Phoenix Environmental
CONSULTING, LLC

Environmental Assessment

Asbestos Visual Clearance Report

Services Delivered to:
Gary Chen

Company:
MH Construction Management Company

Claim Number:
N/A

Name of Insured:
Old Pagoda Theatre

Site Address:
1731 Powell Street
San Francisco, CA

Visual Inspection Date:
July 18, 2013

Report Date:
July 20, 2013

Services Provided by:
Phoenix Environmental Consulting, LLC
Greg Olachea, Senior Hygienist CAC # 10-4647

Reference Number:
MHC173VC0718

Phoenix Environmental
CONSULTING, LLC

July 20, 2013

RE: 1731 Powell Street
San Francisco, CA
Claim: N/A

Dear Mr. Chen:

In accordance with the contract between Phoenix Environmental Consulting and MH Construction Management Company, Asbestos Visual Clearance services were performed at the aforementioned property on July 18, 2013.

We urge you to read the Report in its entirely and to contact the undersigned with any questions or concerns you may have about the report. Our findings, conclusions recommendations and limitations are dicussed in the report.

We appreciate the opportunity to provide our services and look forward to assisting you with your future environmental needs.

Sincerely,

Greg Olachea,
Senior Hygienist CAC #10-4647
(510) 735-6403
greg@pecllc.org

Phoenix Environmental
CONSULTING, LLC

Environmental Assessment Report

Asbestos Visual Air Clearance

Attention:
Gary Chen
Company:
MH Construction Management Company
Claim #: **N/A**
Insured: **Old Pagoda Theatre**
Site Address:
1731 Powell Street, San Francisco, CA
Testing Date**:**
July 18, 2013
Report Date:
July 20, 2013

Summary of Results

Phoenix Environmental Consulting, provided visual inspection services following abatement from the project referenced above by contractor: **RESTORATION MANAGEMENT COMPANY**. Upon completion of the project, Phoenix Environmental Consulting performed a visual inspection and confirmation of contracted material removal of the work area.

Restoration Management Company was contracted to remove 2 sections of 2x2 penetration mastic from the roof of the old Pagoda Theatre.

Visual inspection of the roof showed all loose debris had been removed. *Final inspeciton of the property revealed 100% removal of all contracted materials*

Methods of Analysis - (Air Clearance Only-Not Applicable)

Air samples were collected from inside the work area upon completion of the removal of asbestos containing materials. Air is drawn into a 25-millimeter (25mm) diameter cassette equipped with a 2-inch conductive cowl and 0.8 micron mixed cellulose ester membrane. The samples were analyzed using Phase Contrast Microscopy (PCM), using the NIOSH 7400A method. This method does not distinguish between asbestiform and non-asbestiform fibers and does not report the presence of fibers less than 5 microns in length.

Definitions

Asbestos

A term for naturally occurring fibrous minerals. Asbestos includes chrysotile, crocidolite, amosite (cummingtonite-grunerite asbestos), tremolite asbestos, actinolite asbestos, anthophyllite asbestos, and any of these minerals that have been chemically treated and/or altered. The precise chemical formulation of each species will vary with the location from which it was mined.

Asbestos Fiber
A fiber of asbestos which meets the criteria specified below for a fiber.

Aspect Ratio
The ratio of the length of a fiber to it's diameter (e.g. 3:1, 5:1 aspect ratios).

Cleavage Fragments
Mineral particles formed by comminution of minerals, especially those characterized by parallel sides and a moderate aspect ratio (usually less than 20:1).

Detection Limit
The number of fibers necessary to be 95% certain that the result is greater than zero.

Differential Counting
The term applied to the practice of excluding certain kinds of fibers from the fiber count because they do not appear to be asbestos.

Fiber
A particle that is 5 µm or longer, with a length-to-width ratio of 3 to 1 or longer.

Field
The area within the graticule circle that is superimposed on the microscope image.

Set
The samples which are taken, submitted to the laboratory, analyzed, and for which, interim or final result reports are generated.

Tremolite, Anthophyllite, and Actinolite
The non-asbestos form of these minerals which meet the definition of a fiber. It includes any of these minerals that have been chemically treated and/or altered.

Walton-Beckett Graticule
An eyepiece graticule specifically designed for asbestos fiber counting. It consists of a circle with a projected diameter of 100 ± 2 µm (area of about 0.00785 $mm^{(2)}$) with a crosshair having tic-marks at 3-µm intervals in one direction and 5-µm in the orthogonal direction. There are marks around the periphery of the circle to demonstrate the proper sizes and shapes of fibers. The disk is placed in one of the microscope eyepieces so that the design is superimposed on the field of view.

1.1. History

Early surveys to determine asbestos exposures were conducted using impinger counts of total dust with the counts expressed as million particles per cubic foot. The British Asbestos Research Council recommended filter membrane counting in 1969. In July 1969, the Bureau of Occupational Safety and Health published a filter membrane method for counting asbestos fibers in the United States. This method was refined by NIOSH and published as P & CAM 239. On May 29, 1971, OSHA specified filter membrane sampling with phase contrast counting for evaluation of asbestos exposures at work sites in the United States. The use of this technique was again required by OSHA in 1986. Phase contrast microscopy has continued to be the method of choice for the measurement of occupational exposure to asbestos.

1.2. Principle

Air is drawn through a MCE filter to capture airborne asbestos fibers. A wedge shaped portion of the filter is removed, placed on a glass microscope slide and made transparent. A measured area (field) is viewed by PCM. All the fibers meeting defined criteria for asbestos are counted and considered a measure of the airborne asbestos concentration.

1.3. Advantages and Disadvantages

There are four main advantages of PCM over other methods:

1. The technique is specific for fibers. Phase contrast is a fiber counting technique which excludes non-fibrous particles from the analysis.
2. The technique is inexpensive and does not require specialized knowledge to carry out the analysis for total fiber counts.
3. The analysis is quick and can be performed on-site for rapid determination of air concentrations of asbestos fibers.
4. The technique has continuity with historical epidemiological studies so that estimates of expected disease can be inferred from long-term determinations of asbestos exposures.

The main disadvantage of PCM is that it does not positively identify asbestos fibers. Other fibers which are not asbestos may be included in the count unless differential counting is performed. This requires a great deal of experience to adequately differentiate asbestos from non-asbestos fibers. Positive identification of asbestos must be performed by polarized light or electron microscopy techniques. A further disadvantage of PCM is that the smallest visible fibers are about 0.2 µm in diameter while the finest asbestos fibers may be as small as 0.02 µm in diameter. For some exposures, substantially more fibers may be present than are actually counted.

1.4. Workplace Exposure

Asbestos is used by the construction industry in such products as shingles, floor tiles, asbestos cement, roofing felts, insulation and acoustical products. Non-construction uses include brakes, clutch facings, paper, paints, plastics, and fabrics. One of the most significant exposures in the

workplace is the removal and encapsulation of asbestos in schools, public buildings, and homes. Many workers have the potential to be exposed to asbestos during these operations.

About 95% of the asbestos in commercial use in the United States is chrysotile. Crocidolite and amosite make up most of the remainder. Anthophyllite and tremolite or actinolite are likely to be encountered as contaminants in various industrial products.

1.5. Physical Properties

Asbestos fiber possesses a high tensile strength along its axis, is chemically inert, non-combustible, and heat resistant. It has a high electrical resistance and good sound absorbing properties. It can be weaved into cables, fabrics or other textiles, and also matted into asbestos papers, felts, or mats.

1.6. Toxic Effects

Information contained in this section is a synopsis of current knowledge of the physiological effects of asbestos and is not intended as a basis for OSHA policy.

Some possible physiologic results of respiratory exposure to asbestos are mesothelioma of the pleura or peritoneum, interstitial fibrosis, asbestosis, pneumoconiosis, or respiratory cancer. The possible consequences of asbestos exposure are further detailed in reference 8.8 or in the asbestos standard preamble.

2. Range and Detection Limit

2.1. The ideal counting range on the filter is 100 to 1,300 fibers/$mm^{(2)}$. With a Walton-Beckett graticule this range is equivalent to 0.8 to 10 fibers/field. Using NIOSH counting statistics, a count of 0.8 fibers/field would give an approximate coefficient of variation (CV) of 0.13.

2.2. The detection limit for this method is 4.0 fibers per 100 fields or 5.5 fibers/$mm^{(2)}$. This was determined using an equation to estimate the maximum CV possible at a specific concentration (95% confidence) and a Lower Control Limit of zero. The CV value was then used to determine a corresponding concentration from historical CV vs fiber relationships. As an example: Lower Control Limit (95% Confidence) = AC - 1.645(CV)(AC)

Where:
AC = Estimate of the airborne fiber concentration (fibers/cc)
Setting the Lower Control Limit = 0 and solving for CV:
0 = AC - 1.645(CV)(AC)
CV = 0.61 This value was compared with CV vs. count curves. The count at which CV = 0.61 for Leidel-Busch counting statistics or for an OSHA Salt Lake Technical Center (OSHA-SLTC) CV curve (see Appendix A for further information) was 4.4 fibers or 3.9 fibers per 100 fields, respectively. Although a lower detection limit of 4 fibers per 100 fields is supported by the OSHA-SLTC data, both data sets support the 4.5 fibers per 100 fields value.

3. Method Performance - Precision and Accuracy

Precision is dependent upon the total number of fibers counted and the uniformity of the fiber distribution on the filter. A general rule is to count at least 20 and not more than 100 fields. The count is discontinued when 100 fibers are counted, provided that 20 fields have already been counted. Counting more than 100 fibers results in only a small gain in precision. As the total count drops below 10 fibers, an accelerated loss of precision is noted. At this time, there is no known method to determine the absolute accuracy of the asbestos analysis. Results of samples prepared through the Proficiency Analytical Testing (PAT) Program and analyzed by the OSHA-SLTC showed no significant bias when compared to PAT reference values. The PAT samples were analyzed from 1987 to 1989 (N=36) and the concentration range was from 120 to 1,300 fibers/mm$^{(2)}$.

4. Interferences

Fibrous substances, if present, may interfere with asbestos analysis. Some common fibers are:

Fiber Glass	Synthetic Fibers	Perlite Veins
Anhydrite	Sponge Spicules	Plant Fibers
Gypsum	Wollastonite	Microorganisms
Membrane Structures	Diatoms	

The use of electron microscopy or optical tests such as polarized light, and dispersion staining may be used to differentiate these materials from asbestos when necessary.

Contact Information

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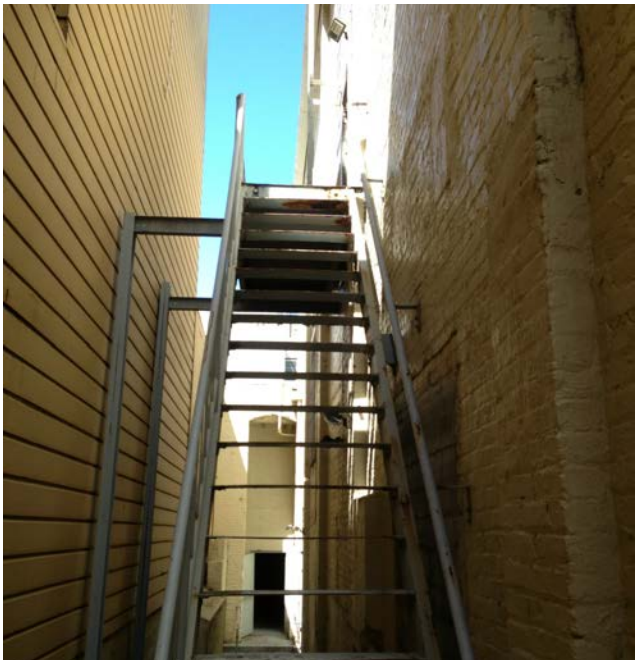
1731 Powell Street, San Francisco, CA



Entrance to roof

Roof

Penetration 1 – ACM Removed

Penetration 2 – ACM Removed