ADDENDUM NO: 01
Montana State University

DATE: Monday, January 27th, 2020

PROJECT: MSU CLASSROOM RENOVATIONS 2020 PPA#19-0136A

ARCHITECT: Mosaic Architecture, 428 No. Last Chance Gulch, Helena, Montana 59601

TO: All plan holders of record

The above-numbered solicitation is amended as set forth below. Bidders/Offerors must acknowledge receipt of this amendment prior to the hour and date specified for receipt of bids/proposals, by completing the addendum acknowledgement on the form titled “Bid Proposal”.

REVISIONS ARCHITECTURAL:

SPECIFICATION ITEMS

1. **Division 011819**: Asbestos Abatement
   a. Full hazardous material report available, and included in this addendum.
   b. See “**Division 024119**: MSU Asbestos Abatement Guidance Selective Demolition” for additional requirements

2. **Division 096813-2.02-A and 2.02-B**: Tile Carpeting: change from original specified carpets to the following:
   
   **CT1**:
   1. Manufacturer: ShawContract
      a. Product Type: Carpet Tile
      b. Collection: No Rules
      c. Style Name: Byline Tile
      d. Style number: 59113
      e. Color name: Timeless
      f. Color number: 05400
      g. Construction: Multi-level Pattern Loop
      h. Fiber: eco-solution q nylon
      i. Dye method: 100% solution dyed
      j. Primary backing: synthetic
      k. Secondary backing: ecoworx tile
      l. Protective treatments: ssp shaw soil protection
      m. Size: 24”x24”
      n. Gauge: 1/12”
      o. Stitches: 9 per inch (35 per 10cm)
p. Finished pile thickness: 0.109”
q. Installation method: quarter turn

**CT2:**

2. Manufacturer: ShawContract
   a. Product Type: Carpet Tile
   b. Collection: No Rules
   c. Style Name: Byline Tile
   d. Style number: 59113
   e. Color name: Symbolic
   f. Color number: 05512
   g. Construction: Multi-level Pattern Loop
   h. Fiber: eco-solution q nylon
   i. Dye method: 100% solution dyed
   j. Primary backing: synthetic
   k. Secondary backing: ecoworx tile
   l. Protective treatments: ssp shaw soil protection
   m. Size: 24”x24”
   n. Gauge: 1/12”
o. Stitches: 9 per inch (35 per 10cm)
p. Finished pile thickness: 0.109”
q. Installation method: quarter turn

**DRAWING ITEMS**

1. **Sheet A091:** Hazardous materials information updated to include plan diagram.

2. **Sheet A600:** Room finish legend revised to reflect MSU preferred carpet line and pattern.

**ENCLOSURES:**

A091, A600

Full Hazardous Materials Report
GENERAL DEMOLITION NOTES:


2. COORD W/ABATEMENT CONTRACTOR FOR REMOVAL OF WHITEBOARDS.

3. REMOVE PROJECTOR AND SCREEN - GIVE TO MSU AV.

4. PATCH AND PREP ALL WALLS FOR PAINT UNLESS OTHERWISE INDICATED.

5. VERIFY ALL CONDITIONS AND COORDINATE WITH ALL DISCIPLINES OF CONTRACT.

6. UNDOCUMENTED FIELD CHANGES MAY HAVE OCCURRED AND ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT WHEN DISCOVERED.

7. WHERE DEMOLITION IS INDICATED, WALLS SHALL BE REMOVED AND CEILING SHALL BE PATCHED, REPAIRED AND PAINTED TO MATCH EXISTING.

8. UNLESS DEMOLITION IS INDICATED, PATCH AND PROTECT EXISTING CEILING.

9. COORDINATE ALL MECHANICAL, ELECTRICAL, FIRE SYSTEMS, COMMUNICATIONS AND UTILITY SHUT-DOWNS WITH OWNER PRIOR TO REMOVING AND OR RELOCATING, PER MSU REQUIREMENTS.

10. ALL DEMOLITION DRAWINGS ARE INTENDED TO SHOW GENERAL SCOPE OF WORK WITHIN THE INTENT OF THE PROJECT AND ARE NOT INTENDED TO EXCLUDE ANY DEMOLITION WORK NECESSARY FOR PRIOR COMPLETION OF THE WORK OUTLINED IN THE PROJECT DOCUMENTS. CONTRACTOR SHOULD ASSUME ADDITIONAL MINOR DEMOLITION ITEMS NOT SHOWN ON PLANS, NO ADDITIONAL PAYMENT WILL BE MADE FOR SUCH MINOR ELEMENTS.

11. THESE DRAWINGS INDICATE STRUCTURAL AND NON-STRUCTURAL DEMOLITION THAT IS TO OCCUR TO MAKE WAY FOR NEW CONSTRUCTION. ADDITIONAL STRUCTURAL DEMOLITION WORK, CONSTRUCTION OR SHORING INDICATED ON THE STRUCTURAL DRAWINGS.

12. SEE MECH. AND ELEC. DEMOLITION PLANS FOR SPECIFIC DEMO OF MECHANICAL AND ELECTRICAL SYSTEMS.

13. SEE HAZARDOUS MATERIALS ABATEMENT REPORT FOR ADDITIONAL INFORMATION AND COORDINATION.

14. OWNER TO REMOVE EQUIPMENT THEY PROPOSE TO RETAIN PRIOR TO CONSTRUCTION.

DEMO LEGEND

-DEMOLISHED
-EXISTING WALL TO REMAIN
-HAZARDOUS MATERIALS

ROOM 201
- 12 INCH BY 12 INCH OFF WHITE WITH BROWN STREAKED FLOOR TILE (3% CHRYOSTILE)

-HAZARDOUS MATERIALS

ROOM HAS THE FOLLOWING HAZARDOUS MATERIALS:

ROOM 201
- 12 INCH BY 12 INCH OFF WHITE WITH BROWN STREAKED FLOOR TILE (3% CHRYOSTILE)

- REMEDIATION OF HAZARDOUS MATERIALS REQUIRED BEFORE SELECTIVE DEMOLITION CAN PROCEED. CONTRACTOR TO COORD WITH MSU AND ABATEMENT CONTRACTOR.

- SEE FULL HAZARDOUS MATERIALS REPORT AND SPECS FOR ADDITIONAL INFORMATION.

MONTANA STATE UNIVERSITY

406.994.5413
FAX: 406.994.5665
428 N. Last Chance Gulch
Helena, Montana 59601

11 11
Addendum #1 1/27/2019

MSU CLASSROOM
RENOVATIONS 2020
REID HALL 100% CD

MOSAIC
DD DDEE EEMM MMOO OO    PP PPLL LLAA AANN NNSS SS
----RR RREE EEII IIDD DD

406.449.2013
phone
www.mosaicarch.com
architecture architecture architecture architecture ----planning planning planning planning ----design design design design

1140 4061 1810 4060 4061 1810 4060 4061 1810 4060 4061 1810 4060 4061 1810 4060 4061 1810 4060
1. All paintings will be done in and/or around residential finishes per architect’s direction.
2. General contractor is responsible for breaking panels to architect for approval prior to order.
3. Provide 1/2” pipe approximation of all ceiling and panel finishes for lighting or ceiling fan placement.

Floor Finish Notes:
1. All finishes are to be utilized for the building’s interior uses only.
2. Provide appropriate transition at all material changes.
3. Provide appropriate trim at all intersections of different materials.
4. All materials to be utilized should be fire-rated.
5. All materials must be submitted to and approved by the architect prior to purchase.

Wall Finish Notes:
1. Panel finishes not clearly indicated for the building’s interior uses only.
2. Provide appropriate transition at all material changes.
3. Provide appropriate trim at all intersections of different materials.
4. All panel materials to be utilized should be fire-rated.
5. All materials must be submitted to and approved by the architect prior to purchase.

Ceiling Finish Notes:
1. Provide appropriate transition at all material changes.
2. Provide appropriate trim at all intersections of different materials.
3. All panel materials to be utilized should be fire-rated.
4. All materials must be submitted to and approved by the architect prior to purchase.

Door Notes:
1. All doors will be done in and/or around residential finishes per architect’s direction.
2. Provide appropriate transition at all material changes.
3. Provide appropriate trim at all intersections of different materials.
4. All door materials to be utilized should be fire-rated.
5. All materials must be submitted to and approved by the architect prior to purchase.
6. See Room Finish Schedule for listing of materials.

Ceiling Lay-in: 3/4” Acoustic Bamboo Panel, 3/4” thick with 1 1/2” reveal, 1/2” battens.

Grid Type: Prelude XL 15/16” grid

Wall Finishes:
- Paint color: Beige - Dewy Marshmallow - TYP. COC. - Color as indicated.
- Sherwin Williams SW 6202 - TYP. COC. - Color as indicated.
- Sherwin Williams SW 6250 - TYP. COC. - Color as indicated.

Glazing:
- Full tempered safety glass

Abbreviations:
A - Accordion
AM - Americon
FM - Full Door
MD - Mirror
PB - Panel
SM - Solid Panel
TH - Threshold
TT - Threshold
VF - Vision Frame
W - Window

General Door Notes:
1. All doors will be done in and/or around residential finishes per architect’s direction.
2. Provide appropriate transition at all material changes.
3. Provide appropriate trim at all intersections of different materials.
4. All door materials to be utilized should be fire-rated.
5. All materials must be submitted to and approved by the architect prior to purchase.

Masonry:
- All masonry finishes will be done in and/or around residential finishes per architect’s direction.
- Provide appropriate transition at all material changes.
- Provide appropriate trim at all intersections of different materials.
- All masonry materials to be utilized should be fire-rated.
- All materials must be submitted to and approved by the architect prior to purchase.

Alternate Paint:

Website: www.mosaicarch.com
January 16, 2020

Ms. Jaclyn Liebscher  
Campus Planning, Design, and Construction  
Montana State University  
P.O. Box 172760  
Bozeman, Montana 59717  

Delivered via email: jaclyn.liebscher@montana.edu  

SUBJECT: Pre-Renovation Asbestos Inspection Report  
Room 104 and 201  
Reid Hall  
Montana State University  
Bozeman, Montana  
Tetra Tech Project No. 117-8598024.100

Dear Ms. Liebscher:

On December 6 and 12, 2019, Tetra Tech, Inc. (Tetra Tech) conducted a pre-renovation asbestos inspection at the above referenced site. Based on correspondence with you prior to commencement of the project, Tetra Tech was instructed to conduct an inspection for suspect asbestos-containing materials (ACM) associated with Rooms 104 and 201. Details of our inspection is provided below.

**PRE-RENOVATION ASBESTOS INSPECTION**

The pre-renovation asbestos inspection was conducted in accordance with the Administrative Rules of Montana 17.74.354, using the currently recognized standard protocol developed under the National Emission Standards for Hazardous Air Pollutants (NESHAP) and the Asbestos Hazard Emergency Response Act (AHERA), as administered by the State of Montana Department of Environmental Quality (MDEQ).

Mr. Shane Matolyak of Tetra Tech, MDEQ Accredited Asbestos Inspector, collected samples of suspect ACM. His Inspector Accreditation Certification is presented in Attachment A.

The bulk samples were shipped, along with completed chain-of-custody documentation, to Crisp Analytical of Carrollton, Texas for the analysis of asbestos fibers by polarized light microscopy (PLM) using U.S. Environmental Protection Agency (EPA) Methods described in 40 CFR Part 763 Appendix E Subpart E (Interim and EPA 600/R-93 / 116 (Improved). Only one of the samples from each homogenous material was tested if the initial sample tested positive for asbestos. A copy of the laboratory analytical report is contained in Attachment B.

A summary of the ACMs identified to contain greater than 1% asbestos are provided in Table 1. Approximate sample collection locations are presented on Figure 1 and approximate ACM locations are presented on Figure 2.
Table 1
Summary of ACM
Room 201
Reid Hall
Montana State University
Bozeman, Montana

<table>
<thead>
<tr>
<th>HA Number</th>
<th>Material Description</th>
<th>Percent Asbestos</th>
<th>Material Type</th>
<th>NESHAP Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH-F2.1</td>
<td>12-inch by 12-inch off white with brown streak vinyl floor tile</td>
<td>3% Chrysotile</td>
<td>Miscellaneous</td>
<td>Category I Non-Friable</td>
</tr>
</tbody>
</table>

HA: Homogeneous Area Number
NESHAP: National Emission Standard for Hazardous Air Pollutants
RACM: Regulated Asbestos Containing Material

In accordance with state and federal regulations pertaining to asbestos, the ACMs identified in Table 1 are required to be abated prior to disturbance. The ACMs are required to be removed by a licensed asbestos abatement contractor using appropriate asbestos abatement methods and procedures in accordance with applicable state and federal regulations. Following the completion of asbestos abatement, a visual inspection and asbestos air clearance need to be conducted as required by ARM 17.74.357. Any contractor preparing to bid or perform work on the site should be informed of the potential presence of ACMs. Contractors should also be informed of compliance requirements under current state and federal regulations.

The following materials sampled from the site were suspected to contain asbestos but were found not to contain asbestos by laboratory analysis:

**Room 104**

- Brown mastic associated with ceiling tiles located throughout (RH-F6.1A, B, C)
- Brown mastic associated with cove base tiles located throughout (RH-F6.3A, B, C)
- 12-inch by 12-inch white ceiling tile with various sized pinholes located throughout (RH-M6.1A, B, C)
- Brown mastic associated with tan 4-inch rubber cove base located throughout (RH-M12.1A, B, C)
- 2-inch by 8-inch red brick with grey mortar walls located throughout (RH-M13.2A, B, C)
- Brown 5 ½-inch square ceramic floor tile with grey mortar located in front and sides of room (RH-M16.1A, B, C)
- Brown 5 ½-inch by 5-inch ceramic cove base tile with grey mortar located in front of teaching area of room (RH-M16.2A, B, C)
- Brown 6-inch square ceramic cove base tile with grey mortar located along stairs on each side and rear wall of room (M16.3A, B, C)
- Tan 6-inch square ceramic cove base tile with grey mortar located along stairs on East side of room (RH-M16.4A, B, C)
- Concrete floor located in seating areas (RH-M18.2A, B, C)
- Plaster ceilings located above 12-inch by 12-inch white ceiling tile located throughout (RH-S1.1A, B, C)
**Room 201**

- Black mastic associated with asbestos-containing off white with brown streaks 12-inch by 12-inch vinyl floor tile located through (RH-F2.1A, B, C)
- Brown mastic associated with ceiling tiles located throughout (RH-F6.1A, B, C)
- 12-inch by 12-inch white ceiling tile with various sized pinholes located throughout (RH-M6.1A, B, C)
- Brown and tan mastic associated with tan 4-inch rubber cove base located throughout (RH-M12.1A, B, C)
- 2-inch by 8-inch red brick with reddish grey mortar walls located throughout (RH-M13.1A, B, C)
- Concrete floor beneath floor tile located at front of room (RH-M18.1A, B, C)

**LIMITATIONS**

Our opinions are intended exclusively for use by Montana State University. The scope of services performed by Tetra Tech may not be appropriate to satisfy the needs of other users, and any use or re-use of this document, or the findings presented herein is prohibited and at the sole risk of the user. No additions or deletions are permitted without the express written consent of Tetra Tech. Furthermore, the opinions presented herein are limited by the requested scope of services and the site conditions existing at the time of our investigation. Therefore, our opinions and recommendations may not apply to future site conditions which we have not had the opportunity to evaluate.

It has been a pleasure assisting you with this project. If you should have any questions or need any additional information please contact me in our Tetra Tech Billings, Montana office at (406) 248-9161.

Respectfully submitted,

Tetra Tech, Inc.

Roger W. Herman, Jr.
Asbestos, Lead & IH Services Manager

PB/RWH

I:

Figures
Attachment A – Inspector Accreditation Certification
Attachment B – Laboratory Analytical Report
FIGURES
Pre-Renovation Asbestos Inspection
Sample Collection Location
  Reid Hall - Room 104
Montana State University
Bozeman, Montana

DATE: 1-16-2020
DRAWN BY: RWH
REVIEWED BY: RWH
PROJECT NO.: 117-8598023
Pre-Renovation Asbestos Inspection
Sample Collection Location
Reid Hall - Room 201
Montana State University
Bozeman, Montana

DATE: 1-16-2020
DRAWN BY: RWH
REVIEWED BY: RWH
PROJECT NO. 117-8598023
FIGURE NO. 2
ATTACHMENT A

Inspector Accreditation Certification
SHANE MATOLYAK
has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

MTA-5586
Asbestos Inspector 08/21/2020
Project Contractor/Supervisor 08/09/2020

MT DEQ Asbestos Control Program
ATTACHMENT B

Asbestos Laboratory Analytical Report
Materials Characterization - Bulk Asbestos Analysis
Laboratory Analysis Report - Polarized Light

Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8598024 MSU Reid Hall
Reference #: CAL19128685RL
Date: 12/23/2019

Analysis and Method
Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R/93 / 116 Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are performed. Calibrated liquid refractive oils are used as liquid mounting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjunction with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

Discussion
Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

Qualifications
CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrolton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM  
TCEQ# T104704513-15-3  
TDH 30-0235  
AIHA LAP, LLC Laboratory #102929
### Overview of Project Sample Material Containing Asbestos

<table>
<thead>
<tr>
<th>Customer Project:</th>
<th>117-8598024 MSU Reid Hall</th>
<th>CA Labs Project #:</th>
<th>CAL19128685RL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample #</td>
<td>RH-F2.1-A</td>
<td>Layer #</td>
<td>F2.1-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subsample</td>
<td>A-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical Description of Subsample</td>
<td>tan floor tile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asbestos type / calibrated visual estimate percent</td>
<td>3% Chrysotile</td>
</tr>
</tbody>
</table>

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company’s standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.
### Polarized Light Asbestiform Materials Characterization

#### Customer Info:
- **Attn:** Customer Project:
- **12/23/2019**
- **12/17/19 11:00am**
- **Phone #** None Given
- **Fax #** ______________
- **Senior Analyst** Julio Robles

#### CA Labs
- **Dedicated to Quality**
- **Crisp Analytical, L.L.C.**
  - 1929 Old Denton Road
  - Carrollton, TX 75006
  - Phone 972-242-2754
  - Fax 972-242-2798
- **CA Labs, L.L.C.**
  - 12232 Industriplex, Suite 32
  - Baton Rouge, LA 70809
  - Phone 225-751-5632
  - Fax 225-751-5634

#### Analysis Method:
- **Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116).**
- All samples received in good condition unless noted.

#### Preparation Method:
- HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

#### Sample Analysis:

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Com</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-F2.1-A</td>
<td>A-1</td>
<td>tan floor tile</td>
<td>y</td>
<td>3% Chrysotile</td>
<td>97% qu, ca</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F2.1-B</td>
<td>B-1</td>
<td>tan floor tile</td>
<td>Positive Stop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F2.1-B</td>
<td>B-2</td>
<td>black mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% gy, bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F2.1-B</td>
<td>B-3</td>
<td>brown wooden fragments</td>
<td>y</td>
<td>None Detected</td>
<td>100% ce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F2.1-C</td>
<td>C-1</td>
<td>tan floor tile</td>
<td>Positive Stop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F2.1-C</td>
<td>C-2</td>
<td>black mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% gy, bi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Approved Signatories:
- **Julio Robles**
- **Robert Olivarez**
- **Tanner Rasmussen**
- **Julio Robles**

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested
## Polarized Light Asbestiform Materials Characterization

### Customer Info:
- **Attn:** Customer Project:
- **12/23/2019**
- **Date:**
- **12/17/19 11:00am**
- **Phone #** None Given
- **Fax #**

### Customer Project:
- **CA Labs Project #:** CAL19128685RL
- **Sample # Com**
- **Comment**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-F6.1-A</td>
<td></td>
<td></td>
<td>brown mastic</td>
<td></td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F6.1- A-1</td>
<td>Brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F6.1- A-2</td>
<td>Off-white plaster</td>
<td>None Detected</td>
<td>5% ta</td>
<td>95% qu,ca,ve</td>
</tr>
<tr>
<td>RH-F6.1-B</td>
<td></td>
<td></td>
<td>brown mastic</td>
<td></td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F6.1- B-2</td>
<td>Off-white plaster</td>
<td>None Detected</td>
<td>5% ta</td>
<td>95% qu,ca,ve</td>
</tr>
<tr>
<td>RH-F6.1-C</td>
<td></td>
<td></td>
<td>brown mastic</td>
<td></td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F6.1- C-2</td>
<td>Off-white plaster</td>
<td>None Detected</td>
<td>5% ta</td>
<td>95% qu,ca,ve</td>
</tr>
<tr>
<td>RH-F6.2-A</td>
<td></td>
<td></td>
<td>brown mastic</td>
<td></td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F6.2- A-1</td>
<td>Brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
</tr>
</tbody>
</table>
### Polarized Light Asbestiform Materials Characterization

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-F6.2-B</td>
<td>B-1</td>
<td>brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F6.2-C</td>
<td>C-1</td>
<td>brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F6.3-A</td>
<td>A-1</td>
<td>brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F6.3-B</td>
<td>B-1</td>
<td>brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-F6.3-C</td>
<td>C-1</td>
<td>brown mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M6.1-A</td>
<td>A-1</td>
<td>white surfacing</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6.1-</td>
<td>A-2</td>
<td>tan ceiling tile</td>
<td>y</td>
<td>None Detected</td>
<td>100% ce</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dallas NVLAP Lab Code 200349-0 TEM/PLM  
TCEQ# T104704513-15-3  
TDH 30-0235  

**Approved Signatories:**

- Julio Robles  
  Analyst  
- Robert Olivarez  
  Analyst  
- C.T. R  
  Technical Manager  
- Tanner Rasmussen  
  Senior Analyst  
- Julio Robles  
  Analyst

---

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze  
6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested
## Polarized Light Asbestiform Materials Characterization

### Customer Info:

**Atttn:** Customer Project: Tetra Tech  
12/23/2019  
117-8598024 MSU Reid Hall  
5 Days  
12/17/19 11:00am  
None Given

### Phone # None Given

### Fax #

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-M6.1-B</td>
<td></td>
<td>B-1</td>
<td>white surfacing</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu, bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B-2</td>
<td>tan ceiling tile</td>
<td>y</td>
<td>None Detected</td>
<td>100% ce</td>
<td></td>
</tr>
<tr>
<td>RH-M6.1-C</td>
<td></td>
<td>C-1</td>
<td>white surfacing</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu, bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C-2</td>
<td>tan ceiling tile</td>
<td>y</td>
<td>None Detected</td>
<td>100% ce</td>
<td></td>
</tr>
<tr>
<td>RH-M6.2-A</td>
<td></td>
<td>A-1</td>
<td>white surfacing</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu, bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A-2</td>
<td>tan ceiling tile</td>
<td>y</td>
<td>None Detected</td>
<td>100% ce</td>
<td></td>
</tr>
<tr>
<td>RH-M6.2-B</td>
<td></td>
<td>B-1</td>
<td>white surfacing</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu, bi</td>
<td></td>
</tr>
</tbody>
</table>

### Analysis Method:

Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

### Preparation Method:

HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

### Approved Signatories:

Julio Robles  
Robert Olivarez  
Technical Manager  
Tanner Rasmussen  
Senior Analyst  
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze  
6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested

---

**AIHA LAP, LLC Laboratory #102929**

Dallas NVLAP Lab Code 200349-0 TEM/PLM  
TCEQ# T104704513-15-3  
TDH 30-0235
### Polarized Light Asbestiform Materials Characterization

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homo- geneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6.2-</td>
<td>B-2</td>
<td>tan ceiling tile</td>
<td>y  None Detected</td>
<td>100% ce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M6.2-C</td>
<td>C-1</td>
<td>white surfacing</td>
<td>y  None Detected</td>
<td>100% qu.bi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6.2-</td>
<td>C-2</td>
<td>tan ceiling tile</td>
<td>y  None Detected</td>
<td>100% ce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M12.1-A</td>
<td>M12.1-</td>
<td>brown mastic</td>
<td>y  None Detected</td>
<td>100% qu.gy.bi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M12.1-B</td>
<td>M12.1-</td>
<td>brown mastic</td>
<td>y  None Detected</td>
<td>100% qu.gy.bi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M12.1-C</td>
<td>M12.1-</td>
<td>brown mastic</td>
<td>y  None Detected</td>
<td>100% qu.gy.bi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M12.2-A</td>
<td>M12.2-</td>
<td>brown and tan mastic</td>
<td>n  None Detected</td>
<td>100% qu.gy.bi</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Analysis Method:** Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

**Preparation Method:** HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

**Supported Material:**
- ca - carbonate
- gy - gypsum
- bi - binder
- or - organic
- ma - matrix
- mi - mica
- ve - vermiculite
- ot - other
- pe - perlite
- qu - quartz
- fg - fiberglass
- mw - mineral wool
- wo - wollastonite
- br - brucite
- ka - kaolin (clay)
- pa - palygorskite (clay)
- sy - synthetic
- ce - cellulose
- ka - kaolin (clay)
- wy - white yam
- ta - talc

**Approved Signatures:**
1. Julio Robles  Analyst
2. Robert Olivarze  Analyst
3. C.T. Ren  Technical Manager
4. Tanner Rasmussen  Senior Analyst

**Date:** 12/23/2019
**Samples Received:** 12/17/19 11:00am
**Date Of Sampling:** None Given
**Purchase Order #:** CAL19128685RL

**Sample Information:**
- **Sample Name:** M6.2- B-2
- **Comment:** tan ceiling tile
- **Layer #:** B-2
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% ce

**Sample Information:**
- **Sample Name:** RH-M6.2-C
- **Comment:** white surfacing
- **Layer #:** C-1
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% qu.bi

**Sample Information:**
- **Sample Name:** M6.2- C-2
- **Comment:** tan ceiling tile
- **Layer #:** C-2
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% ce

**Sample Information:**
- **Sample Name:** RH-M12.1-A
- **Comment:** brown mastic
- **Layer #:** A-1
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% qu.gy.bi

**Sample Information:**
- **Sample Name:** RH-M12.1-B
- **Comment:** brown mastic
- **Layer #:** B-1
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% qu.gy.bi

**Sample Information:**
- **Sample Name:** RH-M12.1-C
- **Comment:** brown mastic
- **Layer #:** C-1
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% qu.gy.bi

**Sample Information:**
- **Sample Name:** RH-M12.2-A
- **Comment:** brown and tan mastic
- **Layer #:** A-1
- **Asbestos type:** None Detected
- **Non-asbestos fiber type:** 100% qu.gy.bi
Polarized Light Asbestiform Materials Characterization

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-M12.2-</td>
<td>M12.2-</td>
<td>B-1</td>
<td>brown and tan mastic</td>
<td>n</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M12.2-</td>
<td>M12.2-</td>
<td>C-1</td>
<td>brown and tan mastic</td>
<td>n</td>
<td>None Detected</td>
<td>100% qu,gy,bi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M13.1-</td>
<td>M13.1-</td>
<td>A-1</td>
<td>red bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ot</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A-2</td>
<td>tan mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M13.1-</td>
<td>M13.1-</td>
<td>B-1</td>
<td>red bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ot</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B-2</td>
<td>tan mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RH-M13.1-</td>
<td>M13.1-</td>
<td>C-1</td>
<td>red bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ot</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dallas NVLAP Lab Code 200349-0 TEM/PLM     TCEQ# T104704513-15-3     TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

Approved Signatories:

Julio Robles
Analyst

Robert Olivarez
Analyst

Technical Manager
Senior Analyst

Tanner Rasmussen
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages affecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested
## Polarized Light Asbestiform Materials Characterization

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>M13.1-</td>
<td></td>
<td>C-2</td>
<td>tan mortar</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ca</td>
</tr>
<tr>
<td>RH-M13.2-</td>
<td></td>
<td>A-1</td>
<td>red bricking</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A-2</td>
<td>brown mortar</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ca</td>
</tr>
<tr>
<td>RH-M13.2-</td>
<td></td>
<td>B-1</td>
<td>red bricking</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B-2</td>
<td>brown mortar</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ca</td>
</tr>
<tr>
<td>RH-M13.2-</td>
<td></td>
<td>C-1</td>
<td>red bricking</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C-2</td>
<td>brown mortar</td>
<td></td>
<td></td>
<td>None Detected</td>
<td>100% qu, ca</td>
</tr>
</tbody>
</table>

**Dallas NVLAP Lab Code 200349-0 TEM/PLM**

TCEQ# T104704513-15-3  TDH 30-0235

**AIHA LAP, LLC Laboratory #102929**

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

| ca - carbonate | mi - mica | fg - fiberglass | ce - cellulose |
| gy - gypsum    | ve - vermiculite | mw - mineral wool | br - brucite |
| bi - binder   | ot - other      | wo - wollastonite | ka - kaolin (clay) |
| or - organic  | pe - perlite   | ta - talc          | pa - palygorskite (clay) |
| ma - matrix   | qu - quartz   | sy - synthetic     |                  |

Approved Signatories:

Julio Robles
Analyst

Robert Olivarrez
Analyst

C.T. Rense
Technical Manager

Tanner Rasmussen
Senior Analyst

Julio Robles

---

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. <1% Result point counted positive
10. TEM analysis suggested
## Polarized Light Asbestiform Materials Characterization

### Customer Info:
**Attn:**
**Customer Project:** 117-8598024 MSU Reid Hall
**CA Labs Project #:** CAL19128685RL
**Date:** 12/23/2019
**Samples Received:** 12/17/19 11:00am

### CA Labs Project Details:
- **Phone #:** None Given
- **Fax #:** __________
- **Senior Analyst:** Julio Robles

### CA Labs Locations:
- **Crisp Analytical, L.L.C.**
  - 1929 Old Denton Road
  - Carrollton, TX 75006
  - Phone 972-242-2754
  - Fax 972-242-2798
- **CA Labs, L.L.C.**
  - 12232 Industriplex, Suite 32
  - Baton Rouge, LA 70809
  - Phone 225-751-5632
  - Fax 225-751-5634

### Analysis Details:
- **CA Labs Project #:** CAL19128685RL
- **Date:** 12/23/2019
- **Samples Received:** 12/17/19 11:00am

### Samples Received:

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Layer #</th>
<th>Analysts Physical Description of Sample</th>
<th>Homogeneity (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-M16.1-</td>
<td>A-1</td>
<td>red bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.1-</td>
<td>A-2</td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ca</td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.1-</td>
<td>B-1</td>
<td>red bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.1-</td>
<td>B-2</td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ca</td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.1-</td>
<td>C-1</td>
<td>red bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.1-</td>
<td>C-2</td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ca</td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.2-</td>
<td>A-1</td>
<td>brown bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td>100% qu.ca</td>
</tr>
</tbody>
</table>

### Analysis Method:
- **AIHA LAP, LLC Laboratory #102929**
- All samples received in good condition unless noted.

### Preparation Method:
- HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

### Approved Signatories:
- Julio Robles
- Robert Olivarez
- C.T. Robles
- Technical Manager
- Senior Analyst

### Notes:
1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Asbestos in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested
### Polarized Light Asbestiform Materials Characterization

**Customer Info:**

**Attn:** Customer Project:

### CRISP ANALYTICAL, L.L.C.

12232 Industriplex, Suite 32

Baton Rouge, LA 70809

Phone 225-751-5632

Fax 225-751-5634

### Dedicated to Quality

CA Labs

1929 Old Denton Road

Carrollton, TX 75006

Phone 972-242-2754

Fax 972-242-2798

CA Labs Project #: CAL19128685RL

**Date:** 12/23/2019

**Samples Received:** 12/17/19 11:00am

**Samples Received:** None Given

**Purchase Order #:**

**Date Of Sampling:**

**Number of Samples:**

**Number of Samples:**

**Number of Samples:**

**Number of Samples:**

### Samples Table

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogeneous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16.2-</td>
<td></td>
<td></td>
<td>tan mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% gy.bi</td>
<td></td>
</tr>
<tr>
<td>RH-M16.2-B</td>
<td></td>
<td></td>
<td>brown brickling</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td></td>
</tr>
<tr>
<td>M16.2-</td>
<td></td>
<td></td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ca</td>
<td></td>
</tr>
<tr>
<td>RH-M16.2-C</td>
<td></td>
<td></td>
<td>brown brickling</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td></td>
</tr>
<tr>
<td>M16.3-</td>
<td></td>
<td></td>
<td>tan bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ot</td>
<td></td>
</tr>
<tr>
<td>RH-M16.3-A</td>
<td></td>
<td></td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu.ca</td>
<td></td>
</tr>
</tbody>
</table>

**Analysis Method:** Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116).

**Preparation Method:** HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

**AIHA LAP, LLC Laboratory #102929**

**Dallas NVLAP Lab Code 200349-0 TEM/PLM**

**TCEQ# T104704513-15-3**

**TDH 30-0235**

### Approved Signatories:

Julio Robles

Robert Olivarez

C. T. Rasmussen

Julio Robles

Technical Manager

Senior Analyst

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages affecting fibrous percentages
3. Asbestos in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested
**Polarized Light Asbestiform Materials Characterization**

**Customer Info:**

**Attn:**

**Customer Project:**

CA Labs Project #: CAL191286685RL

**Date:** 12/23/2019

**Purchase Order #:**

---

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Homogenous (Y/N)</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-M16.3-B</td>
<td>M16.3-</td>
<td>B-1</td>
<td>tan bricking</td>
<td>y</td>
<td>None Detected</td>
<td></td>
<td>100% qu.ot</td>
</tr>
<tr>
<td>RH-M16.3-B</td>
<td>M16.3-</td>
<td>B-2</td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td></td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.3-C</td>
<td>M16.3-</td>
<td>C-1</td>
<td>tan bricking</td>
<td>y</td>
<td>None Detected</td>
<td></td>
<td>100% qu.ot</td>
</tr>
<tr>
<td>RH-M16.3-C</td>
<td>M16.3-</td>
<td>C-2</td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td></td>
<td>100% qu.ca</td>
</tr>
<tr>
<td>RH-M16.4-A</td>
<td>M16.4-</td>
<td>A-1</td>
<td>tan bricking</td>
<td>y</td>
<td>None Detected</td>
<td></td>
<td>100% qu.ot</td>
</tr>
<tr>
<td>RH-M16.4-A</td>
<td>M16.4-</td>
<td>A-2</td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td></td>
<td>100% qu.ca</td>
</tr>
</tbody>
</table>

---

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

**AIHA LAP, LLC Laboratory #102929**

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

**Approved Signatories:**

1. Julio Robles
2. Robert Olivarz
3. C. T. Rea

---

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested
### Polarized Light Asbestiform Materials Characterization

**Customer Info:**

**Attn:**

**Customer Project:**

**CA Labs Project #:**

**Date:**

**Turnaround Time:**

**Samples Received:**

**Date Of Sampling:**

**Purchase Order #:**

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Analysts Physical Description of Subsample</th>
<th>Asbestos type / calibrated visual estimate percent</th>
<th>Non-asbestos fiber type / percent</th>
<th>Non-fibrous type / percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-M16.4-</td>
<td></td>
<td></td>
<td>tan bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ot</td>
</tr>
<tr>
<td>B-1</td>
<td></td>
<td></td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>RH-M16.4-</td>
<td></td>
<td></td>
<td>tan bricking</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ot</td>
</tr>
<tr>
<td>C-1</td>
<td></td>
<td></td>
<td>gray mortar</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>RH-M18.1-</td>
<td></td>
<td></td>
<td>gray concrete</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>A-1</td>
<td></td>
<td></td>
<td>black mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% gy,bi</td>
</tr>
<tr>
<td>M18.1-</td>
<td></td>
<td></td>
<td>gray concrete</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
</tbody>
</table>

**Analysis Method:**

Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116).

**Preparation Method:**

HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

---

**AIHA LAP, LLC Laboratory #102929**

**Dallas NVLAP Lab Code 200349-0 TEM/PLM**

**TCEQ# T104704513-15-3**

**TDH 30-0235**

**Approved Signatories:**

Julio Robles

Robert Olivarez

Technical Manager

Tanner Rasmussen

Senior Analyst

Julio Robles

---

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages affecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on Vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

---
## Polarized Light Asbestiform Materials Characterization

### Customer Info:

**Tetra Tech**  
7100 Commercial Ave. Ste 4  
Billings, MT 59101  
Phone: 406-248-9161  
Fax: 406-248-9282

---

### Customer Project:  
117-8598024 MSU Reid Hall

**CA Labs Project #:** CAL19128685RL

**Date:** 12/23/2019

**Samples Received:** 12/17/19 11:00am

**Number of Samples:** None Given

**Number of Samples:** None Given

---

### Analysis Method:

Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116).

All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

---

### Analysts Physical Description of Subsample

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Comment</th>
<th>Layer #</th>
<th>Subsample</th>
<th>Asbestos type</th>
<th>Non-asbestos fiber type</th>
<th>Non-fibrous type</th>
</tr>
</thead>
<tbody>
<tr>
<td>M18.1-</td>
<td></td>
<td>B-2</td>
<td>black mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% gy,bi</td>
</tr>
<tr>
<td>RH-M18.1-</td>
<td>C</td>
<td>C-1</td>
<td>gray concrete</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>C-2</td>
<td>black mastic</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>RH-M18.2-</td>
<td>A</td>
<td>A-1</td>
<td>gray concrete</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>RH-M18.2-</td>
<td>B</td>
<td>B-1</td>
<td>gray concrete</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>RH-M18.2-</td>
<td>C</td>
<td>C-1</td>
<td>gray concrete</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ca</td>
</tr>
<tr>
<td>S1.1-</td>
<td></td>
<td>A-1</td>
<td>tan plaster</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ve,ca</td>
</tr>
</tbody>
</table>
## Polarized Light Asbestiform Materials Characterization

**Customer Info:**

**Attn:**

_Tetra Tech_

7100 Commercial Ave. Ste 4

Billings, MT 59101

**Phone #** 406-248-9161

**Fax #** 406-248-9282

**Customer Project:**

117-8598024 MSU Reid Hall

**Date:** 12/23/2019

**Turnaround Time:** 5 Days

**Samples Received:**

12/17/19 11:00am

**Date Of Sampling:**

None Given

**CA Labs Project #:**

CAL191286685RL

**Purchase Order #:**

**Sample #** Com Layer Analysts Physical Description of Subsample Homogeneous (Y/N) Asbestos type / calibrated visual estimate percent Non-asbestos fiber type / percent Non-fibrous type / percent

<table>
<thead>
<tr>
<th>RH-S1.1-B</th>
<th>B-1</th>
<th>tan plaster</th>
<th>y</th>
<th>None Detected</th>
<th>100% qu,ve,ca</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-S1.1-C</td>
<td>C-1</td>
<td>tan plaster</td>
<td>y</td>
<td>None Detected</td>
<td>100% qu,ve,ca</td>
</tr>
</tbody>
</table>

**Dallas NVLAP Lab Code 200349-0 TEM/PLM**

**TCEQ#** T104704513-15-3

**TDH 30-0235**

**AIHA LAP, LLC Laboratory #102929**

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

- **ca** - carbonate
- **mi** - mica
- **fg** - fiberglass
- **ce** - cellulose
- **gy** - gypsum
- **ve** - vermiculite
- **br** - brucite
- **bi** - binder
- **ot** - other
- **wo** - wollastonite
- **ka** - kaolin (clay)
- **or** - organic
- **pe** - perlite
- **pa** - pyrophyllite (clay)
- **ma** - matrix
- **qu** - quartz
- **sy** - synthetic
- **ve** - vermiculite
- **ta** - talc
- **pa** - pyrophyllite (clay)

Approved Signatories:

- Julio Robles
  - Analyst
  - (Signature)

- Robert Olivarz
  - Analyst
  - (Signature)

- C. R.
  - Technical Manager
  - (Signature)

- Tanner Rasmussen
  - Senior Analyst
  - (Signature)

- Julio Robles
  - Analyst
  - (Signature)

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages affecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1%. Result point counted positive
10. TEM analysis suggested
<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Receiving By</th>
<th>Date &amp; Time</th>
<th>Receiving By</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-00 AM</td>
<td></td>
<td>12-16-19</td>
<td></td>
</tr>
<tr>
<td>11-17-19</td>
<td></td>
<td>10:00</td>
<td></td>
</tr>
</tbody>
</table>

**10 Day**
- Rush
- Same Day
- 1 Day
- 2 Day
- 3 Day
- 5 Day
- 1 Day

**TURNOVER TIME**
- Analyze until Positive Stop: Positive Stop by Material Type as Needed
- Analyze and Report All Separate Layers per EPA 600
- Report Composition for Drywall System per NEHSAP (where applicable)
- Multi-Layered Samples

**PLM INFORMATION**
- PLM Point Counter: PC 400 Points (All samples greater than 0%, but less than 10%)
- PLM EPA 600/33116

**Project Information**
- Project Number: [117-8598024]
- Project Name: Biozeman
- MSU Field Hall
- Client: MSU

**Sampler Information**
- Roger W. Herman (Print): Roger W. Herman
- Shane Maloyak
- Cell: 406.581.3027
- Cell: 406.581.3027
- Direct: 406.384.0227
- Cell: 406.70.4844
- ShaneMaloyak@teratech.com
- ShaneMaloyak@teratech.com

**Contact Information**
- Primary Contact: TeraTech Inc.
- Additional Contact: Shane Maloyak
- Phone: 406.248.9161
- Phone: 406.248.9161
- Email: ShaneMaloyak@teratech.com
- Email: ShaneMaloyak@teratech.com

**ASBESTOS PLM CHAIN OF CUSTODY**
- CA19128685
<table>
<thead>
<tr>
<th>NOTES</th>
<th>SAMPLE DESCRIPTION AND LOCATION</th>
</tr>
</thead>
</table>

ASBESTOS PLM CHAIN OF CUSTODY

CIL19128485
<table>
<thead>
<tr>
<th>NOTA</th>
<th>SAMPLE DESCRIPTION AND LOCATION</th>
<th>LAB ID</th>
<th>HOMOGENEOUS ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM 104</td>
<td>Brown mastic adhesive cover base lies in FM 104.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM 104</td>
<td>Brown mastic adhesive cover base lies in FM 104.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASBESTOS PLAN CHAIN OF CUSTODY

CAL 1912 8685
<table>
<thead>
<tr>
<th>Date</th>
<th>Sample Description and Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/004m</td>
<td>2-inch by 8-inch red brick with grey mortar; RM 104</td>
<td></td>
</tr>
<tr>
<td>12-17-19</td>
<td>2-inch by 8-inch red brick with grey mortar; RM 104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-inch by 8-inch red brick with grey mortar; RM 104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-inch by 8-inch red brick with reddish grey mortar; RM 201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-inch by 8-inch red brick with reddish grey mortar; RM 201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-inch by 8-inch red brick with reddish grey mortar; RM 201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4-inch lan cover base with yellow mastic (or glue) over brown mastic; RM 201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4-inch lan cover base with yellow mastic (or glue) over brown mastic; RM 201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4-inch lan cover base with yellow mastic (or glue) over brown mastic; RM 201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4-inch lan cover base with brown mastic; RM 104</td>
<td></td>
</tr>
</tbody>
</table>

**Asbestos PRM Chain of Custody**

CAL1912860085
<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Sample Description and Location</th>
<th>Homogeneous ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FH-M16.1-C</td>
<td>Brown 5/16-inch square hole reinforced with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.1-B</td>
<td>Brown 5/16-inch square hole reinforced with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.1-A</td>
<td>Brown 5/16-inch square hole reinforced with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.2-C</td>
<td>Brown 5/16-inch by 5/16-inch cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.2-B</td>
<td>Brown 5/16-inch by 5/16-inch cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.2-A</td>
<td>Brown 5/16-inch by 5/16-inch cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.3-A</td>
<td>Brown 6-inch square cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.3-B</td>
<td>Brown 6-inch square cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.3-C</td>
<td>Brown 6-inch square cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.4-A</td>
<td>Brown 6-inch square cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.4-B</td>
<td>Brown 6-inch square cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
<tr>
<td>FH-M16.4-C</td>
<td>Brown 6-inch square cove base tile with grey mortar, RM 104</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

Asbestos PPM Chain of Custody

CAL191286885

**TETRA TECH**
<table>
<thead>
<tr>
<th>Sample Description and Location</th>
<th>Homogeneous ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaster ceiling above ceiling tiles. RM 104.</td>
<td>RH-W1.1-B</td>
</tr>
<tr>
<td>Concrete floor beneath the at front of RM 201.</td>
<td>RH-W1.1-A</td>
</tr>
<tr>
<td>Ten 6-inch square base tile with grey mortar. RM 104 fourth stair</td>
<td>RH-W1.6-8-C</td>
</tr>
</tbody>
</table>

**Notes**
11:00 AM
12-17-19

<table>
<thead>
<tr>
<th>NOTES</th>
<th>SAMPLE DESCRIPTION AND LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASBESTOS PLM CHAIN OF CUSTODY

CAL-1912-8485