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Attached are documents
referenced in recommended
sampling protocols for
125 Cedar Street and
Bob Fitzpatrick's comments
on the SOW.

5 pages without cover

WTC Indoor Air/Environments Monitoring - Sampling and Analytical Procedures For Background and Pilot Clean up Studies

Media	Sampling Points	Analytical Parameters	Sampling Method Proposed	Description	Analytical Method Proposed
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. Three collocated samples will be collected from each location.	ASTM D 5755-95
		Lead	ASTM E 1973-99	This is a micro vacuuming method. Three collocated samples will be collected from each location.	SW-846 6010B
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)
		Lead	HUD Appendix 13.1	Wipe Samples	SW-846 6010B
		Dioxins	ASTM D 6661-01	Wipe Samples	ASTM 6661-01/SW-846 8290
		PAHs	ASTM D 6661-01	Wipe Samples	ASTM 6661-01/SW-846 8270C
		Total Dust	HUD Appendix 13.1**	Wipe Sample collected at one location per unit.	No Formal Method (NIOSH 7500 Modified)
		Silica, calcite, gypsum	HUD Appendix 13.1**	Wipe Samples. All parameters will be collected on one wipe.	NIOSH 7500 (XRD)
		MMVF	ASTM D 6480-99	Samples will be combined with the asbestos sampling.	EMSL MSD.0300
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 wkgoup detection limit	PCM NIOSH 7400 followed by TEM AHERA method.
		Lead	NIOSH 7300	Air pump operated at 10L/min for 8 hours to achieve the COPC wkgoup detection limit	SW-846 6010B
		PAHs	NIOSH 5515	Air pump operated at 2L/min for 8 hours. Pilot Clean-up study only for worst case scenarios.	SW-846 8270 (Analytical method with be modified to achieve the COPC wkgoup detection limit)
		Dioxins	TO-9 (Modified for indoor air)	Air pump operated at 25L/min for 35 hours. This modification is not a proven method. To be conducted during the Pilot Clean-up study only for worst case scenarios.	SW-846 8290
		Silica, calcite, gypsum	NIOSH 7500	Air pump operated at 2.5L/min for 8 hours to achieve the COPC wkgoup detection limits	NIOSH 7500 (XRD)
		MMVF	NIOSH 7400	Assumed that it behaves the same as asbestos, samples will be combined with the asbestos sampling.	EMSL MSD.0300
Bulk Dust	HVAC systems and AC units (collection of bulk dust sample from the unit air filters). Background study only.	Asbestos	Bulk Sample	Bulk samples will be collected from HVAC or AC window type unit filters, shaken into a plastic bag and transferred into the sample container.	PLM NYS 198.1 followed by TEM NYS 198.4
		Lead	Bulk Sample	(If the volume required is not attainable for all analysis, the sample will be analyzed for asbestos only.	SW-846 6010B
		PAHs	Bulk Sample	(If the volume required is not attainable for all analysis, the sample will be analyzed for asbestos only.	SW-846 8270
		Dioxins	Bulk Sample	(If the volume required is not attainable for all analysis, the sample will be analyzed for asbestos only.	SW-846 8290
		Silica, calcite, gypsum	Bulk Sample	(If the volume required is not attainable for all analysis, the sample will be analyzed for asbestos only.	NIOSH 7500 (XRD)
		MMVF	Bulk Sample	(If the volume required is not attainable for all analysis, the sample will be analyzed for asbestos only.	PLM NYS 198.1/EMSL MSD.0300

NOTE: ** Wipe samples for silica, calcite and gypsum will be collected using the HUD Appendix 13.1 method since no standardized method is available.

DRAFT**WTC Indoor Air/Environment Pre-Cleanup Pilot Study
Sampling Matrix**

Wipe Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Ceilings	1	0	0	0	0	0	1
Walls	1	1	1	1	1	0	5
Bare floor	1	1	1	1	1	0	5
Counter tops or furniture (table tops)	1	1	1	1	1	1	6
Total Wipe Samples/parameter	4	3	3	3	3	1	17

Micro-vacuum Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Carpets or Drapery	3	3	0	0	0	0	6
Fabric Furniture (couch or chair)	3	3	0	0	0	0	6
Total Micro-vacuum Samples/parameter	6	6	0	0	0	0	12

Indoor Air Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Main Living Space(living rooms)	0	0	2	2	0	0	4

Bulk Dust Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica	pH	Total # Samples
	1	1	1	1	1	1	6

NOTES:

1 MMVF - Man Made Vitreous Fibers.

2 This table does not include the 10% Quality Control samples.

3 The total number of samples presented represents the number of samples to be collected per unit.

4

Dioxins and PAH samples in indoor air will be collected from the 2 commercial spaces. Additional samples may be collected if clean up criteria is not met.

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WTC Indoor Air/Environment Cleanup Pilot Study Sampling Matrix

Indoor Air Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Monitoring for worker exposure	1	1	0	0	1	0	3

NOTES

MMVF - Man Made Vitreous Fibers

This table does not include the 10% Quality Control samples.

Air samples will be collected during the clean up to monitor worker exposure.

DRAFT**WTC Indoor Air/Environment Post Cleanup Pilot Study
Sampling Matrix**

Wipe Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Ceilings	1	0	0	0	0	0	1
Walls	1	1	1	1	1	0	5
Bare floor	1	1	1	1	1	0	5
Counter tops or furniture (table tops)	1	1	1	1	1	1	6
Total Wipe Samples/parameter	4	3	3	3	3	1	17

Micro-vacuum Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Carpets or Drapery	3	3	0	0	0	0	6
Fabric Furniture (couch or chair)	3	3	0	0	0	0	6
Total Micro-vacuum Samples/parameter	6	6	0	0	0	0	12

Indoor Air Samples	Asbestos/ MMVF	Lead	Dioxins	PAHs	Silica, Calcite, Gypsum	Total Dust	Total # Samples
Main Living Space(living rooms)	2	1	0	0	1	0	4

NOTES

MMVF - Man Made Vitreous Fibers

This table does not include the 10% Quality Control samples.

The total number of samples presented represents the number of samples to be collected per unit.

Comments on the New York City Department of Environmental Protection**Bureau of Environmental Compliance****Asbestos Contractor—Cleaning Procedures for 125 Cedar Street**

- 1) Under Purpose it states—12 stories—approximately 52,000 square feet. It is recommended that this be changed to: 12 stories with a penthouse apartment, a basement and two commercial spaces located on the first floor. The square footage of the building needs to be changed to better reflect the actual number of square feet to be cleaned, not included in the above square footage are ceilings, walls, staircase, elevator shaft (?), etc.
- 2) The Penthouse patio needs to be cleaned (was not cleaned during roof/facade clean-up).
- 3) Approximately 100 linear feet of HVAC duct work in the commercial space needs to be removed and disposed of as asbestos.
- 4) A contractor needs to be hired to recover the CFC's from the refrigerators and air conditioners.
- 5) Deconning/enclosure of mail chute needs to be added.
- 6) Cleaning procedure for holes in floor, ceilings and walls.