

**ADDENDUM TO ASBESTOS REMOVAL AND PARTIAL DEMOLITION OF  
409 WEST 2<sup>ND</sup> AVENUE**

Addendum Number: **1**

Date Issued: **September 23, 2014**

- I. This addendum is hereby made as part of the bid packet issued for the City of Casa Grande **Asbestos Removal and Partial Demolition of 409 West 2<sup>nd</sup> Avenue**, and therefore must be attached to the bid packet response from the bidders.
  
- II. For your reference, attached is a copy of the Pre-Demolition Asbestos Survey and Summary.

*Note: A signed copy to this addendum is to be returned with the Contractor's proposal. The Contractor shall also acknowledge this addendum in the space provided.*

-----  
Contractor's Signature & Date

-----  
Company Name

OLE A. SOLBERG, P.E.  
CONSULTING ENGINEER

## Pre-Demolition Asbestos Survey

Location:

**Single Family Residence (SFR) 409 W 2nd Ave  
409 W 2nd Ave  
Casa Grande, Arizona 85122**

Prepared for:

Jeff Palmer, Code Enforcement Inspector  
City of Casa Grande  
510 E. Florence Blvd  
Casa Grande, AZ 85122

Project Number 214048

Prepared by:



*[Signature]* exp 3/31/16  
Ole A. Solberg, P. E.

September 10, 2014

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*[Handwritten Signature]*  
20p 7/31/16

## 1.0 SUMMARY

Site Description.....SFR 409 W 2nd Ave  
Site Location .....409 W 2nd Ave, Casa Grande, Arizona, 85122  
Contact .....Jeff Palmer                      Phone Number .....(520) 421-8685  
Type of Inspection .....Complete NESHAPS Demolition Inspection  
Date Inspected.....September 9, 2014  
Inspector.....Ole A. Solberg, P.E.  
Inspector's EPA/AHEARA Certificate Number ....F 9960                      Training Provider .....TAI  
Certificate Expiration Date .....May 2, 2015  
Number of homogenous areas identified .....12  
Number of samples taken.....20  
Homogenous areas assumed positive.....None

### 1.1 Asbestos Summary

**Functional Space:** Building

**Category I Non Friable Material** (may be demolished in place, must be removed if burned)

| Homogenous Area | Amount | U/M  | Result    |
|-----------------|--------|------|-----------|
| Green Linoleum  | 1,240  | SqFt | Positive  |
| Window Caulk    | 6      | SqFt | Positive* |

\*Listed as assumed in the database report but see Sample 2-1 lab result for analysis

**Category II Non-Friable Material** (required removal depends on demolition methods used, must be removed if burned)

| Homogenous Area | Amount | U/M | Result |
|-----------------|--------|-----|--------|
| None            | N/A    |     | N/A    |

**Category II Friable Material** (must be removed if demolished or burned)

| Homogenous Area            | Amount | U/M  | Result   |
|----------------------------|--------|------|----------|
| Acoustical Ceiling Texture | 225    | SqFt | Positive |

## **2.0 INSPECTION DESCRIPTION**

An asbestos survey was performed on a SFR at 409 W 2nd Ave, Casa Grande on September 9, 2014, by Ole A. Solberg, P.E., as requested by Jeff Palmer of the City of Casa Grande. The purpose of this survey was to identify asbestos-containing materials (ACM's) used in the construction of the building prior to demolition. This survey was performed in general accordance with the guidelines set forth in U.S. Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) Part 763 Asbestos-Containing Materials in Schools: Final Rule and Notice (AHERA), and 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP); Asbestos NESHAP Revision; Final Rule.

This survey was destructive in nature and all accessible materials were sampled for asbestos. Hidden pipes, locked rooms, etc. were not sampled. Commonly known building materials that contain asbestos were assumed to contain asbestos. The sampling of the building materials (i.e., floors, walls, ceiling, insulation, roofs, thermal pipe insulation, and other miscellaneous materials) were performed on a homogenous-area basis. A homogeneous material is defined as uniform in color and texture. Friable and nonfriable materials were sampled and tested. Friable asbestos material, as defined by NESHAP, is any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Only those areas and materials identified in this report were surveyed. All other areas and materials of construction not identified in this report must be assumed to be asbestos containing material unless they are surveyed and or sampled by an EPA certified AHERA inspector. Twenty bulk samples were collected from the subject site during this survey. Multiple homogenous areas were identified during the survey. None of the homogenous areas were assumed with the presence of asbestos. Homogenous Area 13 is listed as assumed in the database report but see the lab analysis for sample 2-1 for results.

## **3.0 LIMITATIONS**

This report has been prepared in accordance with generally accepted practices for use by the client for evaluation purposes. The named inspector observed that degree of care and skill generally exercised by the profession under similar circumstances and conditions.

This report does not, in any way, represent a warranty or guarantee that there are no asbestos containing material (ACM) within the building, or within building components that are not accessible or sampled during the survey. Destructive sampling was undertaken during the survey. It should be noted that the ACM test program results were based on the named inspector's field investigation and analyses of selected samples which are assumed to be representative of the materials within the structure. It is recommended that, unless a renovation area/material has been sampled and shown through analysis to be negative, the material should be assumed to be asbestos-containing, until sampled and analyzed for the presents of asbestos.

This report has been prepared on behalf of and for the exclusive use of the City of Casa Grande, solely for their use and reliance in the evaluation of this site. This report and the findings contained

herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of the City of Casa Grande.

## **4.0 SITE INFORMATION**

### **4.1 Site Inspection**

An asbestos survey was performed on Sept 9, 2014, by Ole A. Solberg, P.E., an EPA/AHERA accredited Asbestos Inspector No. F 9960. The purpose of this survey was to identify ACM's used in the construction of the buildings on the subject site prior to demolition.

### **4.2 Site Description**

The subject site is a fire damaged single family residence. Exterior walls are wood frame or CMU with exterior stucco. Interior partitions are wood frame with predominately wood paneling with some gypsum wallboard. Floors are wood frame over a crawl space in the original structure and slab on grade for most of the structure. Floor covering is carpet or multiple styles of vinyl floor tile or linoleum. The roof is wood frame with asphaltic shingle cover. The enclosed porch has a built up roof cover. Ceilings are wood or gypsum wallboard. One room has acoustical ceiling texture. Assessor records indicate a 1924 construction date. There have been multiple additions. The fire damage is to most of the ceilings and roof structure. The site is located at 409 W 2nd Ave, Casa Grande, Arizona.

### **4.3 Review of Building Plans**

No building plans were available for review.

### **4.4 Review of Prior Surveys**

No prior surveys were available for review.

## **5.0 SAMPLING AND ANALYTICAL METHODOLOGY**

### **5.1 Sampling Methods**

A complete visual inspection was performed to acquaint the inspector with a total perspective of the building. Homogenous areas were mapped where building materials of the same type; style and composition were used in the same manner.

All of the samples were collected in general accordance with AHERA and NESHAP guidelines. Materials were determined to be friable or non-friable by touch. Representative samples were taken in random/convenience fashion of the homogeneous areas, using variations of the EPA random sample pattern. Samples were obtained by physically removing a small portion of the material using wet methods and a slicing technique. All layers of the material sampled were penetrated, and the disturbance of the adjacent material was kept at a minimum. The sample was then placed into a labeled container and sealed. The sampling instrument was then wiped with a

wet disposable towel to remove material that could contaminate the next sample. All samples were labeled, identifying the sample number, then logged into a Chain-of-Custody with a brief description of the sampling material. The sample number and a description of the homogenous material sampled were marked on a copy of the building plans when available. The survey was non-destructive: therefore, hidden pipe chases, locked rooms, and restricted areas were not accessed for inspection.

Bulk samples were submitted for analysis to Fiberquant, Inc. and cross-referenced to the locations in which they were taken to determine which areas of the structure have asbestos containing building materials. Chain-of-Custody protocols were followed throughout the collection and analysis process.

## **5.2 Analytical Methods**

The samples that were collected from the subject site were delivered with a proper Chain-of-Custody to a Phoenix laboratory, Fiberquant, Inc. Fiberquant's laboratory is fully accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) # 101031-0. The analytical procedure used for bulk samples is EPA 40 CFR, Ch 1, Pt 763, Subpart F, App A, Polarized Light Microscopy with Dispersion Staining.

## **6.0 BULK SAMPLE ANALYSIS AND HOMOGENOUS AREAS**

### **6.1 Laboratory Results**

Copies of the lab results are provided in the Appendix C.

## **7.0 RECOMMENDATIONS**

Current National Emissions Standard for Hazardous Air Pollutants (NESHAP) regulations classify ACM into the following categories: Category I materials, Category II non-friable materials and Category II friable materials that are called Regulated Asbestos Containing Materials (RACM).

Category I materials are resilient floor coverings, gaskets, packing and roofing materials containing greater than 1% asbestos. Category I materials only need to be removed from a structure prior to demolition, renovation or repair if they are in poor condition, are friable, or would be subjected to sanding, cutting or abrading. Category I materials that remain intact without significant breakage would not require removal prior to demolition.

The following materials were tested positive for asbestos or was assumed to contain asbestos and are classified as Category I material.

### **Building**

- Green Linoleum
- Window Caulk

All of the materials are in good condition and can be demolished in place.

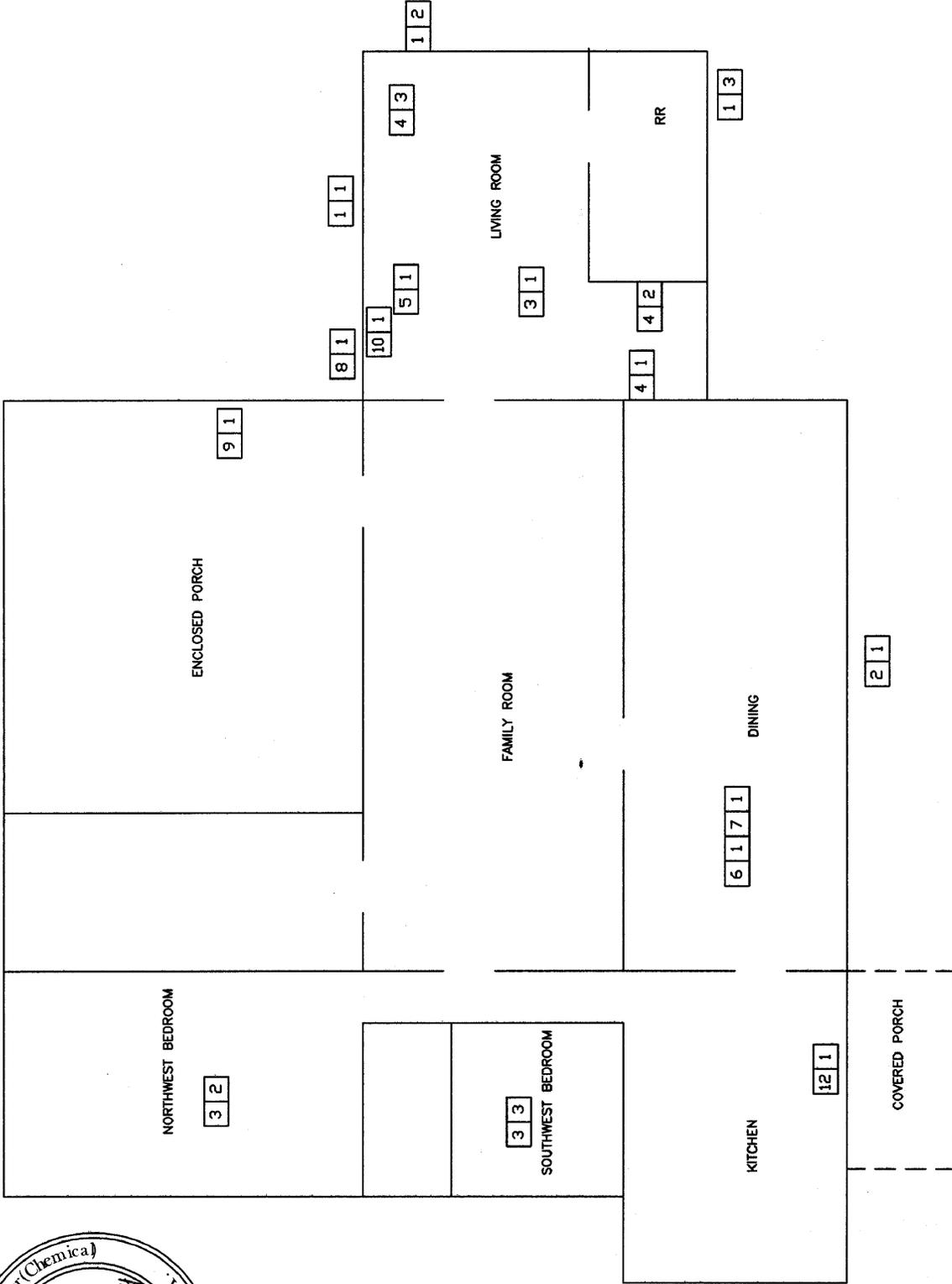
Category II materials are all other ACM's. Category II material is broken down into two sub-categories which are Category II non-friable ACM and Category II friable ACM. Category II nonfriable ACM is any material, excluding Category I, containing greater than 1 % asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand. These items do become friable during normal demolition activities and thus are considered regulated. No Category II material was found.

RACM are any materials containing more than 1% asbestos that, when dry can be crumbled, pulverized, or reduced to powder by hand pressure or cause an emission (Category II friable ACM's). RACM's must be removed prior to demolition or renovation activities and disposed of in a landfill, which has been approved to accept asbestos.

The following materials were tested positive for asbestos or was assumed to contain asbestos and are classified as RACM material.

Building

Acoustical Ceiling Texture



Registered Professional Engineer (Chemical)  
 CERTIFICATE NO. 25999  
 OLE A. SOLBERG  
 Date Signed: 7/19/14  
 ARIZONA  
 EXPIRES 3/31/16

LOCATION:  
 409 W 2nd Ave  
 Casa Grande, AZ 85122  
 Drawing is approximate and not to scale

|                  |                          |                             |                |
|------------------|--------------------------|-----------------------------|----------------|
| Date: 9/9/2014   | Drawn By: Ole A. Solberg | Job Name: 409 W 2nd Ave SFR | Job No: 214048 |
| Sample Locations |                          | Dwg No: 1                   | Rev            |

HA - Homogenous Area  
 # - Sample Number

# List of Homogenous Areas

Project Name 409 W 2nd Ave SFR NESHAPs

Job Number 214048

Functional Area # 1

Functional Area Description Building

| Area # | Homogenous Area Description | Amount   | Type      | Friable     | Test Status | Category |
|--------|-----------------------------|----------|-----------|-------------|-------------|----------|
| 1      | Exterior Stucco New         | 650 SF   | Surfacing | Non-Friable | Negative    | NR       |
| 2      | Exterior Stucco Old         | 1,000 SF | Surfacing | Non-Friable | Negative    | NR       |
| 3      | Gypsum Wallboard            | 940 SF   | Misc      | Friable     | Negative    | NR       |
| 4      | Acoustical Ceiling Texture  | 225 SF   | Surfacing | Friable     | Positive    | RACM     |
| 5      | Carpet                      | 1,090 SF | Misc      | Non-Friable | Negative    | NR       |
| 6      | Vinyl Floor Tile Black      | 210 SF   | Misc      | Non-Friable | Negative    | NR       |
| 7      | Vinyl Floor Tile White      | 210 SF   | Misc      | Non-Friable | Negative    | NR       |
| 8      | Asphaltic Shingle White     | 2,200 SF | Misc      | Non-Friable | Negative    | NR       |
| 9      | Built Up Roofing            | 495 SF   | Misc      | Non-Friable | Negative    | NR       |
| 10     | Linoleum Green              | 1,240 SF | Misc      | Non-Friable | Positive    | Cat I    |
| 11     | Building Paper              | 1,850 SF | Misc      | Friable     | Negative    | NR       |
| 12     | Vinyl Floor Tile Green      | 110 SF   | Misc      | Non-Friable | Negative    | NR       |
| 13     | Window Caulk                | 6 SF     | Misc      | Non-Friable | Assumed     | Cat I    |

ACM - Asbestos Containing Material

Cat I - Category I ACM

Cat II - Category II ACM

RACM - Regulated ACM

NR - Not Regulated, No ACM

Inspector

Ole A. Solberg

Signature



Date

9/17/14

# Bulk Sample Log

**Project Name** 409 W 2nd Ave SFR NESHAPs  
**Project Number** 214048

**Functional Area #** 1

**Functional Area Description:** Building

**Homogenous Area #** 1  
**Description** Exterior Stucco New  
**Amount of Material** 650 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Surfacing  
**Friability Category:** Non-Friable  
**Category** NR

| Sample Number | Sample Location                   | Date Sampled | Time Sampled | Result   |
|---------------|-----------------------------------|--------------|--------------|----------|
| 1-1           | Front Door East Side of Frame 1 H | 9/9/2014     | 8:23 AM      | Negative |
| 1-2           | East Exterior Wall 6 South 4 H    | 9/9/2014     | 8:25 AM      | Positive |
| 1-3           | South Exterior Wall 5 West 4 H    | 9/9/2014     | 8:27 AM      | Negative |

**Homogenous Area #** 2  
**Description** Exterior Stucco Old  
**Amount of Material** 1,000 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Surfacing  
**Friability Category:** Non-Friable  
**Category** NR

| Sample Number | Sample Location                  | Date Sampled | Time Sampled | Result   |
|---------------|----------------------------------|--------------|--------------|----------|
| 2-1           | South Exterior Wall 22 East 3 H  | 9/9/2014     | 8:29 AM      | Negative |
| 2-2           | West Exterior Wall 1 North 4 H   | 9/9/2014     | 8:31 AM      | Negative |
| 2-3           | West Exterior Wall 7 North 0.5 H | 9/9/2014     | 8:33 AM      | Negative |

**Homogenous Area #** 3  
**Description** Gypsum Wallboard  
**Amount of Material** 940 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Friable  
**Category** NR

| Sample Number | Sample Location                        | Date Sampled | Time Sampled | Result   |
|---------------|--|--------------|--------------|----------|
| 3-1           | Northeast Bedroom Floor 4 West 4 North | 9/9/2014     | 8:46 AM      | Negative |
| 3-2           | Northwest Bedroom Floor 6 West 5 North | 9/9/2014     | 8:44 AM      | Negative |
| 3-3           | Southwest Bedroom Floor 5 West 5 North | 9/9/2014     | 8:42 AM      | Negative |

Inspector: Ole A. Solberg P.E.

Signature 

Accreditation Agency:  
The Asbestos Institute

State:  
EPA

Accreditation #  
F9960

Date Issued:  
5/2/2014

**Project Name** 409 W 2nd Ave SFR NESHAPs  
**Project Number** 214048

**Homogenous Area #** 4  
**Description** Acoustical Ceiling Texture  
**Amount of Material** 225 SF  
**Asbestos Containing Material:** Positive

**Manner of Sampling:** Random  
**Type of Suspect Material:** Surfacing  
**Friability Category:** Friable  
**Category** RACM

| Sample Number | Sample Location                     | Date Sampled | Time Sampled | Result   |
|---------------|-------------------------------------|--------------|--------------|----------|
| 4-1           | Living Room Ceiling 14 West 6 South | 9/9/2014     | 8:54 AM      | Positive |
| 4-2           | Living Room Floor 12 West 12 South  | 9/9/2014     | 8:55 AM      | Positive |
| 4-3           | Living Room Floor 3 West 1 South    | 9/9/2014     | 8:57 AM      | Positive |

**Homogenous Area #** 5  
**Description** Carpet  
**Amount of Material** 1,090 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** NR

| Sample Number | Sample Location                    | Date Sampled | Time Sampled | Result   |
|---------------|------------------------------------|--------------|--------------|----------|
| 5-1           | Living Room Floor 9 West 2.5 South | 9/9/2014     | 8:59 AM      | Negative |

**Homogenous Area #** 6  
**Description** Vinyl Floor Tile Black  
**Amount of Material** 210 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** NR

| Sample Number | Sample Location                 | Date Sampled | Time Sampled | Result   |
|---------------|---------------------------------|--------------|--------------|----------|
| 6-1           | Dining Room Floor 4 East 4 West | 9/9/2014     | 8:38 AM      | Negative |

**Homogenous Area #** 7  
**Description** Vinyl Floor Tile White  
**Amount of Material** 210 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** NR

| Sample Number | Sample Location                 | Date Sampled | Time Sampled | Result   |
|---------------|---------------------------------|--------------|--------------|----------|
| 7-1           | Dining Room Floor 4 East 4 West | 9/9/2014     | 8:40 AM      | Negative |

Inspector: Ole A. Solberg P.E.

Signature 

Accreditation Agency:  
The Asbestos Institute

State:  
EPA

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F9960

Date Issued:  
5/2/2014

**Project Name** 409 W 2nd Ave SFR NESHAPs  
**Project Number** 214048

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**Homogenous Area #** 8  
**Description** Asphaltic Shingle White  
**Amount of Material** 2,200 SF  
**Asbestos Containing Material:** Negative  
**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** NR

---

| Sample Number | Sample Location               | Date Sampled | Time Sampled | Result   |
|---------------|-------------------------------|--------------|--------------|----------|
| 8-1           | Ground in Front of Front Door | 9/9/2014     | 8:21 AM      | Negative |

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**Homogenous Area #** 9  
**Description** Built Up Roofing  
**Amount of Material** 495 SF  
**Asbestos Containing Material:** Negative  
**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** NR

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| Sample Number | Sample Location                     | Date Sampled | Time Sampled | Result   |
|---------------|-------------------------------------|--------------|--------------|----------|
| 9-1           | Front Porch Roof 18 South 0.25 West | 9/9/2014     | 9:05 AM      | Negative |

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**Homogenous Area #** 10  
**Description** Linoleum Green  
**Amount of Material** 1,240 SF  
**Asbestos Containing Material:** Positive  
**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** Cat I

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| Sample Number | Sample Location                 | Date Sampled | Time Sampled | Result   |
|---------------|---------------------------------|--------------|--------------|----------|
| 10-1          | Living Room Floor at Front Door | 9/9/2014     | 8:49 AM      | Positive |

---

**Homogenous Area #** 11  
**Description** Building Paper  
**Amount of Material** 1,850 SF  
**Asbestos Containing Material:** Negative  
**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Friable  
**Category** NR

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| Sample Number | Sample Location                  | Date Sampled | Time Sampled | Result   |
|---------------|----------------------------------|--------------|--------------|----------|
| 11-1          | West Exterior Wall 7 North 0.5 H | 9/9/2014     | 8:34 AM      | Negative |

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Inspector: Ole A. Solberg P.E.

Signature



Accreditation Agency:  
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State:  
EPA

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5/2/2014

**Project Name** 409 W 2nd Ave SFR NESHAPs  
**Project Number** 214048

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**Homogenous Area #** 12  
**Description** Vinyl Floor Tile Green  
**Amount of Material** 110 SF  
**Asbestos Containing Material:** Negative

**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** NR

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| Sample Number | Sample Location                         | Date Sampled | Time Sampled | Result   |
|---------------|---|--------------|--------------|----------|
| 12-1          | Kitchen Floor at South Exterior Doorway | 9/9/2014     | 8:36 AM      | Negative |

---

**Homogenous Area #** 13  
**Description** Window Caulk  
**Amount of Material** 6 SF  
**Asbestos Containing Material:** Assumed

**Manner of Sampling:** Random  
**Type of Suspect Material:** Misc  
**Friability Category:** Non-Friable  
**Category** Cat I

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| Sample Number | Sample Location | Date Sampled | Time Sampled | Result  |
|---------------|-----------------|--------------|--------------|---------|
|               | No Sample Taken |              |              | Assumed |

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Inspector: Ole A. Solberg P.E.

Signature



Accreditation Agency:  
The Asbestos Institute

State:  
EPA

Accreditation #  
F9960

Date Issued:  
8/2/2014



**Polarized Light Microscope (PLM) Analysis for Asbestos in Bulk Sample**

**JobNumber:** 201409271

**Client:**

**SOLBERG OLE**

508 E BARRUS PL

CASA GRANDE, AZ 85122-0000

Office Phone: (520) 836-0270

FAX: (520) 836-0355

**# Samples:** 20 **PLM** **Rec:** 9/10/2014 **Method:** EPA 600/R-93/116 **The "New" Method;** see below

**Client Job:** 214048 409 W 2nd Ave SFR

**PO Number:**

**Report Date:** 9/16/2014

**Date Analyzed:** 9/16/2014

**Routing Number:** -

**Method and Analysis Information:** **Fiberquant Internal SOP:** PLMn

Each bulk sample is first dissected under a 7-30x magnification stereo-microscope. This examination is used to determine the general type of sample, how many and what type of layers it has, and initial estimates of fiber types and quantities. Second, liquid media mounts are made of each layer - such mounts may be of selected fibers (used solely for identification purposes) or may be representative of the layer as a whole (used for quantitation purposes). The mounts may be made in a synthetic Canadian balsam, one of several solvents, or in refractive index oils (media of known refractive index). Generally, a variety of different mounts are made: some optimized for fiber visibility, some optimized for fiber identification, and some optimized for fiber quantitation. The mounted slides are then examined at 50-400x magnification on a Nikon Labphot-pol microscope. Optical characteristics are used to identify each observed fiber type; the optical data are contained for each sample on its detail analysis sheet, attached.

Current EPA and NESHAP regulations designate a result of  $\leq 1\%$  asbestos as "negative" and  $> 1\%$  asbestos as "positive". Samples containing layers that have been determined to be "positive" may have to be handled differently during a renovation or demolition than samples whose layers have been determined to be "negative."

The method of fiber identification and quantitation is the "Standard Operating Procedures for the Analysis of Asbestos in Bulk Samples using Polarized Light Microscopy", Chapter 7 of the Quality Assurance and Management Manual. This SOP and its associated reporting have been designed to satisfy all requirements in both EPA Method 600/M4-82-020 (The Interim Method) and EPA Method 600/R-93/116 (The New Method). The Interim Method is the required method for AHERA (US EPA 40 CFR Pt. 763), but this method calls for the reporting of composited results of multi-layered samples that is no longer an acceptable reporting practice in most circumstances. Current EPA rules, such as NESHAP (US EPA 40CFR Pt. 61), as well as NVLAP accreditation policies, call for separate reporting for each layer of multi-layered samples. The New Method contains the same procedures for identification and quantification of asbestos as does the Interim Method, except that multi-layered samples are reported to comply with the latest US EPA rule. Fiberquant not only reports the asbestos content of each layer of multi-layered samples separately (satisfying current EPA and NVLAP reporting requirements), but Fiberquant also reports what percentage of the sample each layer comprises. Therefore, the results may be arithmetically composited to satisfy the reporting requirements of the Interim Method. The method of fiber quantitation is an estimation technique in which the analysts quantitation is routinely calibrated by reference quantitation standards, and which has been shown to be equivalent in precision and accuracy to point counting. Friability is estimated for the purposes of deciding when to point count. Friabilities determined in the field take precedence over those determined in the laboratory. Those sample layers which are friable and estimated by the analyst to contain  $\leq 1\%$  asbestos are point counted using 400 points. Such point counting is required by NESHAP (National Emission Standards for Hazardous Air Pollutants, Nov. 1990) in order to rely on analytical results that are  $\leq 1\%$ . The coefficient of variation for the estimation quantitation technique is 100% in the range 0-5%. This means that PLM analysis is not capable of conclusively determining whether a layer containing close to 1% asbestos is actually "positive" or "negative". For this reason, Fiberquant refers to results where asbestos was detected but  $\leq 1\%$  as "borderline negative", and results where asbestos was  $> 1\%$  but  $\leq 2\%$  as "borderline positive" to indicate the uncertainty in assigning a "positive" or "negative" label. In the sample summary, "ND" means that no asbestos was detected during the analysis. A "Tr" or "Trace" of asbestos reported is defined for our purposes as the detection of several asbestos fibers during the analysis; this level would be right at the limit of detection for the method. Trace is only reported on the analysis detail - in the summary a trace would be reported as  $\leq 1\%$ . The limit of detection (the smallest % of asbestos that can be detected) varies greatly depending on the matrix in which the asbestos is found. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 1% stated in the method. During the analysis, the analyst, for Fiberquant identification purposes only, determines the "apparent sample type" and "apparent layer types." It must be emphasized that these types are only what is apparent. Often, different materials appear similar or identical after sampling, so the analyst may assign a type other than what was sampled.

Floor tiles present a special problem for PLM asbestos analysis. Floor tile can contain chrysotile fibers so thin that they cannot be resolved by optical methods. In such a case, we may observe a percentage of asbestos which is lower than the actual percentage, or not observe asbestos at all when some is present. For this reason, floor tiles reported as negative should be confirmed to be negative using transmission electron microscope (TEM) analysis. Likewise, vermiculite insulation materials containing traces of asbestiform asbestos present a problem for routine PLM analysis - the amphiboles are sometimes present in trace amounts inhomogeneously distributed. For this reason, loose vermiculite samples reported as negative should be confirmed to contain no amphibole using hydroseparation techniques.

The samples were analyzed under the following ongoing quality assurance program: Blank samples are routinely analyzed to maintain contamination-free materials. Each analyst has at least a bachelor's degree in physical science, and has also completed extensive training specific to asbestos analysis for 1-3 months before being allowed to analyze client samples. Qualitative reference samples are routinely analyzed to assure that analysts can identify asbestos and asbestos-look-alike fibers. Quantitative reference samples are routinely analyzed to calibrate and characterize the

estimation procedure. Microscope alignment is checked each day. Refractive index oils are calibrated at least quarterly. At least 10% of client samples are re-analyzed from scratch by a different analyst than the original, and any discrepancies are resolved for the sample and similar sample types before the results are reported. All quality checks performed for these samples were in control except as detailed in the "Analytical Notes" below. All analysts participate in interlab round robins and proficiency testing to assure competence. Fiberquant is accredited by NVLAP (Lab #101031) for the analysis of bulk samples for asbestos using PLM. Accreditation does not imply endorsement by the EPA, any other United States governmental agency or any private agency or association. Each lab analysis refers only to the sample tested, and may not, due to the sampling process, be representative of the material sampled. This report may not be reproduced except in full, without the approval of Fiberquant Analytical Services.

Some results may have been calculated using client supplied data, such as volume or area sampled, for which Fiberquant assumes no liability for accuracy.

**Job Analysis Notes:**

**PLM Analysis Summary:**

**Job Number: 201409271**

214048 409 W 2nd Ave SFR

| Sample Number       | Lab Number     | Apparent Sample Type * | Positive Layer Yes or No            |
|---------------------|----------------|------------------------|-------------------------------------|
| Layer               | Color          | Apparent Layer Type *  | Asbestos Results                    |
| Sample # <b>1-1</b> | 2014-09271- 1  | Wall System            | Positive Layer? No                  |
| Layer # 1           | brown          | paper/cardboard        | <i>no asbestos detected</i>         |
| Layer # 2           | white          | drywall core           | <i>no asbestos detected</i>         |
| Sample # <b>1-2</b> | 2014-09271- 2  | Cementitious           | Positive Layer? Yes                 |
| Layer # 1           | gray           | paint                  | <i>no asbestos detected</i>         |
| Layer # 2           | off-white      | stucco                 | <i>no asbestos detected</i>         |
| Layer # 3           | gray           | stucco                 | <i>no asbestos detected</i>         |
| Layer # 4           | tan            | caulk                  | <i>&gt;1-2% chrysotile asbestos</i> |
| Sample # <b>1-3</b> | 2014-09271- 3  | Miscellaneous          | Positive Layer? No                  |
| Layer # 1           | off-white      | stucco                 | <i>no asbestos detected</i>         |
| Layer # 2           | gray           | block                  | <i>no asbestos detected</i>         |
| Sample # <b>2-1</b> | 2014-09271- 4  | Miscellaneous          | Positive Layer? Yes                 |
| Layer # 1           | off-white      | stucco                 | <i>&gt;1-2% chrysotile asbestos</i> |
| Layer # 2           | various        | paint                  | <i>no asbestos detected</i>         |
| Layer # 3           | off-white      | stucco                 | <i>no asbestos detected</i>         |
| Layer # 4           | gray           | stucco                 | <i>no asbestos detected</i>         |
| Sample # <b>2-2</b> | 2014-09271- 5  | Miscellaneous          | Positive Layer? Yes                 |
| Layer # 1           | various        | paint                  | <i>no asbestos detected</i>         |
| Layer # 2           | white          | texture/joint compound | <i>&gt;1-2% chrysotile asbestos</i> |
| Layer # 3           | gray           | stucco                 | <i>no asbestos detected</i>         |
| Sample # <b>2-3</b> | 2014-09271- 6  | Miscellaneous          | Positive Layer? No                  |
| Layer # 1           | various        | paint                  | <i>no asbestos detected</i>         |
| Layer # 3           | gray           | stucco                 | <i>no asbestos detected</i>         |
| Sample # <b>3-1</b> | 2014-09271- 7  | Wall System            | Positive Layer? No                  |
| Layer # 1           | tan            | paper/cardboard        | <i>no asbestos detected</i>         |
| Layer # 2           | white          | drywall core           | <i>no asbestos detected</i>         |
| Sample # <b>3-2</b> | 2014-09271- 8  | Wall System            | Positive Layer? No                  |
| Layer # 1           | brown          | paper/cardboard        | <i>no asbestos detected</i>         |
| Layer # 2           | white          | drywall core           | <i>no asbestos detected</i>         |
| Sample # <b>3-3</b> | 2014-09271- 9  | Wall System            | Positive Layer? No                  |
| Layer # 1           | brown          | paper/cardboard        | <i>no asbestos detected</i>         |
| Layer # 2           | white          | drywall core           | <i>no asbestos detected</i>         |
| Sample # <b>4-1</b> | 2014-09271- 10 | Sprayed Material       | Positive Layer? Yes                 |
| Layer # 1           | off-white      | spray-on ceiling       | <i>2-5% chrysotile asbestos</i>     |
| Layer # 2           | off-white      | paint                  | <i>no asbestos detected</i>         |
| Layer # 3           | off-white      | paper/cardboard        | <i>no asbestos detected</i>         |
| Layer # 4           | off-white      | texture/joint compound | <i>&lt;=1% chrysotile asbestos</i>  |
| Sample # <b>4-2</b> | 2014-09271- 11 | Sprayed Material       | Positive Layer? Yes                 |
| Layer # 1           | off-white      | spray-on ceiling       | <i>2-5% chrysotile asbestos</i>     |
| Sample # <b>4-3</b> | 2014-09271- 12 | Sprayed Material       | Positive Layer? Yes                 |
| Layer # 1           | off-white      | spray-on ceiling       | <i>2-5% chrysotile asbestos</i>     |
| Sample # <b>5-1</b> | 2014-09271- 13 | Carpet                 | Positive Layer? No                  |
| Layer # 1           | green          | carpet                 | <i>no asbestos detected</i>         |
| Sample # <b>6-1</b> | 2014-09271- 14 | Flooring               | Positive Layer? No                  |
| Layer # 1           | off-white      | floor tile             | <i>no asbestos detected</i>         |
| Layer # 2           | yellow         | mastic                 | <i>no asbestos detected</i>         |
| Sample # <b>7-1</b> | 2014-09271- 15 | Flooring               | Positive Layer? No                  |
| Layer # 1           | black          | floor tile             | <i>no asbestos detected</i>         |
| Layer # 2           | yellow         | mastic                 | <i>no asbestos detected</i>         |
| Sample # <b>8-1</b> | 2014-09271- 16 | Roofing                | Positive Layer? No                  |
| Layer # 1           | black          | roofing roll/shingle   | <i>no asbestos detected</i>         |
| Sample # <b>9-1</b> | 2014-09271- 17 | Roofing                | Positive Layer? No                  |
| Layer # 1           | black          | bitumen                | <i>no asbestos detected</i>         |
| Layer # 2           | black          | roof ply               | <i>no asbestos detected</i>         |
| Layer # 3           | brown          | underlayment           | <i>no asbestos detected</i>         |

|           |                    |                        |                |                                   |                     |
|-----------|--------------------|------------------------|----------------|-----------------------------------|---------------------|
| Sample #  | <b><u>10-1</u></b> |                        | 2014-09271- 18 | Flooring                          | Positive Layer? Yes |
| Layer # 1 | off-white          | sheet flooring surface |                | <i>no asbestos detected</i>       |                     |
| Layer # 2 | off-white          | sheet flooring backing |                | <i>20-30% chrysotile asbestos</i> |                     |
| Layer # 3 | tan                | mastic                 |                | <i>no asbestos detected</i>       |                     |
| Sample #  | <b><u>11-1</u></b> |                        | 2014-09271- 19 | Miscellaneous                     | Positive Layer? No  |
| Layer # 1 | black              | bitumen-paper          |                | <i>no asbestos detected</i>       |                     |
| Sample #  | <b><u>12-1</u></b> |                        | 2014-09271- 20 | Flooring                          | Positive Layer? No  |
| Layer # 1 | green              | floor tile             |                | <i>no asbestos detected</i>       |                     |
| Layer # 2 | tan                | mastic                 |                | <i>no asbestos detected</i>       |                     |

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\* Apparent Sample Types and Apparent Layer Types are as they appeared to the analyst. Since many types of materials appear similar after sampling damage, the apparent type of material may not be the actual type of material.

**PLM Analysis Details**

**Job Number: 201409271**

214048 409 W 2nd Ave SFR

**Sample** 1-1      **Lab Number** 2014-09271- 1      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Wall System      **Fibrous Solid**  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 4  
**Non-Fibrous Components (in approx. decreasing order):** powder, binder,

| Layers                       |                 |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|-----------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type      | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paper/cardboard | 2   | brown            | 2          | 90-100%                | -     | -     | -     | -     | -     |
| 2                            | drywall core    | 98  | white            | 3          | <=1%                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                 | 100 | <b>Overall %</b> |            | 2-5%                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                 |     |                  |            | cellulose fiber        |       |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |        |  |
|--------|-----------------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|--------|--|
| #      | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per |  |
| 1      | cellulose fiber | W    | F   | N    | N  | H   | +   | U   |                                 |         |        |        |  |
| 2      |                 |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 3      |                 |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 4      |                 |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 5      |                 |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 6      |                 |      |     |      |    |     |     |     |                                 |         |        |        |  |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Sample appeared to have fire damage.

**Sample** 1-2      **Lab Number** 2014-09271- 2      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Cementitious      **Non-fibrous Solid**  
**Homogeneous** No      **# Layers** 4      **Pos Layer?** Yes      **# Sub-Samples** 9  
**Non-Fibrous Components (in approx. decreasing order):** powder, rock, binder

| Layers                       |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paint      | 2   | gray             | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 2                            | stucco     | 28  | off-white        | 2          | n.d.                   | -     | -     | -     | -     | -     |
| 3                            | stucco     | 15  | gray             | 2          | n.d.                   | -     | -     | -     | -     | -     |
| 4                            | caulk      | 55  | tan              | 1          | >1-2%                  | -     | -     | -     | -     | -     |
| <b>Total %</b>               |            | 100 | <b>Overall %</b> |            | >1-2%                  | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |            |     |                  |            | chrysotile asbestos    |       |       |       |       |       |

| Fibers |                     |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |             |  |
|--------|---------------------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|-------------|--|
| #      | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per      |  |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P   | 1.550                           | db/ly   | sb/o   | 1.561 1.553 |  |
| 2      |                     |      |     |      |    |     |     |     |                                 |         |        |             |  |
| 3      |                     |      |     |      |    |     |     |     |                                 |         |        |             |  |
| 4      |                     |      |     |      |    |     |     |     |                                 |         |        |             |  |
| 5      |                     |      |     |      |    |     |     |     |                                 |         |        |             |  |
| 6      |                     |      |     |      |    |     |     |     |                                 |         |        |             |  |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of polymer matrix using solvent. Procedure: dissolution of stucco matrix using acid.

**PLM Analysis Details**

**Job Number: 201409271**

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**Sample** 1-3      **Lab Number** 2014-09271- 3      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM 9/16/2014      **An?** OK      **Apparent Smp Type** Miscellaneous      **Non-fibrous Solid**  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 6  
**Non-Fibrous Components (in approx. decreasing order):** powder, rock,

| Layers                            |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|-----------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                                 | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                                 | stucco     | 35  | off-white        | 2          | n.d.                   | -     | -     | -     | -     | -     |
| 2                                 | block      | 65  | gray             | 1          | n.d.                   | -     | -     | -     | -     | -     |
| <b>Total %</b>                    |            | 100 | <b>Overall %</b> |            | n.d.                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> none |            |     |                  |            |                        |       |       |       |       |       |

| Fibers |       |      |     |      |    |     |     | Refractive Index Determinations |         |         |        |        |
|--------|-------|------|-----|------|----|-----|-----|---------------------------------|---------|---------|--------|--------|
| #      | Color | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | none  |      |     |      |    |     |     |                                 |         |         |        |        |
| 2      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 3      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 4      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 5      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 6      |       |      |     |      |    |     |     |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of cementitious components using acid.

**Sample** 2-1      **Lab Number** 2014-09271- 4      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM 9/16/2014      **An?** OK      **Apparent Smp Type** Miscellaneous      **Non-fibrous Solid**  
**Homogeneous** No      **# Layers** 4      **Pos Layer?** Yes      **# Sub-Samples** 10  
**Non-Fibrous Components (in approx. decreasing order):** powder, rock, binder

| Layers   |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|--|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #  | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1  | stucco     | 10  | off-white        | 2          | >1-2%                  | -     | -     | -     | -     | -     |
| 2  | paint      | 3   | various          | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 3  | stucco     | 2   | off-white        | 2          | n.d.                   | -     | -     | -     | -     | -     |
| 4  | stucco     | 85  | gray             | 2          | n.d.                   | -     | -     | -     | -     | -     |
| <b>Total %</b>                                   |            | 100 | <b>Overall %</b> |            | <=1%                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> chrysotile asbestos |            |     |                  |            |                        |       |       |       |       |       |

| Fibers |                     |      |     |      |    |     |     | Refractive Index Determinations |         |         |        |             |
|--------|---------------------|------|-----|------|----|-----|-----|---------------------------------|---------|---------|--------|-------------|
| #      | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil                             | Col Par | Col Per | RI Par | RI Per      |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P                               | 1.550   | vb/g    | pb/r   | 1.556 1.549 |
| 2      |                     |      |     |      |    |     |     |                                 |         |         |        |             |
| 3      |                     |      |     |      |    |     |     |                                 |         |         |        |             |
| 4      |                     |      |     |      |    |     |     |                                 |         |         |        |             |
| 5      |                     |      |     |      |    |     |     |                                 |         |         |        |             |
| 6      |                     |      |     |      |    |     |     |                                 |         |         |        |             |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of cementitious components using acid. Procedure: dissolution of matrix using solvent.

**PLM Analysis Details**

**Job Number: 201409271**

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**Sample** 2-2      **Lab Number** 2014-09271- 5      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Miscellaneous      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 3      **Pos Layer?** Yes      **# Sub-Samples** 8  
**Non-Fibrous Components (in approx. decreasing order):** powder, rock, binder

| Layers                       |                        |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type             | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paint                  | 1.5 | various          | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 2                            | texture/joint compound | 0.5 | white            | 3          | >1-2%                  | -     | -     | -     | -     | -     |
| 3                            | stucco                 | 98  | gray             | 2          | n.d.                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                        | 100 | <b>Overall %</b> |            | <=1%                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                        |     |                  |            | chrysotile asbestos    |       |       |       |       |       |

| Fibers |                     |      |     |      |    |     |     | Refractive Index Determinations |         |         |        |        |       |
|--------|---------------------|------|-----|------|----|-----|-----|---------------------------------|---------|---------|--------|--------|-------|
|        | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil                             | Col Par | Col Per | RI Par | RI Per |       |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P                               | 1.550   | vb/g    | pb/r   | 1.556  | 1.549 |
| 2      |                     |      |     |      |    |     |     |                                 |         |         |        |        |       |
| 3      |                     |      |     |      |    |     |     |                                 |         |         |        |        |       |
| 4      |                     |      |     |      |    |     |     |                                 |         |         |        |        |       |
| 5      |                     |      |     |      |    |     |     |                                 |         |         |        |        |       |
| 6      |                     |      |     |      |    |     |     |                                 |         |         |        |        |       |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of cementitious components using acid. Procedure: dissolution of matrix using solvent. Texture was too thin for an accurate analysis.

**Sample** 2-3      **Lab Number** 2014-09271- 6      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Miscellaneous      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 4  
**Non-Fibrous Components (in approx. decreasing order):** powder, rock, binder

| Layers                       |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paint      | 1   | various          | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 3                            | stucco     | 99  | gray             | 2          | n.d.                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |            | 100 | <b>Overall %</b> |            | n.d.                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |            |     |                  |            | none                   |       |       |       |       |       |

| Fibers |       |      |     |      |    |     |     | Refractive Index Determinations |         |         |        |        |
|--------|-------|------|-----|------|----|-----|-----|---------------------------------|---------|---------|--------|--------|
|        | Color | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | none  |      |     |      |    |     |     |                                 |         |         |        |        |
| 2      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 3      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 4      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 5      |       |      |     |      |    |     |     |                                 |         |         |        |        |
| 6      |       |      |     |      |    |     |     |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of cementitious components using acid. Procedure: dissolution of matrix using solvent. Most of surfacing appeared to have weathered off.

**PLM Analysis Details**

**Job Number: 201409271**

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**Sample** 3-1      **Lab Number** 2014-09271- 7      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Wall System      **Fibrous Solid**  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 4  
**Non-Fibrous Components (in approx. decreasing order):** powder, binder,

| Layers                       |                 |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|-----------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type      | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paper/cardboard | 3   | tan              | 2          | 90-100%                | -     | -     | -     | -     | -     |
| 2                            | drywall core    | 97  | white            | 3          | <=1%                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                 | 100 | <b>Overall %</b> |            | 2-5%                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                 |     |                  |            | cellulose fiber        |       |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|-----------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | cellulose fiber | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 2      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 3      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. No surfacing.

**Sample** 3-2      **Lab Number** 2014-09271- 8      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Wall System      **Fibrous Solid**  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 4  
**Non-Fibrous Components (in approx. decreasing order):** powder, binder,

| Layers                       |                 |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|-----------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type      | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paper/cardboard | 5   | brown            | 2          | 90-100%                | -     | -     | -     | -     | -     |
| 2                            | drywall core    | 95  | white            | 3          | >1-2%                  | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                 | 100 | <b>Overall %</b> |            | 5-10%                  | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                 |     |                  |            | cellulose fiber        |       |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|-----------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | cellulose fiber | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 2      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 3      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. No surfacing.

**Sample** 3-3      **Lab Number** 2014-09271- 9      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Wall System      **Fibrous Solid**  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 4  
**Non-Fibrous Components (in approx. decreasing order):** powder, binder,

| Layers                       |                 |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|-----------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type      | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | paper/cardboard | 5   | brown            | 2          | 90-100%                | -     | -     | -     | -     | -     |
| 2                            | drywall core    | 95  | white            | 3          | >1-2%                  | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                 | 100 | <b>Overall %</b> |            | 5-10%                  | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                 |     |                  |            | cellulose fiber        |       |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|-----------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | cellulose fiber | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 2      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 3      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. No surfacing.

**PLM Analysis Details**

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**Sample** 4-1      **Lab Number** 2014-09271- 10      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Sprayed Material      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 4      **Pos Layer?** Yes      **# Sub-Samples** 9  
**Non-Fibrous Components (in approx. decreasing order):** polymer foam, powder, binder

| Layers         |                        |     |                  |            | Percents of Each Fiber |         |       |       |       |       |
|----------------|------------------------|-----|------------------|------------|------------------------|---------|-------|-------|-------|-------|
| #              | Layer Type             | %   | Color            | Friability | Fib 1                  | Fib 2   | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1              | spray-on ceiling       | 68  | off-white        | 3          | 2-5%                   | n.d.    | -     | -     | -     | -     |
| 2              | paint                  | 2   | off-white        | 1          | n.d.                   | n.d.    | -     | -     | -     | -     |
| 3              | paper/cardboard        | 5   | off-white        | 2          | n.d.                   | 90-100% | -     | -     | -     | -     |
| 4              | texture/joint compound | 25  | off-white        | 3          | <=1%                   | n.d.    | -     | -     | -     | -     |
| <b>Total %</b> |                        | 100 | <b>Overall %</b> |            | 2-5%                   | 2-5%    | -     | -     | -     | -     |

**Fiber Identification:** chrysotile asbestos cellulose fiber

| Fibers |                     |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |        |       |
|--------|---------------------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|--------|-------|
| #      | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per |       |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P   | 1.550                           | vb/g    | sb/o   | 1.556  | 1.549 |
| 2      | cellulose fiber     | W    | F   | N    | N  | H   | +   | U   |                                 |         |        |        |       |
| 3      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 4      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 5      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 6      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of paint matrix using solvent. Procedure: dissolution of sprayed material using acid.  
 Point Count: Layer Number 4; 0 asbestos counts per 400 total counts = Trace percent.

**Sample** 4-2      **Lab Number** 2014-09271- 11      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Sprayed Material      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 1      **Pos Layer?** Yes      **# Sub-Samples** 3  
**Non-Fibrous Components (in approx. decreasing order):** polymer foam, powder,

| Layers         |                  |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|----------------|------------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #              | Layer Type       | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1              | spray-on ceiling | 100 | off-white        | 3          | 2-5%                   | -     | -     | -     | -     | -     |
| <b>Total %</b> |                  | 100 | <b>Overall %</b> |            | 2-5%                   | -     | -     | -     | -     | -     |

**Fiber Identification:** chrysotile asbestos

| Fibers |                     |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |        |       |
|--------|---------------------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|--------|-------|
| #      | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per |       |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P   | 1.550                           | vb/g    | sb/o   | 1.556  | 1.549 |
| 2      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 3      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 4      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 5      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 6      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of sprayed material using acid.

**PLM Analysis Details**

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**Sample** 4-3      **Lab Number** 2014-09271- 12      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Sprayed Material      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 1      **Pos Layer?** Yes      **# Sub-Samples** 3  
**Non-Fibrous Components (in approx. decreasing order):** polymer foam, powder,

| Layers                       |                  |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type       | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | spray-on ceiling | 100 | off-white        | 3          | 2-5%                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                  | 100 | <b>Overall %</b> |            | 2-5%                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                  |     |                  |            | chrysotile asbestos    |       |       |       |       |       |

| Fibers |                     |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |        |       |
|--------|---------------------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|--------|-------|
| #      | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per |       |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P   | 1.550                           | vb/g    | sb/o   | 1.556  | 1.549 |
| 2      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 3      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 4      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 5      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |
| 6      |                     |      |     |      |    |     |     |     |                                 |         |        |        |       |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of sprayed material using acid.

**Sample** 5-1      **Lab Number** 2014-09271- 13      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Carpet      Fibrous Mat  
**Homogeneous** Yes      **# Layers** 1      **Pos Layer?** No      **# Sub-Samples** 3  
**Non-Fibrous Components (in approx. decreasing order):** filler, binder,

| Layers                       |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | carpet     | 100 | green            | 1          | 90-100%                | -     | -     | -     | -     | -     |
| <b>Total %</b>               |            | 100 | <b>Overall %</b> |            | 90-100%                | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |            |     |                  |            | synthetic fiber (extr  |       |       |       |       |       |

| Fibers |                            |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |        |  |
|--------|----------------------------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|--------|--|
| #      | Color                      | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per |  |
| 1      | synthetic fiber (extruded) | V    | E   | N    | N  | H   | +   | P   |                                 |         |        |        |  |
| 2      |                            |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 3      |                            |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 4      |                            |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 5      |                            |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 6      |                            |      |     |      |    |     |     |     |                                 |         |        |        |  |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. No mastic.

**Sample** 6-1      **Lab Number** 2014-09271- 14      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Flooring      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 6  
**Non-Fibrous Components (in approx. decreasing order):** filler, polymer,

| Layers                       |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | floor tile | 98  | off-white        | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 2                            | mastic     | 2   | yellow           | 1          | n.d.                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |            | 100 | <b>Overall %</b> |            | n.d.                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |            |     |                  |            | none                   |       |       |       |       |       |

| Fibers |       |      |     |      |    |     |     |     | Refractive Index Determinations |         |        |        |  |
|--------|-------|------|-----|------|----|-----|-----|-----|---------------------------------|---------|--------|--------|--|
| #      | Color | Mrph | Iso | Pleo | Bi | Elg | Ext | Oil | Col Par                         | Col Per | RI Par | RI Per |  |
| 1      | none  |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 2      |       |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 3      |       |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 4      |       |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 5      |       |      |     |      |    |     |     |     |                                 |         |        |        |  |
| 6      |       |      |     |      |    |     |     |     |                                 |         |        |        |  |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of floor tile matrix and mastic using solvent.

**PLM Analysis Details**

**Job Number: 201409271**

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**Sample** 7-1      **Lab Number** 2014-09271- 15      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Flooring      Non-fibrous Solid  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 6  
**Non-Fibrous Components (in approx. decreasing order):** filler, polymer,

| Layers                       |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | floor tile | 97  | black            | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 2                            | mastic     | 3   | yellow           | 1          | >1-2%                  | -     | -     | -     | -     | -     |
| <b>Total %</b>               |            | 100 | <b>Overall %</b> |            | <=1%                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |            |     |                  |            | cellulose fiber        |       |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|-----------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | cellulose fiber | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 2      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 3      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of floor tile matrix and mastic using solvent.

**Sample** 8-1      **Lab Number** 2014-09271- 16      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Roofing      Fibrous Solid  
**Homogeneous** Yes      **# Layers** 1      **Pos Layer?** No      **# Sub-Samples** 3  
**Non-Fibrous Components (in approx. decreasing order):** filler, bitumen, rock

| Layers                       |                      |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|----------------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type           | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | roofing roll/shingle | 100 | black            | 1          | 10-20%                 | -     | -     | -     | -     | -     |
| <b>Total %</b>               |                      | 100 | <b>Overall %</b> |            | 10-20%                 | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                      |     |                  |            | glass fiber            |       |       |       |       |       |

| Fibers |             |      |     |      |    |     |     |  | Refractive Index Determinations |         |         |        |        |
|--------|-------------|------|-----|------|----|-----|-----|--|---------------------------------|---------|---------|--------|--------|
|        | Color       | Mrph | Iso | Pleo | Bi | Elg | Ext |  | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | glass fiber | CL   | D   | Y    |    |     |     |  |                                 |         |         |        |        |
| 2      |             |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 3      |             |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 4      |             |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 5      |             |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 6      |             |      |     |      |    |     |     |  |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

**Sample** 9-1      **Lab Number** 2014-09271- 17      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Roofing      Fibrous Solid  
**Homogeneous** No      **# Layers** 3      **Pos Layer?** No      **# Sub-Samples** 6  
**Non-Fibrous Components (in approx. decreasing order):** filler, bitumen, rock

| Layers                       |              |     |                  |            | Percents of Each Fiber |                 |       |       |       |       |
|------------------------------|--------------|-----|------------------|------------|------------------------|-----------------|-------|-------|-------|-------|
| #                            | Layer Type   | %   | Color            | Friability | Fib 1                  | Fib 2           | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | bitumen      | 40  | black            | 1          | n.d.                   | n.d.            | -     | -     | -     | -     |
| 2                            | roof ply     | 25  | black            | 1          | 10-20%                 | n.d.            | -     | -     | -     | -     |
| 3                            | underlayment | 35  | brown            | 3          | n.d.                   | 90-100%         | -     | -     | -     | -     |
| <b>Total %</b>               |              | 100 | <b>Overall %</b> |            | 2-5%                   | 30-40%          | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |              |     |                  |            | glass fiber            | cellulose fiber |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|-----------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | glass fiber     | CL   | D   | Y    |    |     |     |   |                                 |         |         |        |        |
| 2      | cellulose fiber | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 3      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

**PLM Analysis Details**

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**Sample** 10-1      **Lab Number** 2014-09271- 18      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Flooring      **Fibrous Solid**  
**Homogeneous** No      **# Layers** 3      **Pos Layer?** Yes      **# Sub-Samples** 6  
**Non-Fibrous Components (in approx. decreasing order):** polymer, filler, powder

| Layers                       |                        |     |                  |            | Percents of Each Fiber |                 |       |       |       |       |
|------------------------------|------------------------|-----|------------------|------------|------------------------|-----------------|-------|-------|-------|-------|
| #                            | Layer Type             | %   | Color            | Friability | Fib 1                  | Fib 2           | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | sheet flooring surface | 50  | off-white        | 1          | n.d.                   | n.d.            | -     | -     | -     | -     |
| 2                            | sheet flooring backing | 47  | off-white        | 3          | 20-30%                 | 2-5%            | -     | -     | -     | -     |
| 3                            | mastic                 | 3   | tan              | 1          | n.d.                   | n.d.            | -     | -     | -     | -     |
| <b>Total %</b>               |                        | 100 | <b>Overall %</b> |            | 10-20%                 | >1-2%           | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |                        |     |                  |            | chrysotile asbestos    | cellulose fiber |       |       |       |       |

| Fibers |                     |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|---------------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color               | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | chrysotile asbestos | W    | A   | N    | N  | L   | +   | P | 1.550                           | db/ly   | sb/o    | 1.561  | 1.553  |
| 2      | cellulose fiber     | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 3      |                     |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                     |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                     |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                     |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of vinyl matrix using solvent. Surface was blueish.

**Sample** 11-1      **Lab Number** 2014-09271- 19      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Miscellaneous      **Fibrous Mat**  
**Homogeneous** Yes      **# Layers** 1      **Pos Layer?** No      **# Sub-Samples** 3  
**Non-Fibrous Components (in approx. decreasing order):** bitumen, filler,

| Layers                       |               |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|---------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type    | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | bitumen-paper | 100 | black            | 1          | 80-90%                 | -     | -     | -     | -     | -     |
| <b>Total %</b>               |               | 100 | <b>Overall %</b> |            | 80-90%                 | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |               |     |                  |            | cellulose fiber        |       |       |       |       |       |

| Fibers |                 |      |     |      |    |     |     |   | Refractive Index Determinations |         |         |        |        |
|--------|-----------------|------|-----|------|----|-----|-----|---|---------------------------------|---------|---------|--------|--------|
|        | Color           | Mrph | Iso | Pleo | Bi | Elg | Ext |   | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | cellulose fiber | W    | F   | N    | N  | H   | +   | U |                                 |         |         |        |        |
| 2      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 3      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 4      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 5      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |
| 6      |                 |      |     |      |    |     |     |   |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

**Sample** 12-1      **Lab Number** 2014-09271- 20      **Sampled:**      **Condition:** acceptable  
**Analyzed By** RAM    9/16/2014      **An?** OK      **Apparent Smp Type** Flooring      **Non-fibrous Solid**  
**Homogeneous** No      **# Layers** 2      **Pos Layer?** No      **# Sub-Samples** 6  
**Non-Fibrous Components (in approx. decreasing order):** filler, polymer,

| Layers                       |            |     |                  |            | Percents of Each Fiber |       |       |       |       |       |
|------------------------------|------------|-----|------------------|------------|------------------------|-------|-------|-------|-------|-------|
| #                            | Layer Type | %   | Color            | Friability | Fib 1                  | Fib 2 | Fib 3 | Fib 4 | Fib 5 | Fib 6 |
| 1                            | floor tile | 95  | green            | 1          | n.d.                   | -     | -     | -     | -     | -     |
| 2                            | mastic     | 5   | tan              | 1          | n.d.                   | -     | -     | -     | -     | -     |
| <b>Total %</b>               |            | 100 | <b>Overall %</b> |            | n.d.                   | -     | -     | -     | -     | -     |
| <b>Fiber Identification:</b> |            |     |                  |            | none                   |       |       |       |       |       |

| Fibers |       |      |     |      |    |     |     |  | Refractive Index Determinations |         |         |        |        |
|--------|-------|------|-----|------|----|-----|-----|--|---------------------------------|---------|---------|--------|--------|
|        | Color | Mrph | Iso | Pleo | Bi | Elg | Ext |  | Oil                             | Col Par | Col Per | RI Par | RI Per |
| 1      | none  |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 2      |       |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 3      |       |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 4      |       |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 5      |       |      |     |      |    |     |     |  |                                 |         |         |        |        |
| 6      |       |      |     |      |    |     |     |  |                                 |         |         |        |        |

**Sample Analytical Note**  
 Procedure: tweased apart using forceps. Procedure: dissolution of floor tile matrix and mastic using solvent.

Fr=Friability: 1=very non-friable; 2= non-friable; 3=friable; 4=highly friable  
Colors: B=black;BL=blue;BR=brown;CL=clear;G=Green;GY=gray;OR=orange;OW=off-white;PN=pink;PU=purple;R=red;TN=tan;W=white;Y=yellow;V=various  
Fiber Morphology: A=fine fibers/bundles, white, sinewy, flexible; B=fine fibers/bundles, w-br, straight, broomed ends; C=fine fibers/bundles, blue, straight, broomed ends;  
D=fine to coarse fibers, CL-B, brittle; E=coarse fibers,CL or dyed, striated; F=coarse fibers or splinters, W-BR, ribbon-like; G=lath-like or shards, low aspect ratio, may taper  
Iso=isotropism - may be yes or no; Pleo=pleochroism - may be yes or no; Bi=birefringence - may be None, Low, Medium or High  
Elg=sign of elongation - may be +, - or B (both); Ext=extinction - may be Parallel, Oblique, None or Undulating; Oil=medium used to for dispersion staining  
Col Par=dispersion staining colors parallel to the fiber (fiber/halo): b/w=black/white; dg/py=dark gray/pale yellow; vg/y=violet gray/yellow; db/ly=dark blue/lemon yellow;  
vb/g= vivid blue/gold; sb/o=sky blue/orange; pb/r=pale blue/red; gb/dr=gray blue/dark red; w/b=white/black. Col Perp=same only perpendicular to fiber.  
RI Par=refractive index parallel to fiber; RI Perp=refractive index perpendicular to fiber



Analyst: ROBERT A. McCORMICK

Printed: 16-Sep-14

Original Print Date: 16-Sep-14



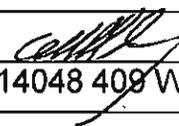
Larry S. Pierce, Approved Accreditation Signatory

# FIBERQUANT

ANALYTICAL SERVICES

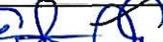
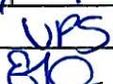
**Fiberquant Analytical Services** 5025 S. 33rd St.,  
Phoenix, AZ 85040; Phone: 602-276-6139; FAX: 602-276-4558;  
info@fiberquant.com

## Analysis Request/Chain-of-Custody Form

|  |     |
|--|-----|
| Submitted by (Company) <b>Ole A Solberg PE</b>   |     |
| Address <b>508 E Barrus Pl</b>   |     |
| City, State, Zip Code <b>Casa Grande, AZ 85122</b>   |     |
| Phone <b>520-836-0270</b>  | FAX |
| Email <b>ole@solbergengineering.com</b>  |     |
| Invoice to (Company) <b>Same</b>   |     |
| Address  |     |
| City, State, Zip Code  |     |
| Phone  | FAX |
| Contact (print) <b>Ole A Solberg</b>   |     |
| Sampled by (signature)  |     |
| Job Number or Project Name <b>214048 408 W 2nd Ave SFR</b>   |     |
| PO Number  |     |

| <Analysis Method Requested><br>ONLY ONE METHOD per COC |   | Turn-around time<br>(choose one)          |                                   |  |                                     |
|--|---|---|-----------------------------------|--|-------------------------------------|
|  |   | Rush                                      | Norm                              | Ext  |                                     |
| <b>Asbestos by PLM</b>                                 | Method > Improved <input type="checkbox"/> or Interim <input type="checkbox"/>                                  | Urg. Rush <3 hrs <input type="checkbox"/> | <6 hrs <input type="checkbox"/>   | 1-3 days <input checked="" type="checkbox"/> | 15-30 days <input type="checkbox"/> |
|  | Analyze > All <input checked="" type="checkbox"/> or ATPF <input type="checkbox"/>                              |   |                                   |  |                                     |
|  | If ATPF then > by Layer <input type="checkbox"/> or by Sample <input type="checkbox"/>                          |   |                                   |  |                                     |
|  | Single Layer Protocol > Yes <input type="checkbox"/> or No <input type="checkbox"/>                             |   |                                   |  |                                     |
| <b>Fibers by PCM</b>                                   | Method > 7400(Area) <input type="checkbox"/> ORM (Personal) <input type="checkbox"/>                            | <4 hr <input type="checkbox"/>            | 24hr <input type="checkbox"/>     |  |                                     |
|  | In Air > AHERA <input type="checkbox"/> Mod. AHERA <input type="checkbox"/>                                     | <6hr <input type="checkbox"/>             | 24 hr <input type="checkbox"/>    | 3-5d <input type="checkbox"/>                |                                     |
|  | In Water* > Water <input type="checkbox"/> Sludge <input type="checkbox"/>                                      | 1-2d <input type="checkbox"/>             | 3-5d <input type="checkbox"/>     | N/A  |                                     |
|  | In Bulk (Annex2) > Chatfield <input type="checkbox"/> Full Quant <input type="checkbox"/>                       |   |                                   |  |                                     |
| <b>Asbestos by TEM</b>                                 | In Dust > Vacuum Dust (ASTM D-5755) <input type="checkbox"/>  | 3-5d <input type="checkbox"/>             | 5-10d <input type="checkbox"/>    | N/A  |                                     |
|  | Analyte > Pb <input type="checkbox"/> Other <input type="checkbox"/>  | <6 hrs <input type="checkbox"/>           | 2-3 days <input type="checkbox"/> | N/A  |                                     |
|  | Filter > MCE <input type="checkbox"/>   |   |                                   |  |                                     |
|  | Matrix > Paint > by Area (mg/cm2) <input type="checkbox"/><br>by Weight (ppm) <input type="checkbox"/>          |   |                                   |  |                                     |
|  | Soil > <input type="checkbox"/>   |   |                                   |  |                                     |
|  | Wipe > <input type="checkbox"/>   |   |                                   |  |                                     |
|  | Check here certifying wipes used are ASTM E1792 compliant <input type="checkbox"/>                              |   |                                   |  |                                     |
| <b>Pb by FLAA</b>                                      | Air Sample > Zef <input type="checkbox"/> Aller <input type="checkbox"/> Oth <input type="checkbox"/>           | <6 hrs <input type="checkbox"/>           | 1-2 days <input type="checkbox"/> | N/A  |                                     |
|  | Bulk > Sample <input type="checkbox"/> Swab <input type="checkbox"/>  |   |                                   |  |                                     |
|  | Tape Lift > Qualitative (% & type) <input type="checkbox"/> or Quantitative (type/cm2) <input type="checkbox"/> |   |                                   |  |                                     |
| <b>Fungi</b>   |   |   |                                   |  |                                     |
|  |   |   |                                   |  |                                     |
| <b>Soot</b>  | ASTM D6602-03B  | Optical <input type="checkbox"/>          | <6 hrs <input type="checkbox"/>   | 1-2 days <input type="checkbox"/>            | N/A                                 |
|  |   | Optical & TEM <input type="checkbox"/>    | 1-2 days <input type="checkbox"/> | 3-5days <input type="checkbox"/>             | N/A                                 |
| <b>Other</b>   |   | Call                                      | Call                              |  |                                     |

| Sample # (1 per line) | Description/Location                   | Sample Date | Sample Time | Vol. or Area |
|-----------------------|--|-------------|-------------|--------------|
| 1) 1-1                | Ext Stucco-New Ext walls               | 9/9/14      | 0823        |              |
| 2) 1-2                | S S S                                  |             | 0825        |              |
| 3) 1-3                | S S S                                  |             | 0827        |              |
| 4) 2-1                | S S old                                |             | 0829        |              |
| 5) 2-2                | S S                                    |             | 0831        |              |
| 6) 2-3                | S S S                                  |             | 0833        |              |
| 7) 3-1                | Gyp wall board NW Bedroom              |             | 0846        |              |
| 8) 3-2                | S S NW ✓                               |             | 0844        |              |
| 9) 3-3                | S S SW ✓                               |             | 0847        |              |
| 10) 4-1               | Acoustical Ceiling Texture Living Room |             | 0854        |              |
| 11) 4-2               | S S S S S                              |             | 0855        |              |
| 12) 4-3               | S S S S S                              |             | 0857        |              |
| 13) 5-1               | Carpet ✓ ✓                             |             | 0859        |              |
| 14) 6-1               | Floor tile Black Dining Room           |             | 0838        |              |
| 15) 7-1               | ✓ ✓ white ✓ ✓                          |             | 0840        |              |
| 16) 8-1               | Asphaltic Shingle Ground               |             | 0824        |              |
| 17) 9-1               | Built up Roofing Roof                  |             | 0905        |              |
| 18) 10-1              | Lino/um Green Living Room              |             | 0845        |              |
| 19) 11-1              | Building Paper Exterior wall           |             | 0834        |              |
| 20) 12-1              | Floor-Tile Green Kitchen               |             | 0836        |              |

|  |               |                                  |                     |       |       |
|--|---------------|----------------------------------|---------------------|-------|-------|
| 1) Relinquished by:                     | Date: 9/11/14 | Time: 12:53 PM                   | 3) Relinquished by: | Date: | Time: |
| 2) Received by:                         | Date: 9.10.14 | Time: 4:47                       | 4) Received by:     | Date: | Time: |
| * TEM Water: Sampler's name Required by State of Arizona   | Print Name    | Fiberquant assigned Job Number > | 201409271           |       |       |
| Review of Analysis Request (Initials):  |               | Page                             | 1 of 1              |       |       |

Note: Data completed by client (including number and identity of samples) is assumed to be correct until it is verified at time of sample preparation.

# THE ASBESTOS INSTITUTE

Certifies that

**Ole A Solberg**

has attended the EPA approved course

**AHERA Refresher  
Building Inspector  
May 2, 2014**

and successfully passed the competency exam.

Date of Examination: **May 2, 2014**

Date of Expiration: **May 2, 2015**



William T. Cavness  
Director



Approved Instructor

THE ASBESTOS INSTITUTE  
20033 N. 19th Avenue  
Building #6  
Phoenix, AZ 85027  
602-864-6564

## 1.0 SUMMARY

Site Description.....SFR 409 W 2nd Ave  
Site Location .....409 W 2nd Ave, Casa Grande, Arizona, 85122  
Contact .....Jeff Palmer                      Phone Number .....(520) 421-8685  
Type of Inspection .....Complete NESHAPS Demolition Inspection  
Date Inspected.....September 9, 2014  
Inspector.....Ole A. Solberg, P.E.  
Inspector's EPA/AHEARA Certificate Number ....F 9960                      Training Provider .....TAI  
Certificate Expiration Date .....May 2, 2015  
Number of homogenous areas identified .....12  
Number of samples taken.....20  
Homogenous areas assumed positive.....None

### 1.1 Asbestos Summary

**Functional Space:** Building

**Category I Non Friable Material** (may be demolished in place, must be removed if burned)

| Homogenous Area | Amount | U/M  | Result    |
|-----------------|--------|------|-----------|
| Green Linoleum  | 1,240  | SqFt | Positive  |
| Window Caulk    | 6      | SqFt | Positive* |

\*Listed as assumed in the database report but see Sample 2-1 lab result for analysis

**Category II Non-Friable Material** (required removal depends on demolition methods used, must be removed if burned)

| Homogenous Area | Amount | U/M | Result |
|-----------------|--------|-----|--------|
| None            | N/A    |     | N/A    |

**Category II Friable Material** (must be removed if demolished or burned)

| Homogenous Area            | Amount | U/M  | Result   |
|----------------------------|--------|------|----------|
| Acoustical Ceiling Texture | 225    | SqFt | Positive |