



TWENTIETH FLOOR CLEAN UP REPORT

**100 CHURCH STREET
NEW YORK, NEW YORK**

prepared for

NEW YORK CITY LAW DEPARTMENT

prepared by

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1.0 INTRODUCTION

TRC Engineers, Inc. (TRC) performed an environmental assessment prior to the New York City Law Department (NYCLD) re-occupancy of their office space at 100 Church Street, New York, New York. As the re-occupancy proceeded in phases, due to time constraints, all the final clearance results could not be presented in TRC's April 8, 2002 Environmental Assessment Report. A Supplemental Data Report dated May 24, 2002 was prepared to present the additional data available. Data relating to initial assessment for the twentieth floor has been presented in these reports.

As NYCLD did not initially intend to occupy the twentieth floor, TRC did not oversee the clean up of this floor as it did for floors 2 through 6. Subsequently as it became clear that NYCLD would occupy a section of the floor, TRC undertook an assessment of the entire floor taking into consideration the sampling already performed and reported in the initial and the supplemental reports. Samples were collected for asbestos and metals in air, microvacuum samples for asbestos in settled dust and lead in dust. Representative samples were collected from supply and return air ducts, perimeter induction units ceiling tiles horizontal non-porous surfaces, cardboard boxes and floor carpet. Elevated levels for asbestos in dust were detected in two samples from ceiling tiles and one sample from floor carpet. Slightly elevated levels of lead in dust were also detected in samples from supply ducts and horizontal surfaces. Sample results are attached in Appendix B Data Tables.

Based upon the sample results as detailed above, TRC prepared a work plan and to oversee the clean up of the twentieth floor office space currently occupied by the Business Integrity Commission and space made available to the Law Department at 100 Church Street. As the floor was partially occupied, the cleaning was performed in four phases. The building owner and operator, ZAR Management (ZAR) hired Branch Services (Branch), a New York State certified asbestos abatement company, to perform cleanup of the 20th floor at 100 Church Street. Cleaning of the entire interior space was performed according to the Work Plan utilizing wet-wiping and HEPA vacuuming protocols. A copy of the Work Plan is attached (Appendix A). The purpose of TRC's post clean up evaluation was to determine whether the NYCLD space on the twentieth floor is fit for re-occupancy subsequent to cleaning activities.

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2.0 DESCRIPTION OF WORK

The cleaning performed by Branch Services was performed in four phases. The cleaning included all air conditioning supply and return air ducts, grills, and perimeter induction units located on the 20th floor. Cleaning of all visible dust from the return air plenum including the top surface of the ceiling tiles. Cleaning of all dust bearing surfaces such as filing cabinets, computers, book shelves, storage boxes, papers, and any other vertical and horizontal surfaces including walls, floors, of all visible dust. All dust cleaning was performed top down using a HEPA vacuuming system and wet wiping with a mild detergent solution. The floor carpet was steam/wet vacuumed with a HEPA filtration system. Cleaning commenced at 6 pm on Friday and was finished for re-occupancy by 7 am following Monday. Affected personnel on the 20th floor were notified prior to commencement of cleaning activities.

The cleaning of cardboard boxes stored within the NYCLD space on the east side of the floor was completed first. The exterior of the boxes were cleaned of all visible dust. Samples for lead in dust were collected to confirm the effectiveness of the response actions. Phase I through IV was cleaned after the boxes were cleaned and moved off the floor. Each phase was isolated for air movement from the rest of the floor. Negative air machines were installed and operated to keep each phase under negative pressure prior to cleaning. TRC collected samples for asbestos and lead concentration in air outside of the isolated work area under each phase.

3.0 SAMPLING AND ANALYSIS

3.1 Air

TRC conducted air sampling to evaluate air quality and determine if areas were fit for re-occupancy. Sample results are attached in Appendix B, Data Tables. The following identifies the sampling and analysis that was conducted along with associated standards and guidelines:

- **Asbestos in Air** – Asbestos air sampling was conducted to determine airborne concentrations outside the work area. The sampling was performed using National Institute of Occupational Safety and Health (NIOSH) method 7400. Samples were analyzed by Phase Contrast Microscopy (PCM). Sample results were compared to a post-cleaning target concentration of less than 0.01 fibers per cubic centimeter of air.
- **Lead in Air** – Lead in air samples were collected by NIOSH method 7300. The samples were sent to EMSL Laboratories for analysis. EMSL is an independently owned and operated laboratory accredited by New York State Department of Health. Samples were analyzed by NIOSH Method 7082. Sample results were compared to a post-cleaning target concentration of less than 50 micrograms per cubic centimeter of air.

3.2 DUST

TRC conducted lead wipe and microvacuum sampling of residual dust to confirm the effectiveness of the response actions. TRC sampled hard surfaced items such as metal ducts, ceiling tiles, desks, bookshelves, file cabinets. The following identifies the sampling and analysis that was conducted along with associated standards and guidelines:

- **Asbestos in Dust** – Dust sampling was conducted utilizing American Society for Testing and Materials (ASTM) Test Method D5755-95 Microvacuum Sampling and Indirect Analysis (Filter Sample Analysis) of Dust by Transmission Electron Microscopy (TEM)

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for Asbestos Structure Number Concentration. A post-cleaning individual sample target concentration of less than 10,000 structures per square centimeter (str/cm²) and a geometric mean concentration of 1,000 str/cm² was established for this project.

Lead in Dust – TRC utilized United States Department of Housing and Urban Development (HUD) Wipe Sampling Guidelines. A post-cleaning lead wipe target concentration of 40 micrograms per square foot (ug/ft²) for occupied spaces and 400 ug/ft² for non-occupied spaces was established for this project. Samples were not collected from soft surfaces such as fabric and floor carpet.

All analytical work was performed by an independent laboratory certified by the New York State Department of Health (NYSDOH) under the Environmental Laboratory Accreditation Program (ELAP).

4.0 CONCLUSION

Based upon the sampling conducted to date and the evaluation of the data compared to applicable standards, guidelines and human health risk assessment protocols, TRC has determined that occupancy of the aforementioned office space on the twentieth floor at 100 Church Street is recommended.