



**NESHAP RENOVATION / DEMOLITION INSPECTION OF  
ASBESTOS CONTAINING MATERIALS  
AND OTHER HAZARDOUS WASTE MATERIALS  
FOR THE PROPERTY KNOWN AS:**

320 Wood St.  
Muskegon, MI 49442

**Prepared for:**

City of Muskegon  
933 Terrace Street, Room 202  
Muskegon, MI 49440  
231-724-6760

**Prepared By:**

ETC - Environmental Services  
38900 Huron River Drive  
Romulus, Michigan 48174  
(734) 955-6600

January 11th, 2016

ETC Job #: 177224

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## 1. Introduction

The City of Muskegon contracted ETC - Environmental Services (ETC) to perform a renovation / demolition inspection of the building located at 320 Wood St., Muskegon, MI 49442. This inspection was conducted on January 11th, 2016.

The EPA under the National Emission Standards for Hazardous Air Pollutants (NESHAPs) asbestos rule requires that prior to the start of a renovation and/or demolition project, the building must be inspected for asbestos containing materials (ACM's). The purpose of this inspection was to determine the presence and quantity of friable or potentially friable ACM's. Depending on the ACM found and the condition that it is in, removal of the material may be necessary before demolition work is to begin. Prior to the start of a demolition project, it is necessary that friable or potentially friable ACM's be removed.

ETC's certified inspector, Aaron Yankee and Stewart Yankee, conducted the ACBM inspection and identified materials suspected of containing asbestos. Aaron Yankee and Stewart Yankee's State of Michigan Asbestos Building Inspector's certification number is A-42490 and A-4115.

Wherever potential asbestos materials were found, data was collected and recorded regarding quantities and observed conditions of the suspect material. As required by the Occupational Safety and Health (OSHA) and the Environmental Protection Agency (EPA), three (3) samples of each type of material were taken in different locations to determine actual asbestos content.

Included along with this report are copies of the bulk sample results, a site map showing sample locations and a copy of the State of Michigan Notification of Intent to Renovate/Demolish. This information will be necessary for the asbestos abatement contractor selected to perform asbestos abatement activities in the house. ETC has included its information on the second page.

## 2. Information about Asbestos Inspections

### *a. Sampling Procedures*

Representative bulk samples of suspect asbestos containing building materials were randomly collected within each building area. The materials sampled were broken down into distinct homogenous (similar) materials. Homogenous material determination was based on the following criteria:

- Similar physical characteristics (same color and texture, etc.)
- Application (sprayed-on, troweled-on, assembly into a system etc.)
- Material function (Thermal insulation, floor tile, wallboard system etc.)

It is important to note that some companies are only taking one sample of select non-friable materials. While this procedure is allowed under the NESHAPs regulation, the OSHA standard suggests a minimum of three samples of each

homogeneous material. This is a better approach due the potential errors in the analytical method used. **To provide the most accurate information possible and be sure of our results, ETC chooses to take three samples of each sampled material.**

Additionally, some inspection companies have taken to assuming that materials contain asbestos rather than paying for the time and expenses of sampling them. This is not if the clients best interest. If materials are being assumed to contain asbestos, the client must treat them as asbestos containing even if they are not. This can lead to significantly increased costs for the building owner. **In general, ETC only assumes materials to be asbestos when sampling them will ruin their integrity (i.e. fire doors) or when they are too dangerous to sample (i.e. live electrical lines).**

*b. PLM Analysis Methodology*

PLM samples were analyzed utilizing the Environmental Protection Agency's Test Methods: Methods for the determination of Asbestos in Bulk Building Materials (EPA 600/R-93/116, July 1993) and the McCrone Research Institute's The Asbestos Particle Atlas as method references. Additional treatment and tests may be required to accurately define composition (i.e. ashing, extraction, acetone treatment, and TEM).

Analysis was performed by using the bulk sample for visual observation and slide preparation(s) for microscopic examination and identification. The samples analyzed for asbestos (chrysotile, amosite, crocidolite, anthophyllite, and actinolite/tremolite), fibrous non-asbestos constituents (mineral wool, cellulose, etc.) and non-fibrous constituents. Using a stereoscope, the microscopist visually estimated relative amounts of each constituent by determining the volume of each constituent in proportion to the total volume of the sample.

According to NESHAP requirements any bulk sample that has asbestos content above 0% but below 10% should be point counted for final determination of percentage. **Please note, the contract DID NOT include point counting as defined in NESHAP.** Should City of Muskegon wish to have this additional analysis conducted, ETC can send any samples in this range for point counting. However, this will require additional charges for analysis. Therefore, for any samples in the range above 0% but below 10% these results can only be considered estimates.

*c. Interpretation of Inspection Results*

A material is considered by OSHA, the EPA and the State of Michigan to be asbestos-containing if at least one sample collected from the homogenous material has asbestos fibers present in a concentration greater than one percent (>1 %).

A summary of the materials sampled, asbestos content, quantities and locations can be found on the Chart A in Section 4.0 – Summary and Conclusions.

*d. Other Hazardous Materials*

Additionally, a chart showing other hazardous materials (above the household quantity limitations) found at the site is included in Chart B – Section 4.0 – Summary and Conclusions. This lists non-asbestos materials that may be hazardous and require special handling and disposal requirements. Items that might be in this category include things like mercury switches, florescent lighting tubes, halogen lights, Freon in refrigeration units, pesticides, herbicides, paints, solvents, etc.

However, under the Resource Conservation and Recovery Act (RCRA) that addresses hazardous wastes, there is residential household quantity exclusion. Therefore, these materials will only be listed in this chart if they are present in quantities larger than what would be expected in a normal household. For instance, if the home was a farm and had a 55 gallon drum of pesticide present, this would be listed in Chart B. On the other hand if there were a few pesticide containers present as would be found in most homes these materials would not be listed.

### **3. Regulatory Requirements**

There are two main regulations that affect renovation / demolition of residential homes and asbestos materials. The MIOSHA asbestos construction standard has requirements to protect the workers performing the renovation / demolition while the EPA – NESHAPs regulation has requirements that protect the general public and environment.

*a. MIOSHA Construction Asbestos Regulations*

The MIOSHA standard establishes a permissible exposure limit (PEL) average over an 8 hour day. This means that this is the maximum level of asbestos that workers and/or employees can be exposed to without respirator protection and protective clothing. Should air sampling during renovation or demolition activities be at or near the PEL the employer will have to:

- Notify Workers
- Worker Training
- Post Danger Signs
- Establish periodic air monitoring regulated areas, and decontamination facilities
- Provide respiratory protection and personnel protective clothing
- Employee Respiration Monitoring
- Record keeping

- Medical Surveillance (if employee will be exposed 30 days per year or more).

Until recently, only schools were federally mandated to conduct asbestos inspections of their buildings. However, with the passage of new MIOSHA regulations, all building owners (in this case City of Muskegon) is now required to notify all renovation / demolition workers of presence, location and quantity of all asbestos containing building materials within the building.

In most cases, it is more practical to have an asbestos contractor removal the ACM from the building prior to renovation / demolition than have the renovation / demolition contractor comply with all these requirements.

*b. NESHAP Requirements*

Prior to beginning a renovation or demolition project, NESHAP (enforced in Michigan by the Department of Environmental Quality – MDEQ) requires a full inspection of the following materials to determine their asbestos content:

- Friable Materials
- Category 1 – Non-friable Materials (Packings, gaskets, resilient floor covering, and asphalt roofing products)
- Category II – Non-friable Materials (All other non-friable materials)

In general, MDEQ requires any identified asbestos materials to be removed prior to renovation or demolition activities that would dislodge, disturb or otherwise affect these materials. There is an exception that if a licensed supervisor will state in writing that the material will not become friable during the renovation / demolition process it may be left in the building. However, be very careful with this exemption. MDEQ has stated that they believe that the only materials that MIGHT qualify for this exemption would be roofing felt and asphalt roofing materials. In order to use even this small exemption, the following would be required from the demolition contractor:

- A licensed asbestos abatement supervisor will sign that the material will not become friable
- The supervisor will have to be on-site during all renovation or demolition to insure that material stays intact.
- If MDEQ reviews that site and finds the material crumbled or disturbed both the contractor and building owner may be cited up to \$27500 per day.
- The waste generated from the activity must be taken to an asbestos dump and they must be informed that the waste is mixed asbestos waste.

It is obviously very expensive and difficult to try and leave ACM within and area / building during renovation or demolition activities. Therefore, ETC recommends that all ACM be removed. This is why ETC does not assume materials to be ACM.

### *c. Notification Requirements*

When performing abatement work within the State of Michigan, notification requirements depend on the quantity of materials and the friability of the material being removed.

If removing friable material above >160 square feet and / or 260 linear feet, the contractor must provide a ten working day notification to Michigan Department of Environmental Quality (MDEQ) and a ten calendar day notification to Michigan Department of Licensing and Regulatory Affairs (LARA) – Asbestos Program. If only non-friable materials are being removed, MDEQ does not want a notification.

If removing above >15 square feet but < 160 square feet, or > 10 linear feet but < 260 linear feet the contractor only needs to notify the LARA as stated above.

For removals of < 15 square feet or < 10 linear feet, not notification is required.

In conjunction with any notification to LARA, the contractor must pay a 1% fee for the project. This fee is to reflect 1% of the total abatement contract amount.

### *d. Abatement Requirements*

Any company hired to remove identified ACM must insure that all asbestos companies, supervisors, workers are be licensed by the LARA. Additionally, these companies must insure that:

- The State of Michigan must be notified of the work in advance
- An asbestos supervisor must be on-site at all times when work is occurring
- All work must be completed within regulated work areas
- All work must be completed utilizing asbestos work practices defined in the MIOSHA regulations
- Have on-site personnel sampling conducted during the removal activities
- The contractor must request and pass (below 0.05 f/cc) a final asbestos clearance performed by a neutral third party prior to dismantling and leaving the site.
- Meet all other current regulations and standards.

In addition to these requirements, ETC strongly recommends that City of Muskegon insure that they receive the following documents from the contractor prior to making final payment:

- Written / signed documentation from the supervisor if any asbestos materials are to be left in place during renovation or demolition (Not recommended)
- Copy of the asbestos abatement notification
- Copy of the personnel monitoring during the work

- Copy of the final asbestos clearance report

By requiring these documents, City of Muskegon will substantially reduce their liability should something occur during the asbestos removal at this site.

#### 4. Summary and Conclusions

***ETC has endeavored to identify potential asbestos containing materials (ACM) that were accessible (without destructive testing) at the time of the inspection, other potential ACM may be buried or inaccessible at the time of the initial survey.***

***As has been evidenced on numerous other demolition and renovation projects, when tearing out or demolishing existing building surfaces, it is very common to encounter other building materials that were not accessible during the initial testing for ACM or lead / cadmium painted surfaces. It is therefore incumbent on City of Muskegon or their selected construction / renovation contractor to refer to the chart of sampled materials consistently during the renovation process. If materials are encountered during this process that are not clearly identifiable on the initial survey chart, ETC should be called to test and verify the asbestos / lead / cadmium content of these items.***

***ETC cannot be held responsible for materials encountered after the initial survey is completed unless we are contacted and given the opportunity to test and verify the material content. The costs associated with this additional testing are not included within the scope of this project and will incur additional charges for the additional sampling and analysis.***

On the following charts, please find:

- Chart A - Is a summary of the materials that were sampled. Materials that test positive for asbestos have been bolded to make identification easier. ***If additional materials are encountered that were not previously identified, the contractor is responsible to contact ETC and have these materials tested. These additional sampling costs are not included in the scope of work or price for this survey.***

Quantities that are listed are estimates only; in general, listed quantities represent only what was visible during testing. It is likely that where ACM has been identified throughout specific floors, similar materials and quantities exist on other like floors. It is the contractors'/client's responsibility to verify all amounts of asbestos identified during any bid process, or during future renovation and/or demolition activities. Materials that are identical in both relative location and physical description to already tested materials listed in this report should always be assumed to be ACM.

- Chart B – Is a list of other hazardous materials (above RCRA household quantity levels) that will require special handling and disposal by the contractor.

<b>Chart A – Materials Sampled and Asbestos Content</b>				
<b>Material #</b>	<b>Material Description</b>	<b>Asbestos</b>	<b>Quantity</b>	<b>Location (Refer to map in Appendix B)</b>
1	Plaster, grey. Base layer, white finish layer.	Yes	900 SF	Rooms 2,3,4,5,7
2	Plaster on board, plaster, finish on wallboard base.	Yes	700 SF	Rooms 7,8
3	Duct Wrap, white.	Yes	30 SF	Rooms 1,2,5,8,10
4	Chimney Cement	No	4 SF	Rooms 10
5	Texture paint on drywall	No	600 SF	Rooms 1,2,3
6	Linoleum, cream 6" square pattern	No	225 SF	Rooms 5,8
7	Drywall, grey	No	3000 SF	Rooms 1,2,3,4
8	Seam Tape, White	No	3000 SF	Rooms 1,2,3,4
9	Mud/Joint compound. White.	No	3000 SF	Rooms 1,2,3,4
10	Blown in loose fiber. In wall cavity 8.	No	2,300 SF	Exterior walls/Attic
11	House Wrap, under wood siding.	No	1,400 SF	Exterior Walls
12	Roof Shingles, Black	No	2500 SF	Exterior
13	Window Glazing, white	No	16 Units	Exterior

**Chart B – Other Hazardous Materials Located**  
(Above the household quantity Limitations)

Material #	Material Description	Quantity	Location
1	Smoke Detector	1	Living Room

**5. Inspector's Information**

All inspection work was completed by a Michigan certified asbestos abatement inspector as detailed below.

This report reviewed and submitted by:



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Aaron Yankee and Stewart Yankee  
State of Michigan Certified Asbestos Building Inspector  
State of Michigan Card #: A-42490 and A-4115

# **APPENDICES**

## **APPENDIX A**

# **POLARIZED LIGHT MICROSCOPY ASBESTOS ANALYSIS RESULT FORMS**

# ENVIRONMENTAL TESTING LABORATORIES, INC.



38900 HURON RIVER DRIVE, SUITE 200  
ROMULUS, MICHIGAN 48174  
(734) 955-6600  
FAX: (734) 955-6604

## REVISED REPORT

To : Environmental Testing And Consulting Inc.  
38900 Huron River Drive  
Romulus, MI 48174

Project Location : Vacant Residence  
320 Wood St., Muskegon, MI

Attention : Samantha Ferguson

Client Project : N/A

ETC Job : 177224

Report Date : 1/19/2016

Login #	Sample ID	Work Requested	Completed
387834	01A	Asbestos Analysis	01/19/2016
387835	01B	Asbestos Analysis	01/19/2016
387836	01C	Asbestos Analysis	01/19/2016
387837	01D	Asbestos Analysis	01/19/2016
387838	01E	Asbestos Analysis	01/19/2016
387839	02A	Asbestos Analysis	01/19/2016
387840	02B	Asbestos Analysis	01/19/2016
387841	02C	Asbestos Analysis	01/19/2016
387842	03A	Asbestos Analysis	01/19/2016
387843	03B	Asbestos Analysis	01/19/2016
387844	03C	Asbestos Analysis	01/19/2016
387845	04A	Asbestos Analysis	01/19/2016
387846	04B	Asbestos Analysis	01/19/2016
387847	04C	Asbestos Analysis	01/19/2016
387848	05A	Asbestos Analysis	01/19/2016
387849	05B	Asbestos Analysis	01/19/2016
387850	06A	Asbestos Analysis	01/19/2016
387851	06B	Asbestos Analysis	01/19/2016
387852	07A	Asbestos Analysis	01/19/2016
387853	07B	Asbestos Analysis	01/19/2016

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Login #	Sample ID	Work Requested	Completed
387854	08A	Asbestos Analysis	01/19/2016
387855	08B	Asbestos Analysis	01/19/2016
387856	09A	Asbestos Analysis	01/19/2016
387857	09B	Asbestos Analysis	01/19/2016
387858	10A	Asbestos Analysis	01/19/2016
387859	10B	Asbestos Analysis	01/19/2016
387860	11A	Asbestos Analysis	01/19/2016
387861	11B	Asbestos Analysis	01/19/2016
387862	12A	Asbestos Analysis	01/19/2016
387863	12B	Asbestos Analysis	01/19/2016
387864	13A	Asbestos Analysis	01/19/2016
387865	13B	Asbestos Analysis	01/19/2016

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Reviewed by:



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Quality Assurance Coordinator

## Polarized Light Microscopy Asbestos Analysis Report

**To :** Environmental Testing And Consulting Inc.  
 38900 Huron River Drive  
 Romulus, MI 48174  
**Location :** Vacant Residence  
 320 Wood St., Muskegon, MI

**ETC Job :** 177224  
**Client Project :** N/A  
**Date Collected :** 01/11/2016  
**Date Received :** 01/13/2016  
**Date Analyzed :** 01/19/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
387834 01A KN 5, Clg Layer-1 Analyst: Dave Cousino	Plaster	Grey Non-Fibrous Homogenous	3% Cellulose	95% Other	2% Chrysotile
387834 01A KN 5, Clg Layer-2 Analyst: Dave Cousino	Skim Coat	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387835 01B KN 5, E Wall Layer-1 Analyst: Dave Cousino		Not Analyzed			
387835 01B KN 5, E Wall Layer-2 Analyst: Dave Cousino	Skim Coat	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387836 01C BR 3, E Wall Layer-1 Analyst: Dave Cousino		Not Analyzed			
387836 01C BR 3, E Wall Layer-2 Analyst: Dave Cousino	Skim Coat	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
387837 01D Bath 4, Clg Layer-1 Analyst: Dave Cousino		Not Analyzed			
387837 01D Bath 4, Clg Layer-2 Analyst: Dave Cousino	Skim Coat	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387838 01E BR 7, CL Wall Layer-1 Analyst: Dave Cousino		Not Analyzed			
387838 01E BR 7, CL Wall Layer-2 Analyst: Dave Cousino	Skim Coat	White Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
387839 02A BR 7, S Wall Layer-1 Analyst: Dave Cousino	Plaster (on wallboard base)	Grey Non-Fibrous Homogenous	10% Cellulose	88% Other	2% Chrysotile
387839 02A BR 7, S Wall Layer-2 Analyst: Dave Cousino	Drywall	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected

Polarized Light Microscopy Asbestos Analysis Report

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38900 Huron River Drive  
Romulus, MI 48174  
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**Date Collected :** 01/11/2016  
**Date Received :** 01/13/2016  
**Date Analyzed :** 01/19/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
387840 02B BR 7, W Wall Layer-1 Analyst: Dave Cousino		Not Analyzed			
387840 02B BR 7, W Wall Layer-2 Analyst: Dave Cousino	Drywall	White Non-Fibrous Homogenous	3% Cellulose	97% Other	None Detected
387841 02C BR 7, Clg Layer-1 Analyst: Dave Cousino		Not Analyzed			
387841 02C BR 7, Clg Layer-2 Analyst: Dave Cousino	Drywall	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387842 03A Bsmt 10, Duct Analyst: Dave Cousino	Duct Wrap	White Fibrous Homogenous	60% Cellulose	20% Other	20% Chrysotile
387843 03B Bsmt 10, Boot Analyst: Dave Cousino		Not Analyzed			
387844 03C BR 2, Boot Analyst: Dave Cousino		Not Analyzed			

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
387845 04A Bsmt 10 Analyst: Dave Cousino	Chimney Cement	Grey/White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387846 04B Bsmt 10 Analyst: Dave Cousino	Chimney Cement	Grey/White Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
387847 04C Bsmt 10 Analyst: Dave Cousino	Chimney Cement	Grey/White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387848 05A LR 1, Clg Analyst: Dave Cousino	Textured Paint (on drywall)	White Non-Fibrous Homogenous	3% Cellulose	97% Other	None Detected
387849 05B LR 1, Clg Analyst: Dave Cousino	Textured Paint (on drywall)	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387850 06A KN 5 Analyst: Dave Cousino	6in Square Pattern Linoleum	Cream Fibrous Homogenous	15% Cellulose	85% Other	None Detected
387851 06B Bsmt Str 8 Analyst: Dave Cousino	6in Square Pattern Linoleum	Cream Fibrous Homogenous	15% Cellulose	85% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
387852 07A LR 1, Clg Analyst: Dave Cousino	Drywall	Grey Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387853 07B BR 2, S Wall Analyst: Dave Cousino	Drywall	Grey Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387854 08A LR 1, Clg Analyst: Dave Cousino	Seam Tape	White Fibrous Homogenous	90% Cellulose	10% Other	None Detected
387855 08B BR 2, S Wall Analyst: Dave Cousino	Seam Tape	White Fibrous Homogenous	95% Cellulose	5% Other	None Detected
387856 09A LR 1, Clg Analyst: Dave Cousino	Mud/Joint Compound	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387857 09B BR 2, S Wall Analyst: Dave Cousino	Mud/Joint Compound	White Non-Fibrous Homogenous	3% Cellulose	97% Other	None Detected
387858 10A BR 3, N Wall Analyst: Dave Cousino  (in wall cavity & above)	Loose Fiber Blown-In Insulation	Grey Fibrous Homogenous	2% Cellulose 90% Fiberglass	8% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
387859 10B Bsmt 10 Analyst: Dave Cousino  (in wall cavity & above)	Loose Fiber Blown-In Insulation	Grey Fibrous Homogenous	90% Fiberglass 3% Cellulose	7% Other	None Detected
387860 11A Underwood/Vinyl/Siding, N Analyst: Dave Cousino	House Wrap (under wood siding)	Brown Fibrous Homogenous	90% Cellulose	10% Other	None Detected
387861 11B Underwood/Vinyl/Siding, W Analyst: Dave Cousino	House Wrap (under wood siding)	Brown Fibrous Homogenous	95% Cellulose	5% Other	None Detected
387862 12A E Eave Analyst: Dave Cousino	Roof Shingle	Black Non-Fibrous Homogenous	2% Cellulose 5% Fiberglass	93% Other	None Detected
387863 12B W Eave Analyst: Dave Cousino	Roof Shingle	Black Non-Fibrous Homogenous	2% Cellulose 10% Fiberglass	88% Other	None Detected
387864 13A Enclosed Porch 6 Analyst: Dave Cousino	Window Glazing	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
387865 13B BR 2 Analyst: Dave Cousino	Window Glazing	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected



# Certificate of Analysis

Environmental Testing Laboratories, Inc.  
38900 Huron River Drive,  
Suite 200, Romulus, Michigan 48174,  
(734) 955-6600, Fax: (734) 955-6604

## Polarized Light Microscopy Asbestos Analysis Report

**To :** Environmental Testing And Consulting Inc.  
38900 Huron River Drive  
Romulus, MI 48174  
**Location :** Vacant Residence  
320 Wood St., Muskegon, MI

**ETC Job :** 177224  
**Client Project :** N/A  
**Date Collected :** 01/11/2016  
**Date Received :** 01/13/2016  
**Date Analyzed :** 01/19/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
--------	-------------	------------	-----------	---------------	------------

Lab Supervisor/Other Signatory

Analyst: Dave Cousino

400 Point Count Results by EPA 600/R-93/116 PLM (denoted by "PC")  
Item 198.1: PLM Methods for Identifying and Quantitating Asbestos in Bulk Samples  
Item 198.6: PLM Methods for Identifying and Quantitating Asbestos in Non-Friable Organically Bound Bulk Samples  
EPA 600/R-93/116: Method for Determination of Asbestos in Bulk Building Materials  
EPA 600/M4-82-020: Interim Method for Determination of Asbestos in Bulk Insulation Samples

ETL, Inc. maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced without written approval by ETL, Inc. Test Method EPA 600/R-93-116 & EPA 600/M4-82/020 or NYSDOH-ELAP item 198.1 and/or 198.6 was used to analyze all samples. Matrix interference and/or resolution limits (i.e. detecting asbestos in non-friable organically bound materials) may yield false results in certain circumstances. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing. Interpretation and use of test results are the responsibility of the client. ETL, Inc. is not responsible for the accuracy of the results when requested to physically separate and analyze layered samples. Any PLM results below 10% should be re-analyzed using the EPA recommended Point Count method. Any material that has greater than 1% asbestos content is considered to be an Asbestos Containing Material (ACM). These materials are regulated by both OSHA and the EPA and must be treated accordingly. Results are related to only to samples that were tested.



# Asbestos Material Sampling Summary Sheet

## Surfacing materials

Revision date 5/7/2015

Job #:	Building: 320 Wood St., Muskegon, MI			Date: 1-11-16			
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
01	Material: PLASTER	F	A	KITCHEN 5 ceiling	387834	2, 3, 4, 5, 7 900 SF	
	GRAY BASE Layer White Finish Layer		B	KITCHEN 5 EAST WALL	387835		
			C	BED 3 EAST WALL	387838		
			D	BATH 4 ceiling	387837		
			E	BED 7 CLOSET WALL	387838		
02	Material: PLASTER ON BOARD	F	A	BED 7 S WALL	387839	700 SF	
	PLASTER FINISH ON WALLBOARD BASE		B	BED 7 W WALL	387840		
			C	BED 7 ceiling	387841		
	Material:						

1000 SF = 3 samples

1000 - <5000 = 5 samples

**Asbestos Material Sampling Summary Sheet**  
**TSI (Thermal System Insulation) materials**

Revision date 5/7/2015

Job #:		Building:			Date:		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
Job #: <u>177224</u>		Building: 320 WOOD ST. MUSKEGON MI			Date: 01-11-15		
03	Material: DUCT WRAP	F	A	BASEMENT 10 DUCT 387842	2-15 8-10	30 SF	
	Description: WHITE		B	BASEMENT 10 BOOT 387843			
			C	BED 2 BOOT 387844			
04	Material: CHIMNEY CEMENT	NF	A	BASEMENT 10 387845	10	4 SF	
	Description: GRAY / WHITE		B	" " 387846			
			C	" " 387847			
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						

3 samples with the exception of patches less than 6 LF or 6 SF, then only 1 sample

**Asbestos Material Sampling Summary Sheet**  
Miscellaneous materials

Revision date 5/7/2015

Job #:		Building:			Date:		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
177224		320 WOOD ST. MUSKOGON			1-11-16		
05	Material: TEXTURE PAINT	F	A	LIVING 1 ceiling 387848	1, 2, 3	6000 SF	
	Description: ON DRYWALL		B	" 1 ceiling 387849			
06	Material: LINOLEUM	NF	A	KITCHENS 387850	5, 8	225 SF	
	Description: CREAM 6" SQ PATTERN		B	<del>KITCHENS</del> BSMT STAIR 387851			
07	Material: DRYWALL	F	A	LIVING 1 ceiling 387852	1, 2, 3, 4	3000 SF	
	Description: GRAY		B	BED 2 WALL SOUTH 387853			
08	Material: SEAM TAPE	F	A	LIVING 1 ceiling 387854	4	3000 SF	
	Description: WHITE		B	BED 2 SOUTH WALL 387855			
09	Material: MUD/JOINT COMPOUND	F	A	LIVING 1 ceiling 387856	5, 7, 8, 11	3000 SF	
	Description: white		B	BED 2 SOUTH WALL 387857			
10	Material: BLOWN IN LOOSE FIBER	F	A	BED 3 N WALL 387858	PERIODIC WALLS/HALL	2300 SF	
	Description: IN WALL CAVITY & ABOVE		B	BSMT 10 387859			
11	Material: HOUSE WRAP	F	A	UNDERWOOD/VINYL SIDING NORTH 387860	PERIODIC WEST	1400 SF	
	Description: UNDER WOOD SIDING		B	" " " " WEST 387861			
12	Material: ROOF SHINGLES	NF	A	EAST EAVE 387862	PERIODIC	2500 SF	
	Description: BLACK		B	WEST EAVE 387863			
13	Material: WINDOW GLAZING	F	A	ENCLOSED PORCH 6 387864	EXTERNAL	10 UNITS	
	Description: WHITE		B	BED 2 387865			
	Material:						
	Description:						

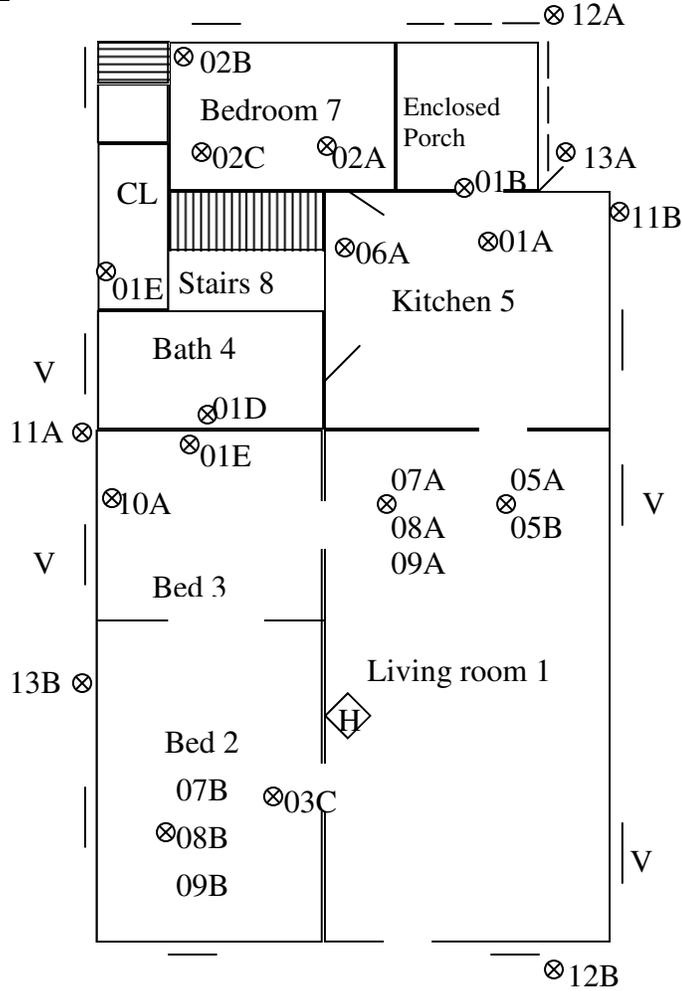
# **APPENDIX B**

## **SITE MAP**

1st floor

All Windows Wood unless noted

Exterior House 12

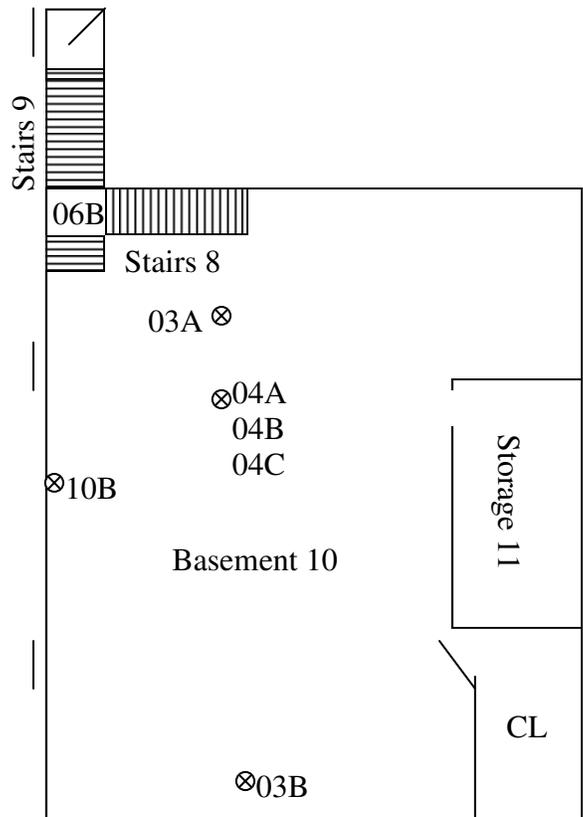


Please Note: This is a rough floor plan only. All items, (doorways, Windows, etc.) may not be included in this illustration. Also, room and component sizes are not drawn to scale.



Basement : All windows are wood

30 Wood St., Muskegon MI, 49441



Please Note: This is a rough floor plan only. All items, (doorways, Windows, etc.) may not be included in this illustration. Also, room and component sizes are not drawn to scale.



City of Muskegon  
177224

**APPENDIX C**

**PHOTOGRAPHS**



Front of house



Side B



Side C



Side D



Hazard: Smoke detector .

## **APPENDIX D**

# **STATE OF MICHIGAN NOTIFICATION OF INTENT TO REMOVE/DEMOLISH**

# NOTIFICATION OF INTENT TO RENOVATE/DEMOLISH



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
(MDEQ) AIR QUALITY DIVISION  
NESHAP, 40 CFR Part 61, Subpart M



MICHIGAN DEPARTMENT OF LICENSING AND  
REGULATORY AFFAIRS (LARA), ASBESTOS PROGRAM,  
P.A. 135 OF 1986, AS AMENDED, Section 220 (1-4) or (8)

**DEQ/LARA USE ONLY**

Postmark Date \_\_\_/\_\_\_/\_\_\_ Rec'd Date \_\_\_/\_\_\_/\_\_\_  
 Emergency Date \_\_\_/\_\_\_/\_\_\_ Valid No. \_\_\_\_\_  
 OK  Send Def Ltr. Date of Def Ltr. \_\_\_/\_\_\_/\_\_\_  
 FOLLOW UP \_\_\_/\_\_\_/\_\_\_ Spoke w/ \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Notification No. \_\_\_\_\_ Trans No. \_\_\_\_\_

**Calculate LARA Asbestos Project Fee:** (1% Project Fee)  
 Total Project Cost: \_\_\_\_\_ x 0.01 = \_\_\_\_\_  
 Type of Contractor: \_\_\_\_\_ License No.: \_\_\_\_\_  
 Licensing Authority: \_\_\_\_\_

**1. NOTIFICATION:**  
 Date of Notification: \_\_\_\_\_  
 Date of Revision(s): \_\_\_\_\_  
 Notification Type:  Original  Revised  Canceled  Annual  
**Mark appropriate boxes: (both DEQ and LARA may apply):**  
**DEQ (NESHAP) [260 In. ft./160 sq. ft. or more is threshold]**  
 Planned Renovation – 10 working days notice  
 Emergency Renovation  
 Scheduled Demolition – 10 working days notice  
 Intentional Burn – 10 working days notice  
 Ordered Demolition  
**LARA (MIOSHA) [Will not accept annual notifications]**  
 Demo, Reno, Encap. (>10 In. ft./15 sq. ft.) 10 calendar days notice  
 Emergency Renovation/Encapsulation

**2. PROJECT SCHEDULE:**

	START DATE	END DATE
* Renovation	_____	_____
+Asb. Removal	_____	_____
+Demolition:	_____	_____
Encapsulation:	_____	_____

**Work Schedule:** Please indicate the anticipated days of the week and work hours for the purpose of scheduling a compliance inspection.

	Days of the Week	Work Hours
Asb. Removal:	_____	_____
Demolition:	_____	_____
Encapsulation:	_____	_____

\* Includes setup, build enclosure, asbestos removal, demobilizing, etc.  
 +Include only those dates you are conducting asbestos removal/demo.  
 Check here if this is a multi-phased project, attach a schedule showing the start/end date of each phase.

**3. ABATEMENT CONTRACTOR:** Internal Project #: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_  
 E-mail: \_\_\_\_\_  
 Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

**4. DEMOLITION CONTRACTOR:** Internal Project #: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_  
 E-mail: \_\_\_\_\_  
 Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

**5. FACILITY OWNER:** ("Facility" includes Bridges)  
 Name: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_  
 E-mail: \_\_\_\_\_  
 Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

**6. FACILITY DESCRIPTION:**  
 Facility Name: \_\_\_\_\_  
 Location Address/Description: \_\_\_\_\_  
 \_\_\_\_\_ If Apt. # of units: \_\_\_\_\_  
 City/Twp. \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
 County: \_\_\_\_\_ Nearest Crossroad: \_\_\_\_\_  
 Size: (sq. ft.) \_\_\_\_\_ No. of Floors: \_\_\_\_\_ Floor No.: \_\_\_\_\_  
 Age: \_\_\_\_\_ Present Use: \_\_\_\_\_ Prior Use: \_\_\_\_\_  
 Specific Location(s) in Facility: \_\_\_\_\_

**7. DISPOSAL SITE:**  
 Name: \_\_\_\_\_  
 Location Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_

8. WASTE TRANSPORTER 1:	WASTE TRANSPORTER 2:
Name: _____	_____
Address: _____	_____
City/State/Zip: _____	_____
Phone: _____	_____

**9. ORDERED DEMOLITIONS:** (See NESHAP regulations for definition of "Ordered Demolition.") A copy of the official Order must accompany this notification.  
 Gov't Agency Ordering Demo: \_\_\_\_\_  
 Name/Title of Person Signing Order: \_\_\_\_\_  
 \_\_\_\_\_  
 Date of Order: \_\_\_\_\_ Date Ordered to Begin: \_\_\_\_\_

**10. IS ASBESTOS PRESENT?**  Yes  No  To be removed prior to demolition

**Estimate the amount of asbestos:** Include RACM (Regulated Asbestos Containing Material) to be removed, encapsulated, etc. Also include the amount and type (floor tile, roofing, etc.) of non-friable Category I and/or Category II ACM that will not be removed prior to demolition. (NOTE: In a demolition, cementitious ACM cannot remain in a structure, as it is likely to become regulated in the demolition/handling process. It must be removed prior to demolition.)

RACM to be Removed	RACM to be Encapsulated	Non-friable ACM <u>not</u> removed prior to demo.		Units of Measure	
		Category I	Category II		
_____	_____	_____	_____	<input type="checkbox"/> Ln. Ft.	<input type="checkbox"/> Ln. M.
_____	_____	_____	_____	<input type="checkbox"/> Sq. Ft.	<input type="checkbox"/> Sq. M.
_____	_____	_____	_____	<input type="checkbox"/> Cu. Ft.*	<input type="checkbox"/> Cu.M.*

\*Volume (cubic ft./meters) should be used only if unable to measure by linear/square measure (example: asbestos has fallen off of surface).

**NOTIFICATION OF INTENT TO RENOVATE/DEMOLISH (continued)**

**11. PROJECT DESCRIPTION: Complete A) for Renovation (asbestos removal/encapsulation) and/or B) for Demolition:**

**A) RENOVATION: Mark all surfaces/types of RACM to be removed:**

- Piping     Fittings     Boiler(s)     Tanks(s)  
 Beam(s)     Duct(s)     Tunnel(s)     Ceiling Tile(s)  
 Mag Block     Other (describe) \_\_\_\_\_

**Encapsulation (for LARA): Mark surfaces/types to be encapsulated:**

- Piping     Fittings     Boiler(s)     Tank(s)  
 Beam(s)     Duct(s)     Tunnel(s)     Ceiling Tile(s)  
 Other (describe) \_\_\_\_\_

**Method of removal:** Describe how the asbestos will be removed from the surface (example: glove bag, scrape with hand tools, cut in sections and carefully lower, etc.): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**B) DEMOLITION:** Describe the method of demolition of facility, bridge, etc., and indicate if complete or partial. If partial, describe which part of facility bridge, etc., will be demolished: \_\_\_\_\_  
 \_\_\_\_\_

**12. ENGINEERING CONTROLS:** Describe work practices and engineering controls used to prevent visible emissions before, during, and after removal, and until proper disposal: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**13. UNEXPECTED ASBESTOS:** Describe the steps you intend to follow in the event that unexpected RACM is found or previously non-friable asbestos becomes friable (crumbled, pulverized, reduced to powder, etc.) and therefore regulated: \_\_\_\_\_  
 \_\_\_\_\_

**14. PROCEDURE(S) USED TO DETECT THE PRESENCE OF ASBESTOS: A)** Indicate how you determined whether or not asbestos is in the facility. If analytical sampling was used, describe method of analysis. (The determination of the presence or absence of asbestos must be made prior to submitting a renovation/demolition notification.): \_\_\_\_\_  
 \_\_\_\_\_

**B)** Name, address, and phone number of company performing asbestos survey: \_\_\_\_\_

**C)** Name, accreditation number of inspector, and date of inspection: \_\_\_\_\_

**15. EMERGENCY RENOVATIONS:** Date/time of emergency: \_\_\_\_\_ Describe the sudden, unexpected event: \_\_\_\_\_  
 \_\_\_\_\_

Explain how the event caused unsafe conditions, and/or would cause equipment damage and/or an unreasonable financial burden: \_\_\_\_\_  
 \_\_\_\_\_

**16.** I certify that an individual trained in the provisions of 40 CFR Part 61, Subpart M, will be on-site during the renovation and during demolition involving RACM above the threshold and/or during an ordered demolition. Evidence that this person has completed the required training will be available for inspection at the renovation or demolition site.

\_\_\_\_\_  
*Signature of Owner or Abatement Contractor      Date*

\_\_\_\_\_  
*Signature of Owner or Demolition Contractor      Date*

**17. Signature Requirements for Projects with Negative Pressure Enclosures: (required by LARA)**  
 Per Section 221(1)(2) of P.A. 135 of 1986, as amended, clearance air monitoring is required for any asbestos abatement project involving 10 linear feet/15 square feet or more of friable material which is performed within a negative pressure enclosure. *I (the building owner or lessee) have been advised by the contractor of my responsibility under Act 135 to have clearance air monitoring performed on this project.*

\_\_\_\_\_  
*Signature of Building Owner or Lessee      Date*

\_\_\_\_\_  
*Signature of Asbestos Abatement Contractor Representative      Date*

**NOTE:** It is not mandatory that a signed copy be sent to LARA unless requested. For affected projects, this section of the notification form must be completed, signed, and made part of your records before the project begins.

**18. I certify that the above information is correct:**

\_\_\_\_\_  
*Printed Name of Owner/Operator      Date*

\_\_\_\_\_  
*Signature of Owner/Operator      Date*

**MAILING ADDRESSES/PHONE NUMBERS:** (See Item 1 to determine which agency requirements/regulations are applicable to your project.)

For **Public Act 135 of 1986, as amended, Section 220 (1-4) or (8)**, mail to address below. For more info visit: <http://www.michigan.gov/asbestos>

MIOSHA Asbestos Program  
 LARA, CSHD  
 P.O. Box 30671  
 Lansing, MI 48909-8171

517.636.4551 (office), 517.322.1713 (fax)

For **NESHAP Demolitions/Renovations, 40 CFR, Part 61, Subpart M**, mail notifications to the appropriate address below (by county of subject facility): For more info visit <http://www.michigan.gov/deq> click on Air, then Asbestos NESHAP Program.

**All Counties (except Wayne County)**

NESHAP Asbestos Program  
 DEQ, AQD  
 P.O. Box 30260  
 Lansing, MI 48909-7760

517.241.7463 (Office)  
 517.373.7064 (Revision Line)

**Wayne County Only**

NESHAP Asbestos Program  
 Detroit Field Office, DEQ, AQD  
 Cadillac Place, Suite 2-300  
 3058 West Grand Boulevard  
 Detroit, MI 48202

313.456.4686 (Office)  
 313.456.2558 (Revision Line)