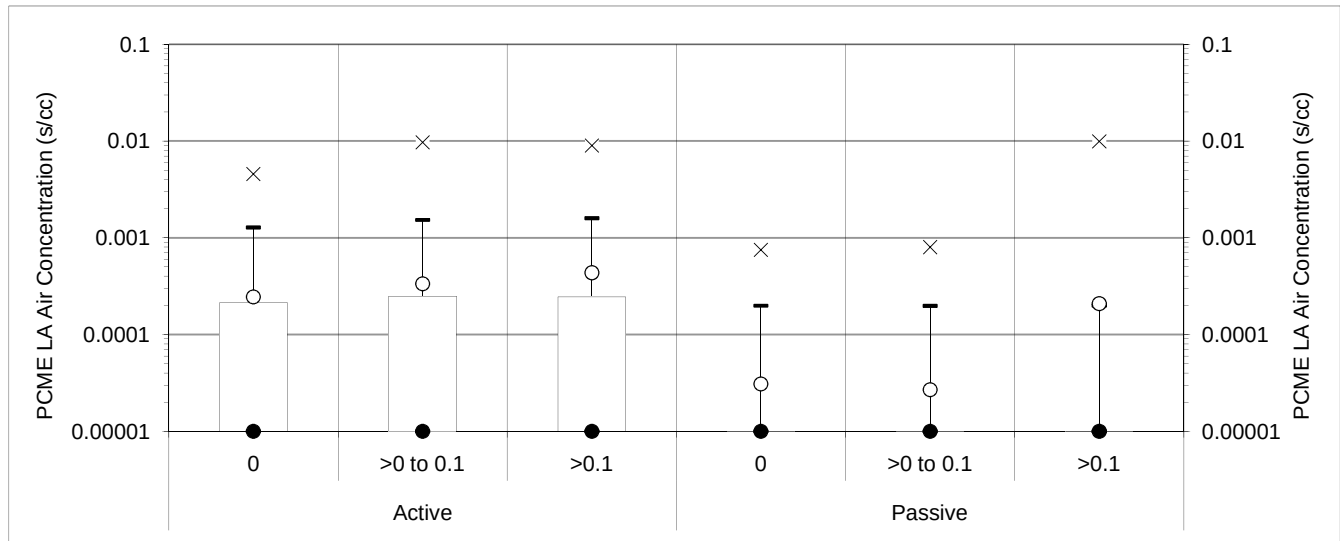


Scenario	Soil Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
SUA										
Active	Bin A	295	36%	0.01	0.00027	0.0014	0.0002	0	0	0
	Bin B1	24	58%	0.009	0.00074	0.0021	0.00059	0.00021	0	0
Passive	Bin A	296	11%	0.0008	0.00003	0.0002	0	0	0	0
	Bin B1	24	21%	0.01	0.00045	0.0002	0	0	0	0
NSUA										
Active	Bin A	311	38%	0.01	0.0003	0.0014	0.00024	0	0	0
	Bin B1	8	25%	0.0023	0.00039	0.0018	0.0002	0	0	0
Passive	Bin A	312	12%	0.01	0.000062	0.0002	0	0	0	0
	Bin B1	8	13%	0.0002	0.000025	0.00013	0	0	0	0

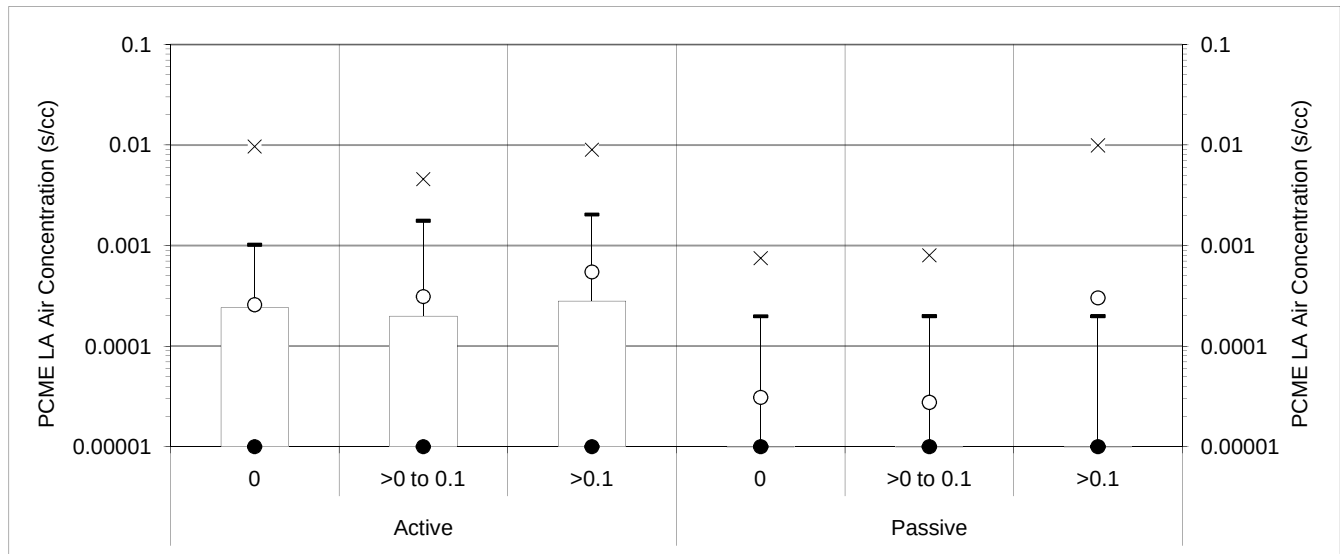
Note: Excludes data from 628 Avenue B because this property was only sampled in Round 1.

Figure 5-5. Indoor ABS Air Concentrations Stratified by Visible Detection Frequency

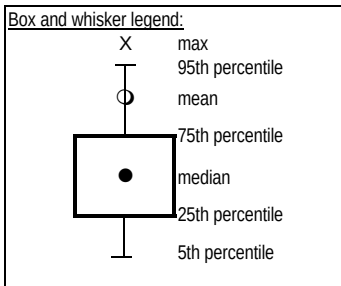
Panel A: Based on SUA Data



Panel B: Based on NSUA Data



For plotting on a log scale, non-detects are assigned a value of 0.00001 s/cc (the x-axis).

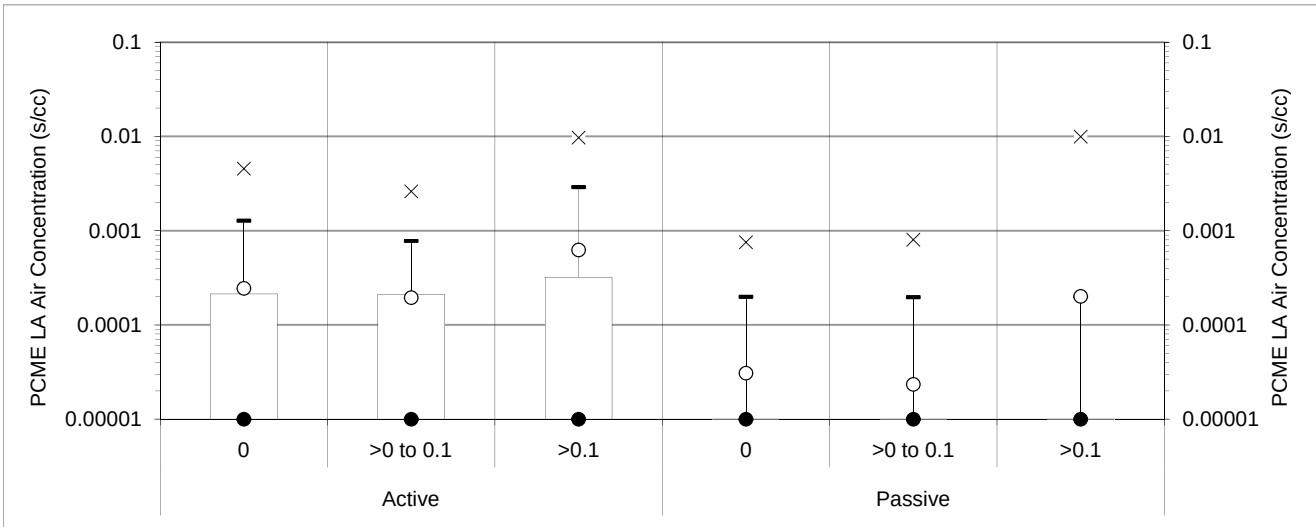


Scenario	DF Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
SUA										
Active	0	175	37%	0.0046	0.00024	0.0013	0.00021	0	0	0
	>0 to 0.1	88	35%	0.01	0.00033	0.0015	0.00025	0	0	0
	>0.1	56	43%	0.009	0.00043	0.0016	0.00024	0	0	0
Passive	0	176	12%	0.00075	0.000031	0.0002	0	0	0	0
	>0 to 0.1	88	10%	0.0008	0.000027	0.0002	0	0	0	0
	>0.1	56	16%	0.01	0.00021	0.0002	0	0	0	0
NSUA										
Active	0	212	38%	0.01	0.00026	0.001	0.00024	0	0	0
	>0 to 0.1	71	31%	0.0046	0.00031	0.0018	0.0002	0	0	0
	>0.1	36	47%	0.009	0.00055	0.002	0.00028	0	0	0
Passive	0	212	12%	0.00075	0.000031	0.0002	0	0	0	0
	>0 to 0.1	72	10%	0.0008	0.000028	0.0002	0	0	0	0
	>0.1	36	17%	0.01	0.0003	0.0002	0	0	0	0

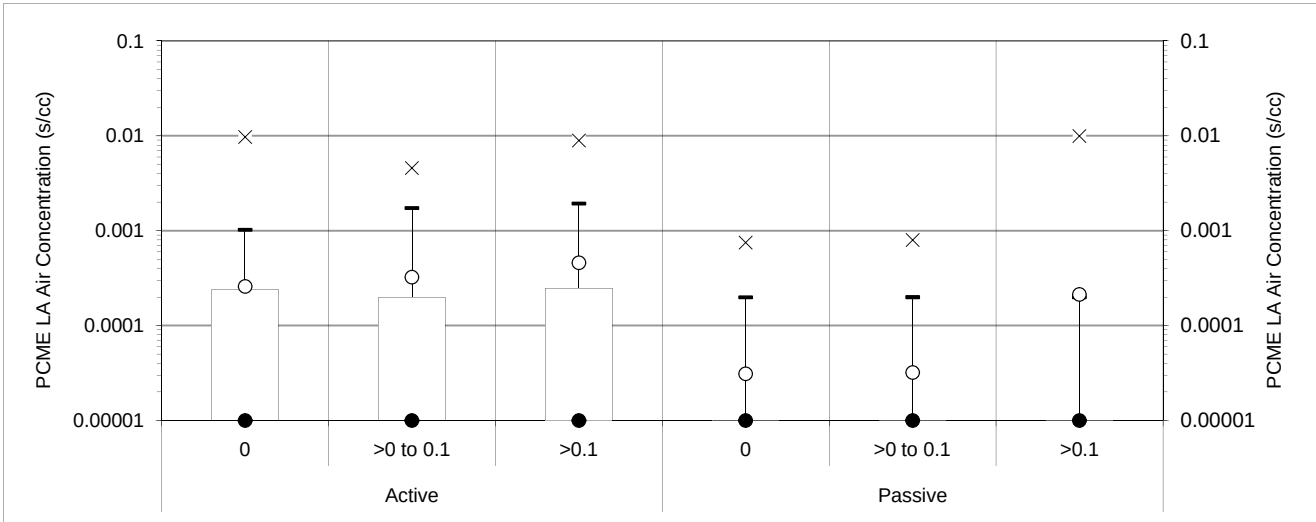
Note: Excludes data from 628 Avenue B because this property was only sampled in Round 1.

Figure 5-6. Indoor ABS Air Concentrations Stratified by Visible Vermiculite Weighted Score

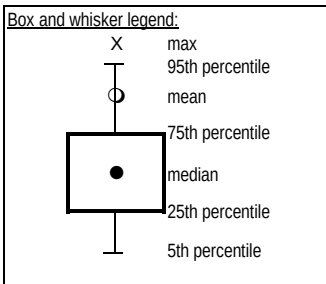
Panel A: Based on SUA Data



Panel B: Based on NSUA Data



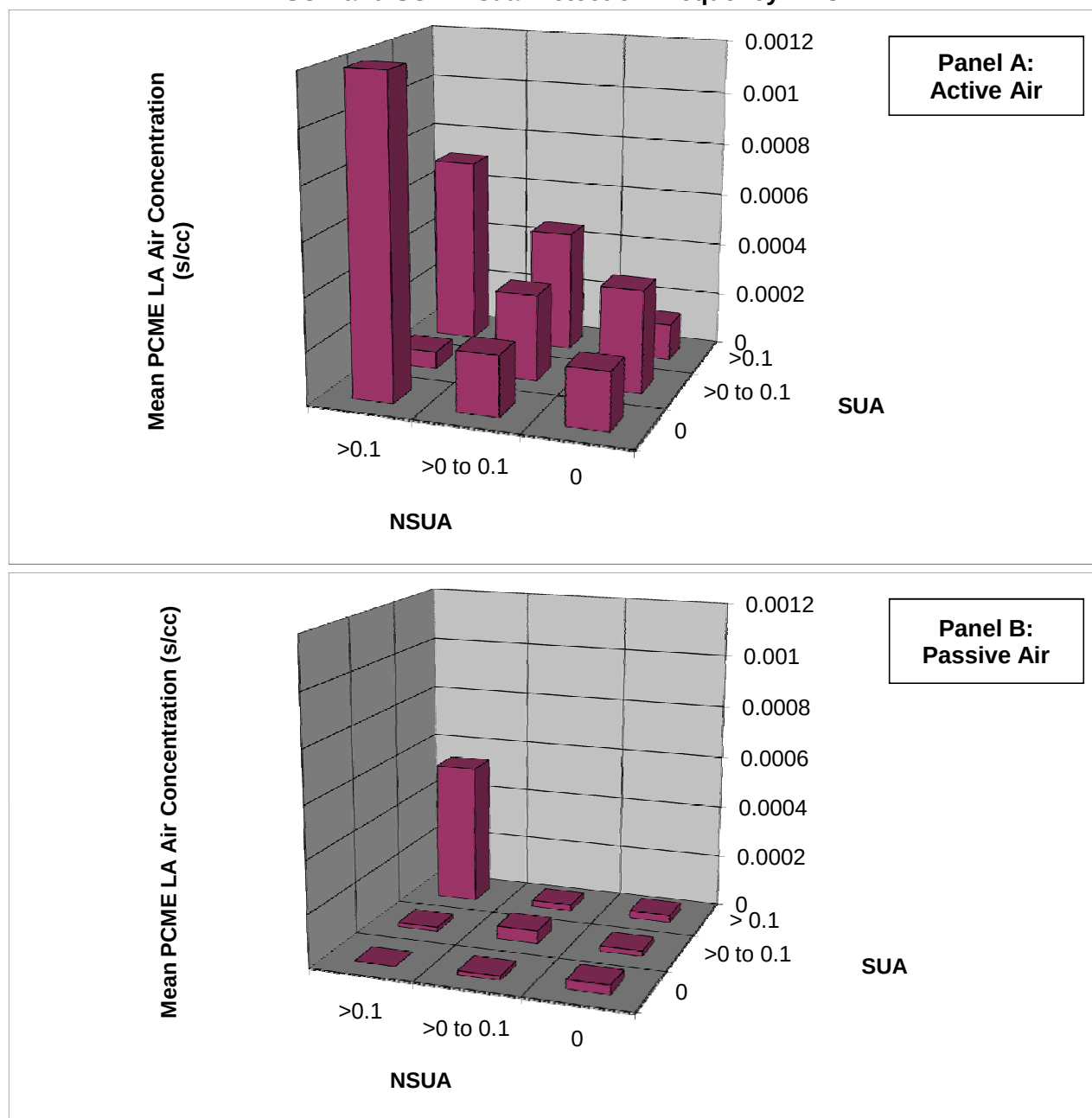
For plotting on a log scale, non-detects are assigned a value of 0.00001 s/cc (the x-axis).



Scenario	Score Bin	ABS Air Data								
		N	DF	Max (s/cc)	Mean (s/cc)	Percentile (s/cc)				
						0.95	0.75	0.5	0.25	0.05
SUA										
Active	0	175	37%	0.0046	0.00024	0.0013	0.00021	0	0	0
	>0 to 0.1	84	33%	0.0026	0.00019	0.00078	0.00021	0	0	0
	>0.1	60	45%	0.01	0.00062	0.0029	0.00032	0	0	0
Passive	0	176	12%	0.00075	0.000031	0.0002	0	0	0	0
	>0 to 0.1	84	8%	0.0008	0.000024	0.0002	0	0	0	0
	>0.1	60	18%	0.01	0.0002	0.0002	0	0	0	0
NSUA										
Active	0	212	38%	0.01	0.00026	0.001	0.00024	0	0	0
	>0 to 0.1	55	31%	0.0046	0.00032	0.0017	0.0002	0	0	0
	>0.1	52	42%	0.009	0.00046	0.0019	0.00025	0	0	0
Passive	0	212	12%	0.00075	0.000031	0.0002	0	0	0	0
	>0 to 0.1	56	11%	0.0008	0.000032	0.0002	0	0	0	0
	>0.1	52	13%	0.01	0.00021	0.0002	0	0	0	0

Note: Excludes data from 628 Avenue B because this property was only sampled in Round 1.

Figure 5-7. Mean PCME LA Air Concentration Stratified by NSUA and SUA Visual Detection Frequency Bins



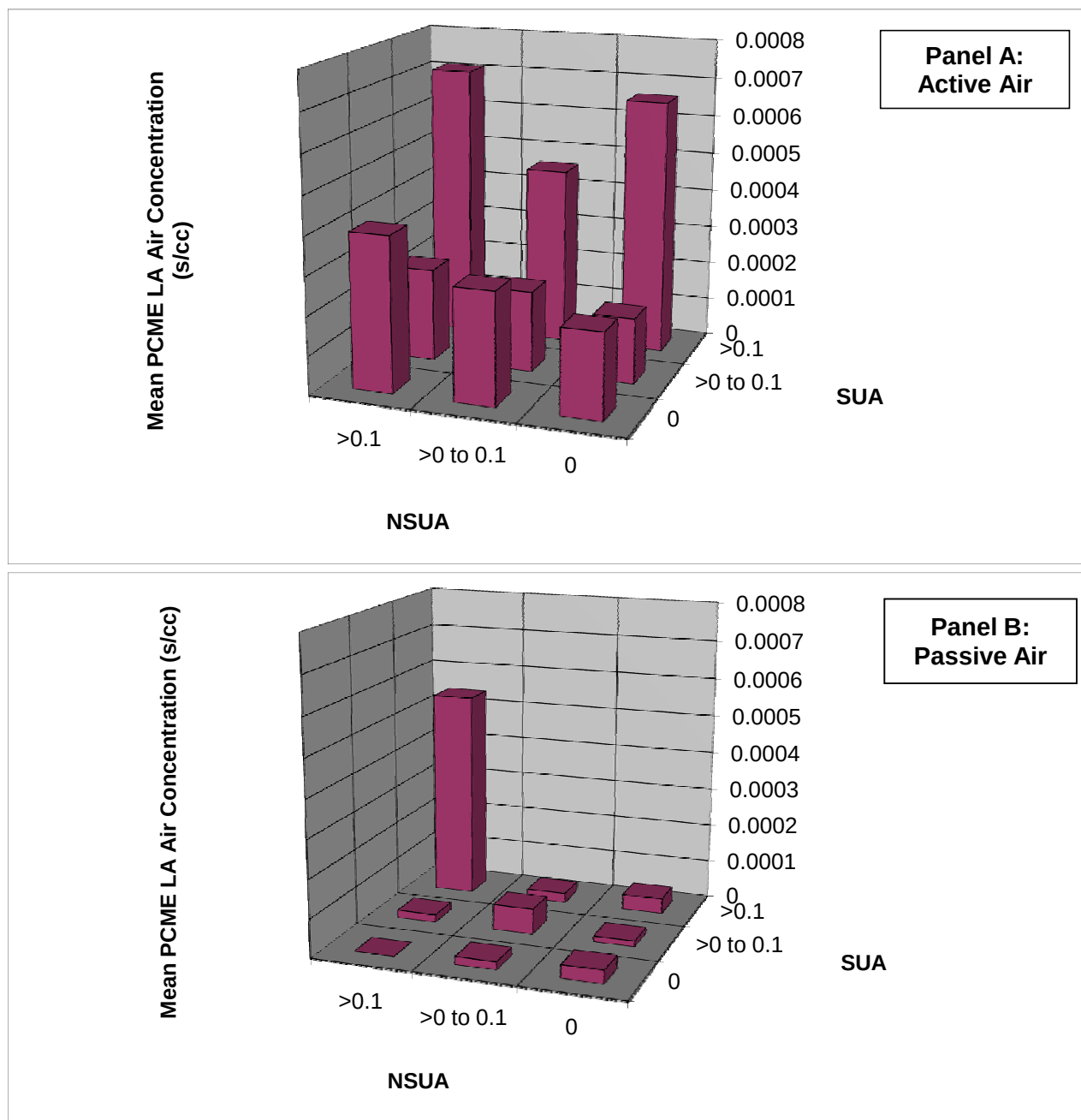
Active Mean PCME LA Concentration (s/cc)		SUA		
		0	>0 to 0.1	>0.1
NSUA	0	0.00022	0.00039	0.00014
	>0 to 0.1	0.00023	0.00033	0.00046
	>0.1	0.0012	0.00066	0.00071

Passive Mean PCME LA Concentration (s/cc)		SUA		
		0	>0 to 0.1	>0.1
NSUA	0	0.000035	0.000021	0.000028
	>0 to 0.1	0.000016	0.000005	0.000025
	>0.1	0	0.000016	0.00054

Count of Samples		SUA		
		0	>0 to 0.1	>0.1
NSUA	0	136	56	20
	>0 to 0.1	35	20	16
	>0.1	4	12	20

Note: Excludes data from 628 Avenue B because this property was only sampled in Round 1.

Figure 5-8. Mean PCME LA Air Concentration Stratified by NSUA and SUA Visual Score Bins

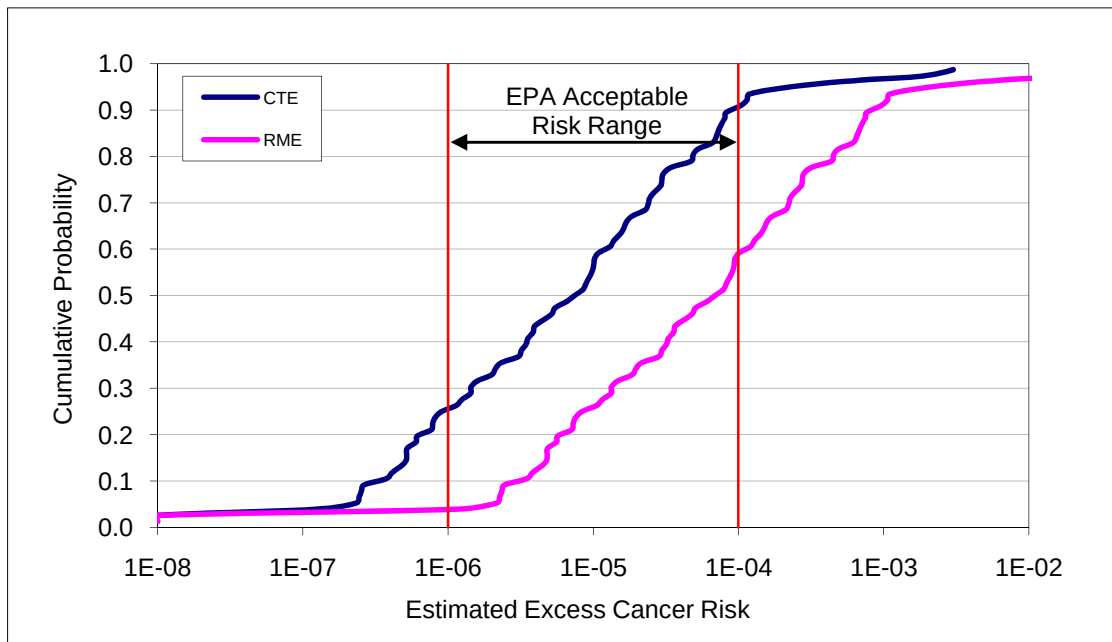


Active Mean PCME LA Concentration (s/cc)		SUA		
		0	>0 to 0.1	>0.1
NSUA	0	0.00022	0.00017	0.00066
	>0 to 0.1	0.00029	0.00021	0.00046
	>0.1	0.0004	0.00024	0.00071

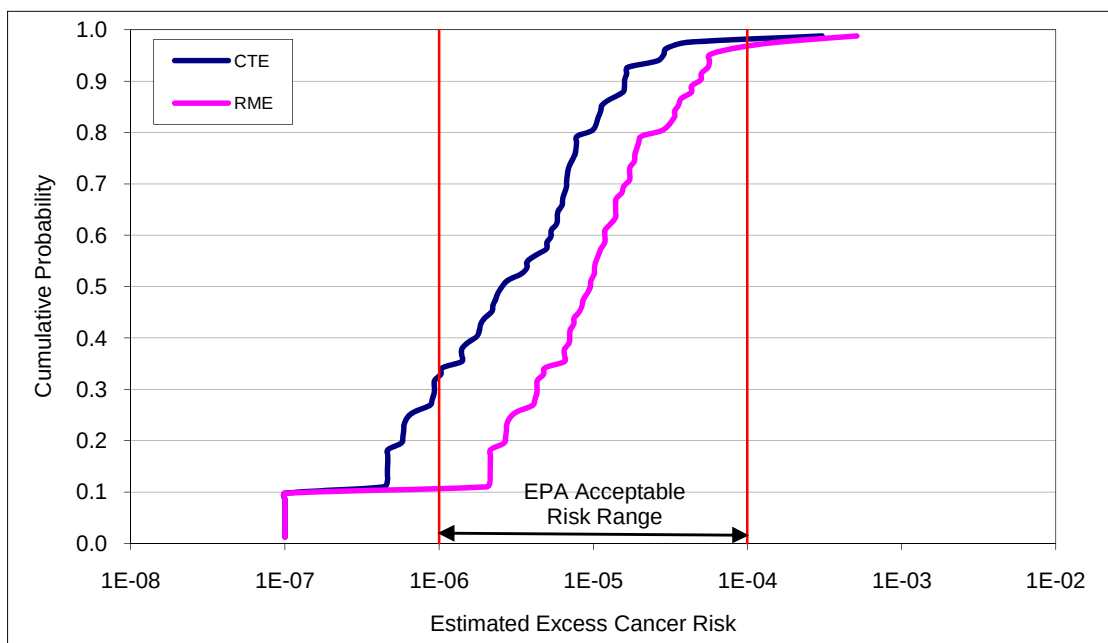
Passive Mean PCME LA Concentration (s/cc)		SUA		
		0	>0 to 0.1	>0.1
NSUA	0	0.000035	0.000015	0.00004
	>0 to 0.1	0.000021	0.000067	0.000025
	>0.1	0	0.00002	0.00054

Count of Samples		SUA		
		0	>0 to 0.1	>0.1
NSUA	0	34	13	6
	>0 to 0.1	7	4	4
	>0.1	3	5	5

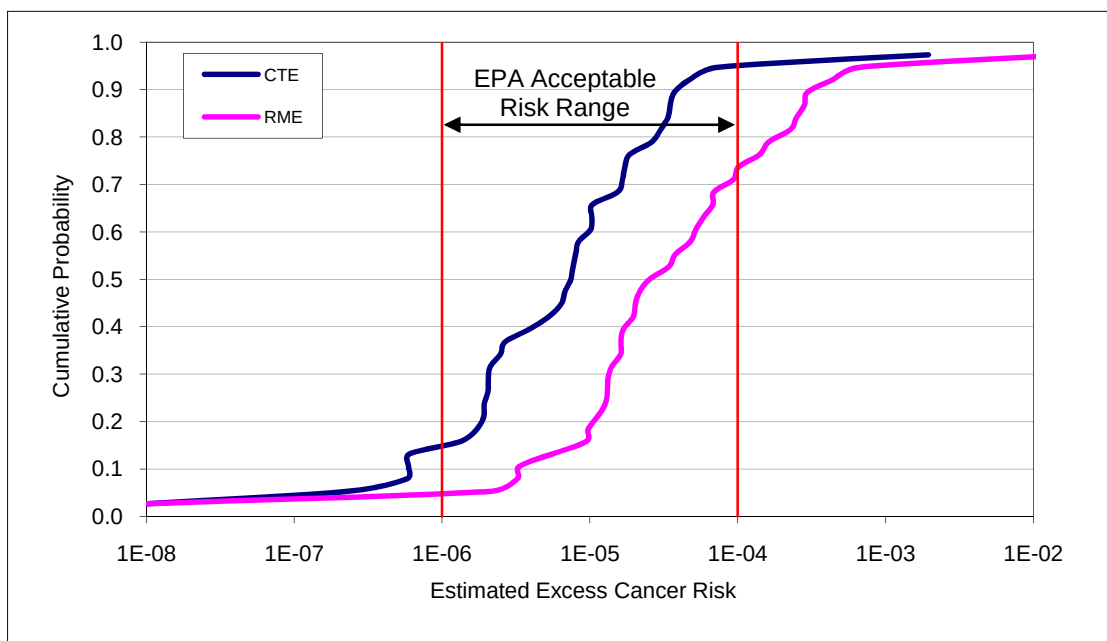
Figure 6-1. Distribution of Screening Level Risk Estimates at Outdoor ABS Areas



**Figure 6-2. Distribution of Screening Level Risk Estimates
(Active Plus Passive) at Indoor ABS Properties**



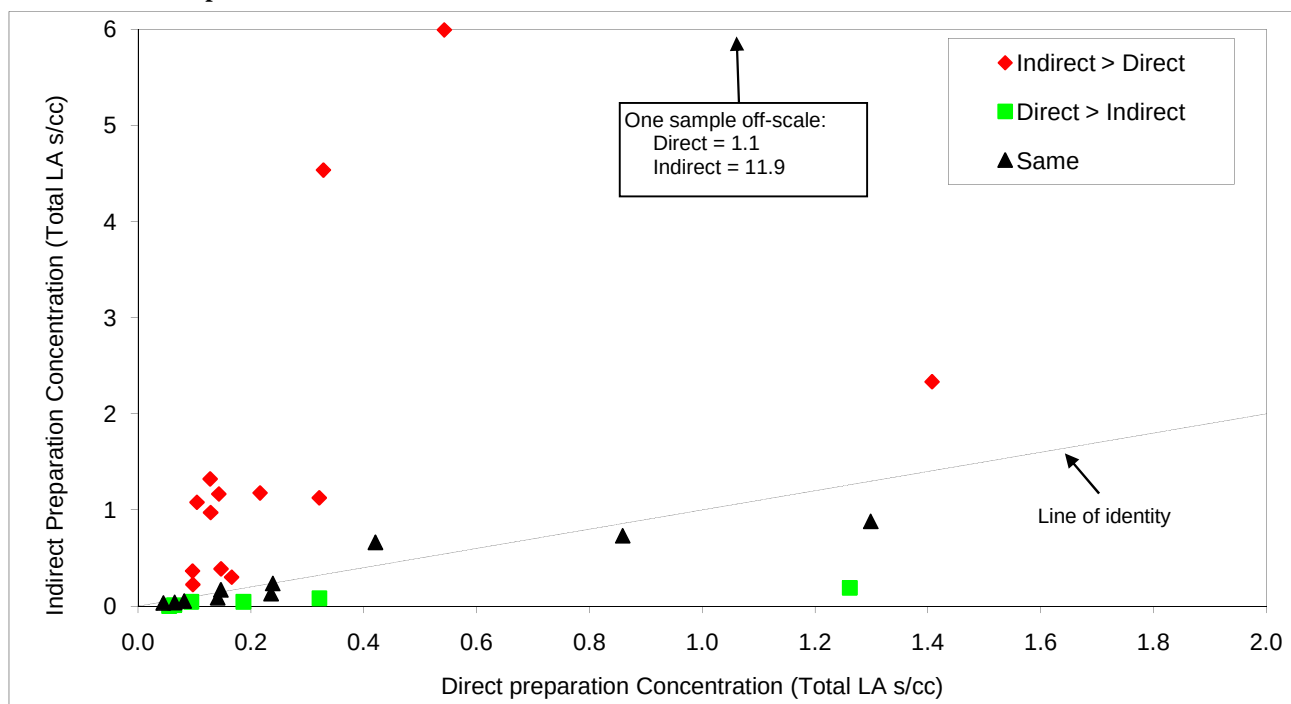
**Figure 6-3. Distribution of Screening Level Total Risk Estimates^a
at Properties with Both Indoor and Outdoor ABS Data**



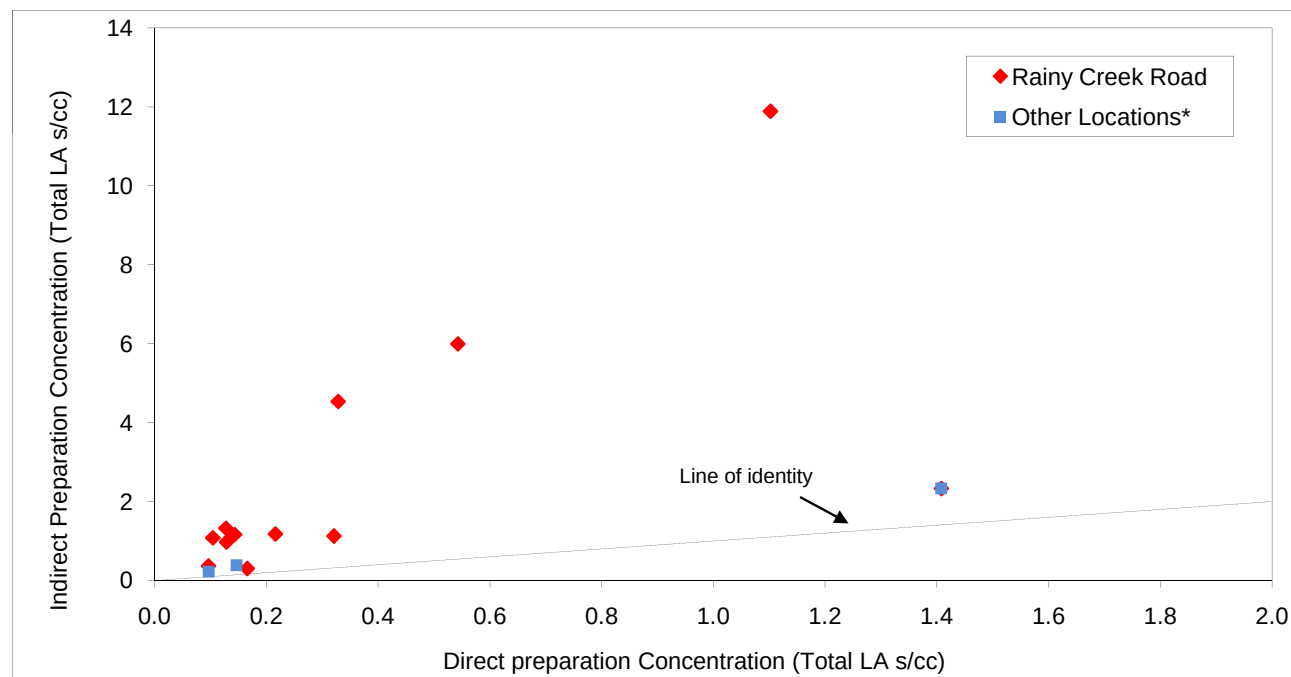
^a Total Risk = Outdoor ABS Risk + Indoor, active ABS Risk + Indoor, passive ABS Risk

Figure 6-4. Comparison of Direct and Indirect TEM Results for 31 Air Samples from Libby

Panel A: All Samples

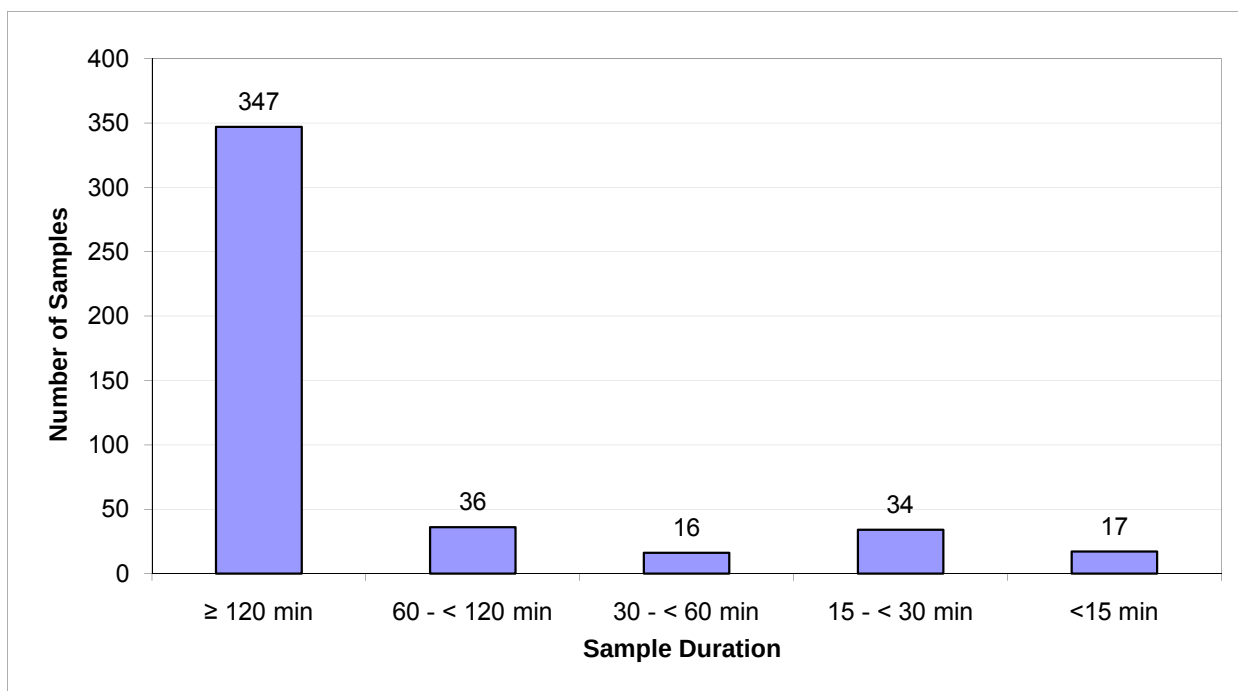


Panel B: Indirect > Direct Samples Only



* All locations that do not have "Rainy Creek Road" in the property description for the sample.

Figure 7-1. Sample Durations for Outdoor ABS Air Samples



Attributes of Short Duration (<1 hour) Samples

Sample Duration	N Samples by ABS Scenario			
	Total	Mowing	Digging	Raking
≥ 120 min	347	115	114	118
60 - < 120 min	36	11	11	14
30 - < 60 min	16	4	5	7
15 - < 30 min	34	14	12	8
<15 min	17	6	8	3
	450	150	150	150

Sample Duration	N Samples by Outdoor ABS Category					
	Total	EXT1	EXT2	EXT3	EXT4	EXT5
≥ 120 min	347	72	66	68	69	72
60 - < 120 min	36	9	8	5	6	8
30 - < 60 min	16	5	4	6	0	1
15 - < 30 min	34	2	7	8	9	8
<15 min	17	2	5	3	0	7
	450	90	90	90	84	96

Figure 7-2. Analytical Sensitivities Achieved for Outdoor ABS Air Samples

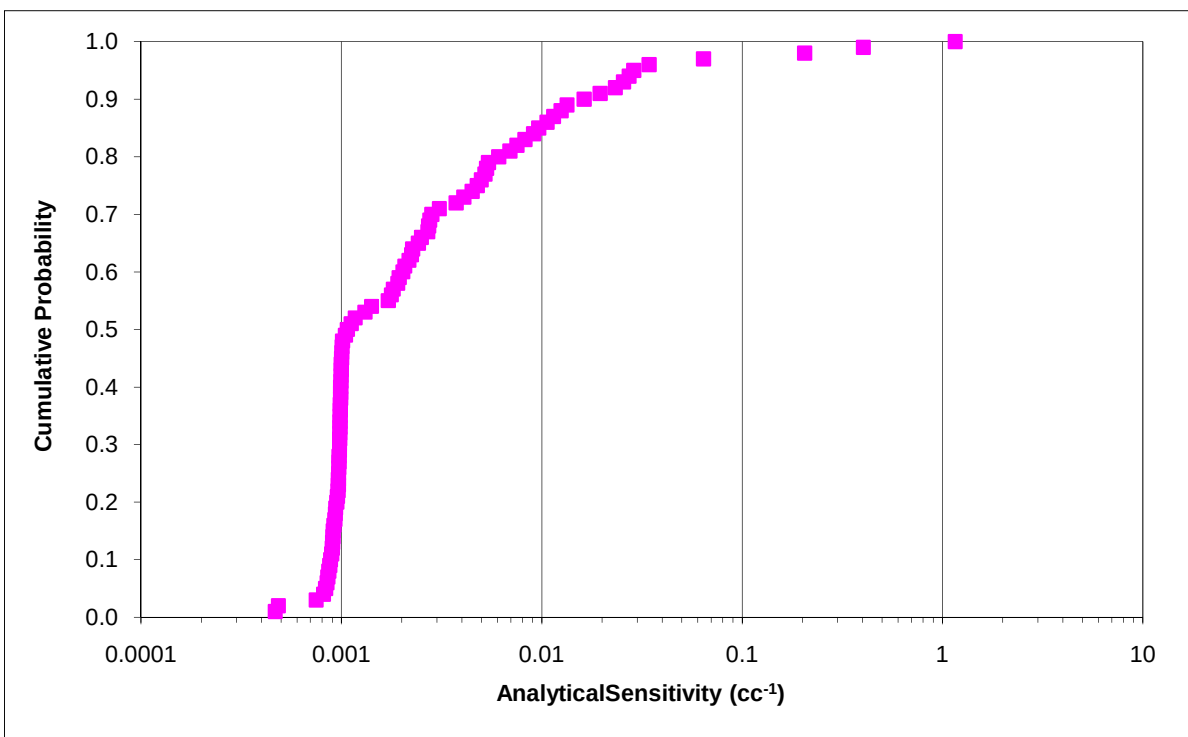
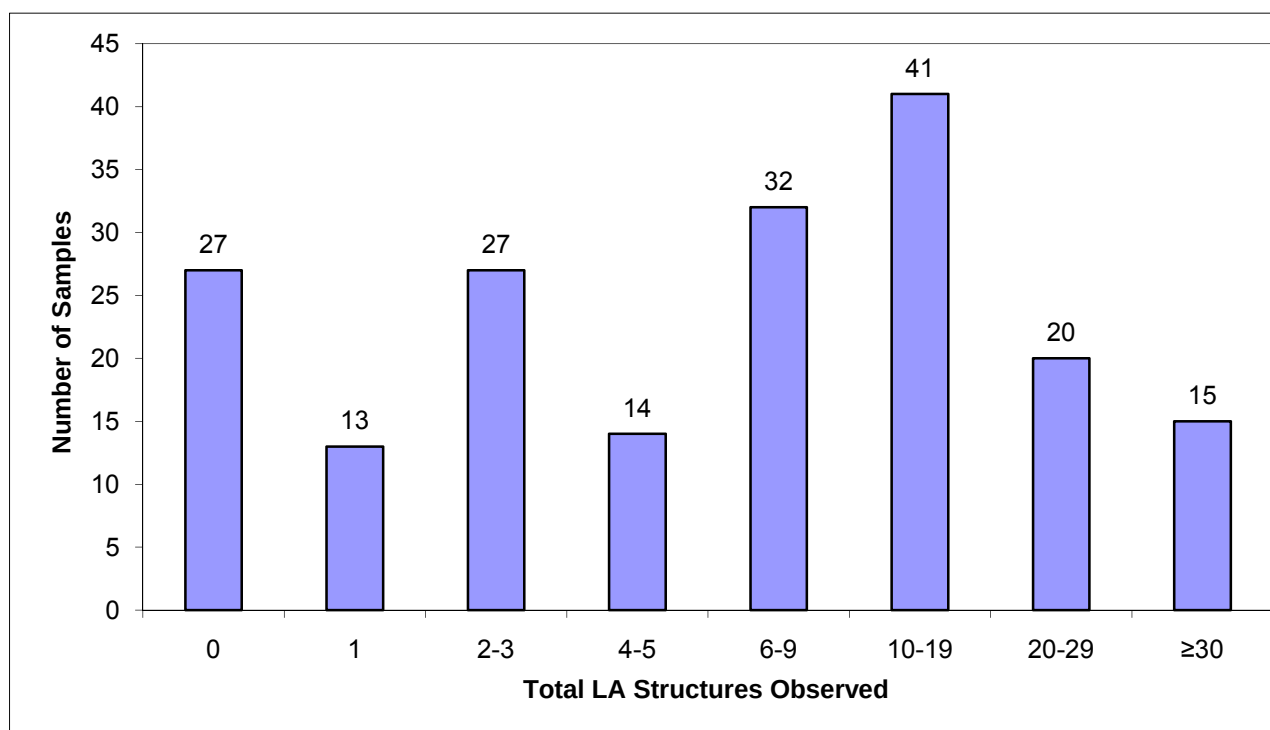


Figure 7-3. Number of LA Structures Observed in Outdoor ABS Air Samples†



† For samples where analysis was stopped based on maximum number of grid openings counted of 100.

Figure 7-4. Sample Durations for Indoor ABS Air Samples

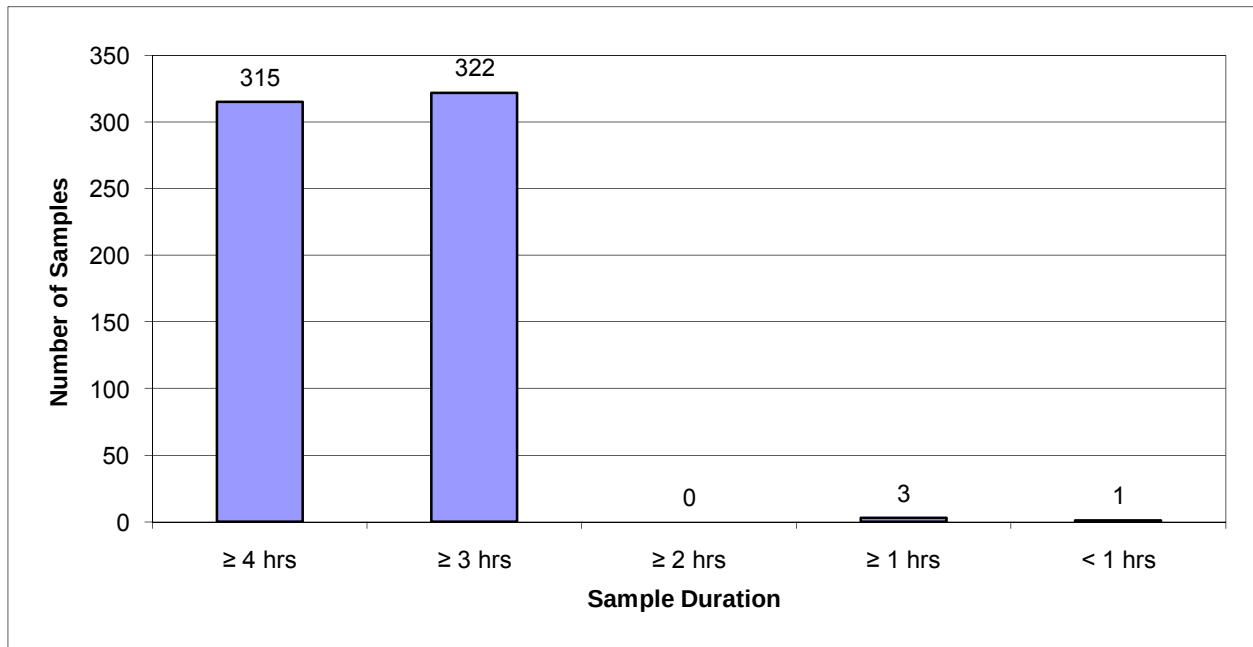


Figure 7-5. Analytical Sensitivities Achieved for Indoor ABS Air Samples

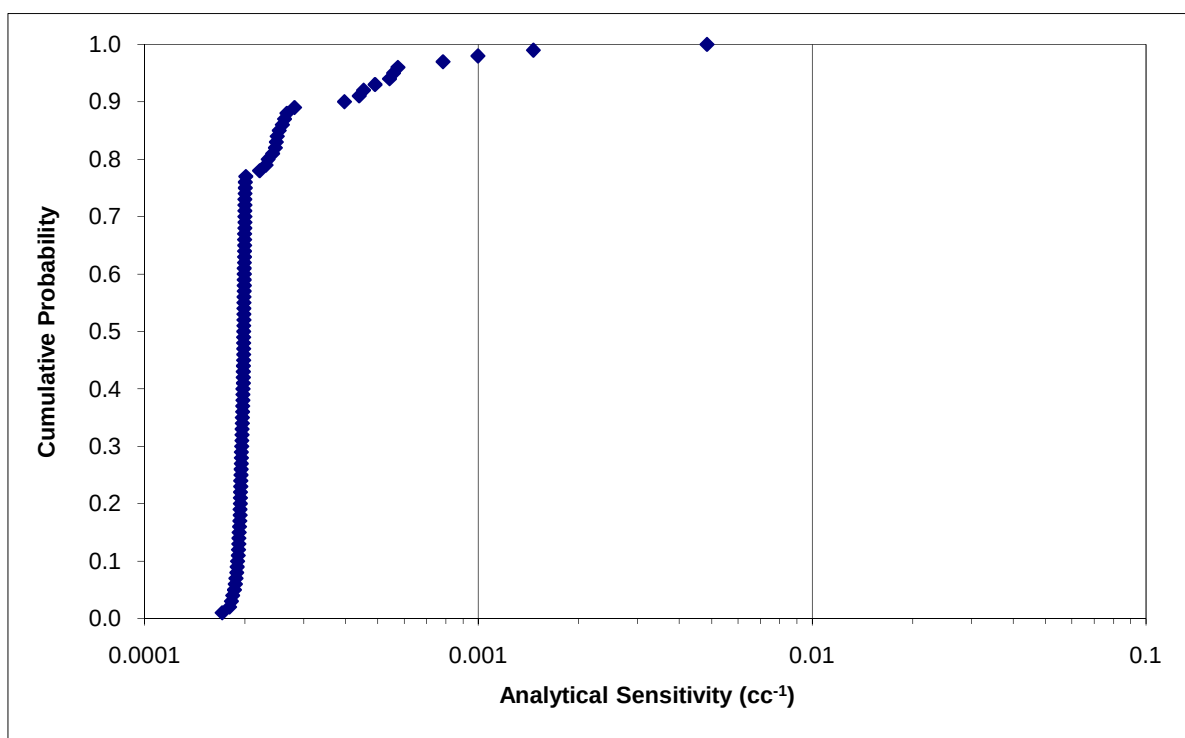
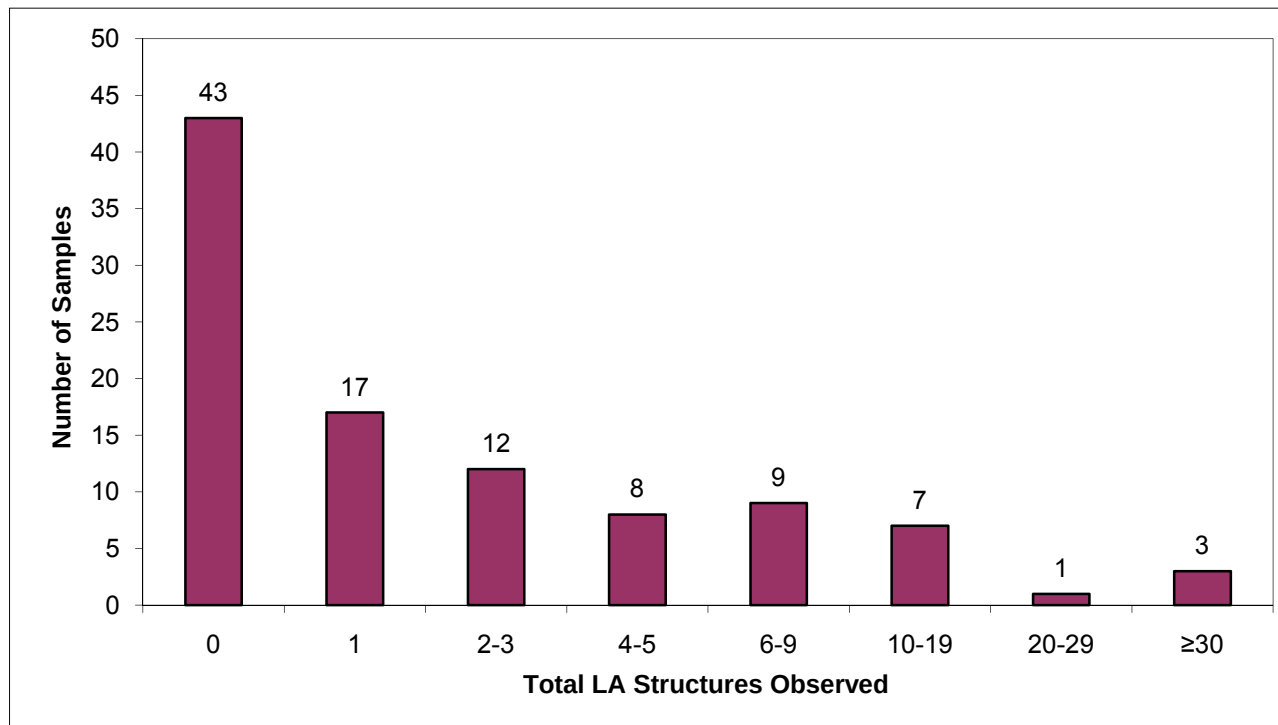


Figure 7-6. Number of LA Structures Observed in Indoor ABS Air Sample†



† For samples where analysis was stopped based on maximum number of grid openings counted of 100.