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August 11, 2020

Mr. Paul Martinez
PMM CONSULTING ENGINEERS
6262 Bird Road, Suite 2D
Miami, Florida, 33155

Re: **Asbestos Roof Survey**
Towers of Key Biscayne
1121 Crandon Boulevard
Key Biscayne, Miami-Dade County, Florida 33149
PSI Project No.: 07843121

Dear Mr. Martinez:

In accordance with our signed agreement dated November 8, 2019, Professional Service Industries, Inc. (PSI) has performed a Renovation Asbestos Survey of the above referenced property. Please find one copy of the final report enclosed.

Thank you for choosing PSI as your consultant for this project. If you have any questions, or if we can be of additional service, please call us at 305-471-7725.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Manuel Porras
Project Manager
Industrial Hygiene Services

Michael Rothenburg, P.E., CIH
Florida Licensed Asbestos Consultant #EA41

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Department Manager/Principal Consultant
South Florida Environmental Group

MP/MR/EJE

Enclosures



ASBESTOS ROOF SURVEY REPORT

FOR

**TOWERS OF KEY BISCAYNE
1121 CRANDON BOULEVARD
KEY BISCAYNE, MIAMI-DADE COUNTY, FLORIDA**

PREPARED FOR

**PMM CONSULTING ENGINEERS
6262 BIRD ROAD, Suite 2D
MIAMI, FLORIDA, 33155**

PREPARED BY

**PROFESSIONAL SERVICE INDUSTRIES, INC.
7950 NW 64TH STREET
MIAMI, FLORIDA 33166
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PSI PROJECT NO. 07843121

August 11, 2020

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1. EXECUTIVE SUMMARY

Professional Service Industries, Inc. (PSI) was retained by PMM Consulting Engineers to perform an Asbestos Roof survey of the existing Towers of Key Biscayne located at 1121 Crandon Boulevard, in Key Biscayne, Miami-Dade County, Florida. These services were conducted at the request of the client for the planned roofing activities.

The scope of the Asbestos Roof Survey was to identify, quantify and assess the condition of suspect asbestos containing materials (ACM) effected by the planned re-roofing activities, as well as the collection and analysis of bulk samples. The inspection was conducted on August 6, 2020 by U.S. Environmental Protection Agency (EPA) accredited inspector Mr. Manuel Porras of PSI, under the direction of PSI Principal Consultant, Mr. Michael Rothenburg.

Based on the methodologies described in this report, ACM was not identified in any of the samples collected from the subject site.

2. INTRODUCTION

An Asbestos Roof Survey of the Towers of Key Biscayne located at 1121 Crandon Boulevard, in Key Biscayne, Miami-Dade County, Florida. has been conducted by PSI to identify ACM effected by the planned roofing activities. The survey was conducted on August 6, 2020.

The survey was generally conducted in four phases as follows:

- **Phase 1 – Record Document Review-** Drawings, floor plans, historical data or other documents provided to PSI or made available on site were evaluated for the general construction history and layout of the facility. Other documents such as maintenance records, operation and maintenance plans, and laboratory results, etc., provided to PSI or made available on site were also reviewed. This data was used to focus the walk through and scope of work to be followed over the course of our visual inspection and sampling.
- **Phase 2 – Visual Inspection-** A visual inspection of the facility was conducted to identify, quantify and assess the condition of suspect ACM materials that could represent an environmental concern. The inspection team accessed each area and recorded suspect ACM, suspect materials. Each material or impacted material was visually estimated for total quantity within the space. The condition and friability were also recorded.
- **Phase 3 – Sample Collection and Analysis-** Samples were collected for each suspect homogeneous area. Asbestos samples were collected for each suspect homogeneous area and were submitted to a nationally accredited laboratory for analysis by Polarized Light Microscopy (PLM).
- **Phase 4 - Project Report -** This report outlines the assessment findings based on the interviews, testing results and field observations. The report also discusses other observations concerning the workplace as they impacted the sampling events. This report includes a discussion of sampling methodology, locations, analytical methods, results, and conclusions.

2.1 AUTHORIZATION

Authorization to perform this survey was given by a signed contract between PMM Consulting Engineers and PSI, dated November 8, 2019.

2.2 SITE DESCRIPTION

The subject site consisted of two (2) apartment building towers located at 1121 Crandon Boulevard, in Key Biscayne, Miami-Dade County, Florida. The roof of the buildings was comprised of built-up bitumen with fiberboard insulation over lightweight concrete. The areas surveyed occupied approximately 15,000 square feet-up.

2.3 PROJECT BACKGROUND

The purpose of this survey was conducted on the building for planned re-roofing activities. PSI was not provided site plans for review prior to conducting the survey.

2.4 PURPOSE AND SCOPE

The purpose of this survey was to determine the presence of ACM in the areas affected by the planned re-roofing activities.

The survey was completed in general accordance with the authorized scope of work as identified in the contract between PSI and the client.

3. ASSESSMENT ACTIVITIES

The visual inspection and sampling activities were conducted on August 6, 2020 by Mr. Manuel Porras of PSI. Prior to the commencement of the survey activities, the client provided site contact information and assisted in providing access to the facility.

3.1 RECORD DOCUMENT REVIEW

PSI did not review drawings, floor plans, historical data, maintenance records, previous survey reports, laboratory reports or other documents for information regarding construction history and building materials for review.

3.2 VISUAL INSPECTION

PSI's inspector accessed each area affected by the planned renovation activities to identify suspect homogenous areas of ACM. Suspect ACMs were categorized into homogeneous areas on the basis of color, texture, appearance, use and apparent construction era (where available). Each homogeneous area was given a unique material description. Quantities were visually estimated by the inspectors.

In addition to identification of each material and quantities, the inspectors also determined friability for suspect ACMs. A friable material is defined as any material able to be crushed, crumbled, pulverized or reduced to a powder by hand pressure when dry. The inspectors used a hand pressure test to determine friability. Each material was further assessed for overall condition. Conditions were rated as good, fair or poor. Materials in good condition included those materials which were in the same condition as when installed showing only minor age deterioration. Materials in fair condition included those materials which had apparent age deterioration and minor damage; however, the matrix of the material remained substantially intact. Materials in poor condition included all materials with damage or significant damage and evidence that the material's matrix has failed or has begun to fail.

3.3 SAMPLING AND ANALYSIS

PSI's asbestos inspector, under the supervision of a Principal Consultant developed a sampling scheme for suspect ACM at the facility.

- PSI did not sample any system which presented a hazard to the inspection team such as energized electrical systems or within confined spaces.
- PSI analyzed 14 samples by PLM.
- PSI only sampled materials associated with the planned re-roofing activities.

Samples were submitted to EMSL's asbestos laboratory in North Miami, Florida. EMSL's laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), accreditation No. 200204-0. Samples were analyzed by Polarized Light Microscopy (PLM) 600/R-93/116 July 1993: "Method for the Determination of Asbestos in Bulk Building Materials.", which is the EPA recommended method for bulk sample analysis. The U.S. National Institute of Standards and Technology (NIST) accredits PSI's laboratory under the NVLAP for the analysis of bulk asbestos.

Samples were dried, homogenized, and representative portions were examined with a stereo binocular microscope. If no asbestos is found in a sample, "NAD" (No Asbestos Detected) is reported. If asbestos is found in a sample, the percentage and type of asbestos is reported.

If a material is found to contain 10% or less asbestos via visual estimation, it can be treated as non-asbestos-containing per EPA Regulations, if verified to contain 1% or less asbestos by the Point Count Quantification Procedure. If not point counted, a sample in which asbestos was visually detected and estimated (including trace to $\leq 1\%$) must be assumed to be greater than 1% and treated as ACM. Please refer to the laboratory analyses for a more detailed description of the microscopic analysis of individual samples. Samples were not quantified by the Point Count Procedure in this Asbestos Survey.

4. CONCLUSIONS

PSI has performed an Asbestos Roof Survey of the subject site in general accordance with the signed agreement between PMM Consulting Engineers dated November 8, 2019. Based on the results of this assessment, the following conclusions have been developed.

4.1 ASBESTOS CONTAINING MATERIALS

During the visual inspection, PSI tested 7 homogenous areas of suspect ACM and collected 14 samples representing these materials. A complete detail of all suspect materials, locations, quantities and conditions may be found in the following table and in the appendices of this report. The following data is a summary of materials sampled as part of this survey.

Homogeneous Area Description	Location(s) in the facility	Friable (F/NF)	Total Estimated Quantity	Percent Asbestos
Flashing	Roof Sections A, B, C, D, E & F	NF	9,000 SF	NAD
Membrane	Roof Sections A, B, C, D, E & F	NF	15,000 SF	NAD
Lightweight Concrete	Roof Sections A, B, C, D, E & F	NF	15,000 SF	NAD
Roof Cement (Pipe Vents)	Roof Sections A, B, C, D, E & F	NF	3,000 SF	NAD
Roof Cement (Pitch Pans)	Roof Sections A, B, C, D, E & F	NF	4,000 SF	NAD
White Caulking (Sheet Metal)	Roof Sections A, B, C, D, E & F	NF	2,000 SF	NAD
Stucco (Walls)	Roof Sections A, B, C, D, E & F	NF	10,000 SF	NAD

Notes: NF=Non-Friable, SF= Square Feet, NAD= No Asbestos Detected

Data Interpretation

A material is considered an ACM if at least one sample from the homogenous area is confirmed to contain greater than one percent asbestos (>1.0%) under laboratory analysis. In addition, the U.S. Occupational Safety and Health Administration (OSHA) construction standard considers all thermal systems insulation and surfacing materials in a facility constructed prior to 1981 to be presumed asbestos containing (PACM) and all flooring to be assumed asbestos containing unless it is demonstrated through laboratory analysis to contain 1.0% asbestos or less. The EPA National Emission Standards for Hazardous Air Pollutants further classifies ACM as regulated (RACM), Category I non-friable ACM or Category II non-friable ACM.

Based on the methodologies described in this report, ACM was not identified in any of the samples collected from the subject site.

If additional suspect ACM is identified during any future renovation activities, work should be halted, and a Florida Licensed Asbestos Consultant retained to assess the materials.

5. WARRANTY

The information contained in this report is based upon the data furnished by the Client and observations and test results provided by PSI. These observations and results are time dependent, are subject to changing site conditions, and revisions to Federal, State and local regulations.

PSI warrants that these findings have been promulgated after being prepared in general accordance with generally accepted practices in the asbestos, lead-based paint and hazardous materials abatement industries.

No other warranties are implied or expressed.

Use by Third Parties

This report was prepared pursuant to the contract PSI has with PMM Consulting Engineers. That contractual relationship included an exchange of information about the subject site that was unique and between PSI and its client and serves as the basis upon which this report was prepared. Because of the importance of the communication between PSI and its client, reliance or any use of this report by anyone other than PMM Consulting Engineers, for whom it was prepared, is prohibited and therefore not foreseeable to PSI.

Reliance or use by any such third party without explicit authorization in the report does not make said third party a third-party beneficiary to PSI's contract with the client. Any such unauthorized reliance on or use of this report, including any of its information or conclusions, will be at third party's risk. For the same reasons, no warranties or representations, expressed or implied in this report, are made to any such third party.

Unidentifiable Conditions

This report is necessarily limited to the conditions observed and to the information available at the time of the work. Due to the nature of the work, there is a possibility that there may exist conditions which could not be identified within the scope of work or which were not apparent at the time of our site work. This report is also limited to information available from the client at the time it was conducted. The report may not represent all conditions at the subject site as it only reflects the information gathered from specific locations.



Project Number: 0784-3121
Asbestos Roof Survey – Towers of Key Biscayne
August 11, 2020

**APPENDIX A:
ASBESTOS FIELD DATA WORKSHEET**



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**APPENDIX B:
LABORATORY ANALYTICAL REPORTS (ACM)**



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**APPENDIX C:
PERSONNEL AND LABORATORY CERTIFICATIONS**