

TAP - 4-1

**WTC Background Study
Sampling and Analytical Procedures Summary**

Media	Sampling Points	Analytical Parameters	Sampling Method	Description	Analytical Method	Required Detection Limits ¹
Settled Dust Porous Soft surfaces	Carpets, fabric furniture or drapery in areas of activity (living rooms, family rooms)	Asbestos	ASTM D 5755-95	This is a micro vacuuming method. By taping three wipe-sampling templates together, three co-located samples were collected from each location.	ASTM D 5755-95	1000 structures/cc
		Lead	ASTM E 1973-99	This is a micro vacuuming method. By taping three wipe-sampling templates together, three co-located samples were collected from each location.	SW-846 6010B	<25 ug/ft ²
Settled Dust Non-porous Hard surfaces	Horizontal surfaces of tables or counters and bare floors, ceilings and walls in areas of activity (living rooms, family rooms)	Asbestos	ASTM D 6480-99	Wipe Samples	ASTM D 6480-99 (wipe)	1000 structures/cc
		Lead	HUD Appendix 13.1	Wipe Samples	SW-846 6010B	<25 ug/ft ²
		Dioxins	ASTM D 6661-01	Wipe Samples	ASTM 6661-01/SW-846 8290	<2 ng/m ²
		PAHs	ASTM D 6661-01	Wipe Samples	ASTM 6661-01/SW-846 8270C	<0.3 mg/m ²
		Total Dust	HUD Appendix 13.1 ²	Wipe Samples	No Formal Method (NIOSH 7500 Modified)	No detection limit required
		Silica, calcite, gypsum	HUD Appendix 13.1 ²	Wipe Samples. All parameters were collected on one wipe.	NIOSH 7500 (XRD)	Background
		MMVF	ASTM D 6480-99	Wipe Samples	EMSL MSD 0310	Background
Indoor Air	Areas of known activity (living rooms, family rooms)	Asbestos	NIOSH 7400	Air pump operated at 10L/min for 8 hours to achieve the COPC wkgroup Practical Quantitation Limit (PQL)	PCM NIOSH 7400 followed by TEM AHERA method.	PCM 0.0009 f/cc TEM 0.0005 f/cc
		Lead	NIOSH 7300	Air pump operated at 10L/min for 8 hours to achieve the COPC wkgroup PQL	SW-846 6010B	0.1 ug/m ³
		Silica, calcite, gypsum	NIOSH 7500	Air pump operated at 2.5L/min for 8 hours to achieve the COPC wkgroup PQL	NIOSH 7500 (XRD)	0.5 ug/m ³
		MMVF ³	NIOSH 7400	Air pump operated at 10L/min for 8 hours to achieve the COPC wkgroup Practical Quantitation Limit (PQL)	EMSL MSD 0310	<0.01 f/cc
Bulk Dust	AC window units (collection of bulk dust sample from the unit air filters).	Asbestos; lead; silica, calcite, gypsum; MMVF	Attachment 5 of the QAPP "HVAC Or Air Conditioner Filter Bulk Collection Protocol" prepared by TRC Solutions Inc.	Bulk dust samples ⁴ were collected from AC window type unit filters, brushed with a disposable brush into a stainless steel bowl and transferred into sample containers. If the volume required was not sufficient for all analyses, the sample analysis was prioritized as follows: asbestos, lead, silica, calcite, gypsum, MMVF, PAHs, and dioxins.	Asbestos: PLM NYS 198.1 followed by TEM NYS 198.4	Background
					Lead: SW-846 6010B	<25 ug/ft ²
					Silica, calcite, gypsum: NIOSH 7500 (XRD)	Background
					MMVF: PLM NYS 198.1/EMSL MSD 0310	Background
		Dioxins, PAHs			Dioxins: SW-846 8290 PAHs: SW-846 8270	<2 ng/m ² <0.3 mg/m ²

NOTES: ¹Required Detection limits are Tier III Levels from "Indoor Air Assessment: Selecting Contaminants of Potential Concern and Setting Health Based Benchmarks" prepared by the Contaminants of Potential Concern (COPC) Committee of the World Trade Center Indoor Air Taskforce Working Group

² Wipe samples for total dust and silica, calcite and gypsum will be collected using the HUD Appendix 13.1 method since no standardized method is available.

³ No standardized sampling method exists for this parameter. On the assumption that this fibrous material behaves in the air in the same way as asbestos, NIOSH 7400 will be utilized. Analysis via EMSL MSD 0310 (see the EMSL SOP in Appendix C).

⁴ No less than 5 grams and up to 20 grams of dust are required to analyze for asbestos, lead, silica, calcite, gypsum, and MMVF. At least 10 grams of dust for PAHs and 30 grams for dioxins.

LEGEND: < = less than
f/cc = fibers per square centimeter
mg/m² = milligrams per square meter
ng/m² = nanograms per square meter
ug/ft² = micrograms per square foot
ug/m³ = micrograms per square meter

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