



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

318 W Larch Ave.  
Muskegon, MI 49441

**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 15th, 2016

ETC Job #: 177227

# TABLE OF CONTENTS

- 1) Introduction
- 2) Information about Asbestos Inspections
  - a) Sampling Procedures
  - b) PLM Analysis Methodology
  - c) Interpretation of Inspection Results
  - d) Other Hazardous Materials
- 3) Regulatory Requirements
  - a) MIOSHA Construction Asbestos Requirements
  - b) NESHAPs Requirements
  - c) Notification Requirements
  - d) Abatement Requirements
- 4) Summary and Conclusions
  - Chart A – Materials Sampled and Asbestos Content
  - Chart B – Other Hazardous Materials Located
- 5) Inspector's Information/Certification

## **Appendices**

*Appendix A - Polarized Light Microscopy Asbestos Analysis Results*

*Appendix B – Site Map*

*Appendix C - Photographs*

*Appendix D - State of Michigan Notification of Intent to Renovate or Demolish*

## 1. Introduction

The City of Muskegon contracted ETC - Environmental Services (ETC) to perform a renovation / demolition inspection of the building located at 318 W Larch Ave., Muskegon, MI 49441. This inspection was conducted on January 15th, 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 Stuart Yankee, conducted the ACBM inspection and identified materials suspected of containing asbestos. Aaron Yankee and Stuart 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, white base layer. White skim coat(Textured)	No	8 SF	Living Rm 1
2	Drywall, white	No	900 SF	Rooms 1,4,5,6
3	Seam tape. White/Cream.	No	900 SF	Rooms 1,4,5,6
4	Drywall mud, joint compound.	No	900 SF	Rooms 1,4,5,6
5	Linoleum, yellow/green w/ black paper back.	No	30 SF	Room 3
6	Linoleum, wood grain w/ white paper back.	No	150 SF	Room 1
7	Linoleum, beige. Under mat #6.	No	150 SF	Room 1
8	Tar Paper , black	No	200 SF	Room 4
9	Blown in insulation, white, fluffy. About 6" thick.	No	300 SF	Room 1,2,7
<b>10</b>	<b>Window glazing, white.</b>	<b>Yes</b>	<b>12 Units</b>	<b>Ext. Windows</b>
11	House wrap. Brown paper.	No	1350 SF	Exterior
12	Roof Shingles. Black	No	1800 SF	Exterior

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

Material #	Material Description	Quantity	Location
1	Joint compound.	5 gallons	#5, SW Basement.
2	Paint Cans.	5 gallons	#5, SW Basement.

**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:



---

Aaron Yankee and Stuart 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

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

Project Location : Vacant Residence  
318 W. Larch, Muskegon, MI

Attention : Samantha Ferguson

Client Project : N/A

ETC Job : 177227

Report Date : 1/20/2016

Login #	Sample ID	Work Requested	Completed
388569	01A	Asbestos Analysis	01/20/2016
388570	01B	Asbestos Analysis	01/20/2016
388571	01C	Asbestos Analysis	01/20/2016
388572	02A	Asbestos Analysis	01/20/2016
388573	02B	Asbestos Analysis	01/20/2016
388574	03A	Asbestos Analysis	01/20/2016
388575	03B	Asbestos Analysis	01/20/2016
388576	04A	Asbestos Analysis	01/20/2016
388577	04B	Asbestos Analysis	01/20/2016
388578	05A	Asbestos Analysis	01/20/2016
388579	05B	Asbestos Analysis	01/20/2016
388580	06A	Asbestos Analysis	01/20/2016
388581	06B	Asbestos Analysis	01/20/2016
388582	07A	Asbestos Analysis	01/20/2016
388583	07B	Asbestos Analysis	01/20/2016
388584	08A	Asbestos Analysis	01/20/2016
388585	08B	Asbestos Analysis	01/20/2016
388586	09A	Asbestos Analysis	01/20/2016
388587	09B	Asbestos Analysis	01/20/2016
388588	10A	Asbestos Analysis	01/20/2016

This report is intended for use solely by the individual or entity to which it is addressed. This report may not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. It may contain information that is privileged, confidential and otherwise exempt by law from disclosure. If the reader of this information is not the intended recipient or an employee of its intended recipient, you are herewith notified that any dissemination, distribution or copying of this information is strictly prohibited. If you have received this information in error, please notify ETL immediately. Thank you.

---

Login #	Sample ID	Work Requested	Completed
388589	10B	Asbestos Analysis	01/20/2016
388590	11A	Asbestos Analysis	01/20/2016
388591	11B	Asbestos Analysis	01/20/2016
388592	12A	Asbestos Analysis	01/20/2016
388593	12B	Asbestos Analysis	01/20/2016

---

Reviewed by:



---

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  
 318 W. Larch, Muskegon, MI

**ETC Job :** 177227  
**Client Project :** N/A  
**Date Collected :** 01/15/2016  
**Date Received :** 01/19/2016  
**Date Analyzed :** 01/20/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
388569 01A LR Ceiling-SE Layer-1 Analyst: Ian McCusker	Plaster	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
388569 01A LR Ceiling-SE Layer-2 Analyst: Ian McCusker	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
388570 01B LR Ceiling-SE Layer-1 Analyst: Ian McCusker	Plaster	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
388570 01B LR Ceiling-SE Layer-2 Analyst: Ian McCusker	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
388571 01C LR Ceiling-SE Layer-1 Analyst: Ian McCusker	Plaster	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
388571 01C LR Ceiling-SE Layer-2 Analyst: Ian McCusker	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
388572 02A Bsm 4 Analyst: Ian McCusker	Drywall	White Non-Fibrous Homogenous		100% Other	None Detected
388573 02B LR 1 Analyst: Ian McCusker	Drywall	White Non-Fibrous Homogenous		100% Other	None Detected

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.

**Polarized Light Microscopy Asbestos Analysis Report**

**To :** Environmental Testing And Consulting Inc.  
 38900 Huron River Drive  
 Romulus, MI 48174  
**Location :** Vacant Residence  
 318 W. Larch, Muskegon, MI

**ETC Job :** 177227  
**Client Project :** N/A  
**Date Collected :** 01/15/2016  
**Date Received :** 01/19/2016  
**Date Analyzed :** 01/20/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
388574 03A Bsmt 4 Analyst: Ian McCusker	Seam Tape	White/Cream Fibrous Homogenous	70% Cellulose	30% Other	None Detected
388575 03B LR 1 Analyst: Ian McCusker	Seam Tape	White/Cream Fibrous Homogenous	70% Cellulose	30% Other	None Detected
388576 04A Bsmt 4 Analyst: Ian McCusker	Drywall Mud/Joint Compound	White Non-Fibrous Homogenous		100% Other	None Detected
388577 04B LR 1 Analyst: Ian McCusker	Drywall Mud/Joint Compound	White Non-Fibrous Homogenous		100% Other	None Detected
388578 05A Stairs 3 Analyst: Ian McCusker	Linoleum	Yellow/Green Fibrous Homogenous	60% Cellulose	40% Other	None Detected
388579 05B Stairs 3 Analyst: Ian McCusker	Linoleum	Yellow/Green Fibrous Homogenous	60% Cellulose	40% Other	None Detected
388580 06A LR 1-NE Analyst: Ian McCusker	Wood Grain Pattern Linoleum	White Fibrous Homogenous	30% Cellulose	70% Other	None Detected

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.

## Polarized Light Microscopy Asbestos Analysis Report

**To :** Environmental Testing And Consulting Inc.  
 38900 Huron River Drive  
 Romulus, MI 48174  
**Location :** Vacant Residence  
 318 W. Larch, Muskegon, MI

**ETC Job :** 177227  
**Client Project :** N/A  
**Date Collected :** 01/15/2016  
**Date Received :** 01/19/2016  
**Date Analyzed :** 01/20/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
388581 06B LR 1-NE Analyst: Ian McCusker	Wood Grain Pattern Linoleum	White Fibrous Homogenous	30% Cellulose	70% Other	None Detected
388582 07A LR 1-NE Analyst: Ian McCusker	Linoleum Under Mat. 06	Beige Fibrous Homogenous	70% Cellulose	30% Other	None Detected
388583 07B LR 1-NE Analyst: Ian McCusker	Linoleum Under Mat. 06	Beige Fibrous Homogenous	70% Cellulose	30% Other	None Detected
388584 08A Bsmt 4-NW Analyst: Ian McCusker	Tar Paper	Black Fibrous Homogenous	80% Cellulose	20% Other	None Detected
388585 08B Bsmt 4-NW Analyst: Ian McCusker	Tar Paper	Black Fibrous Homogenous	80% Cellulose	20% Other	None Detected
388586 09A Ext Front Porch 7 Analyst: Ian McCusker	6in Thick Blown-In-Insulation	White Fibrous Homogenous	100% Fiberglass		None Detected
388587 09B LR 1-N Analyst: Ian McCusker	6in Thick Blown-In-Insulation	White Fibrous Homogenous	100% Fiberglass		None Detected

## Polarized Light Microscopy Asbestos Analysis Report

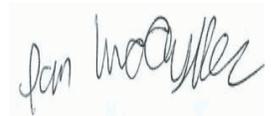
**To :** Environmental Testing And Consulting Inc.  
 38900 Huron River Drive  
 Romulus, MI 48174  
**Location :** Vacant Residence  
 318 W. Larch, Muskegon, MI

**ETC Job :** 177227  
**Client Project :** N/A  
**Date Collected :** 01/15/2016  
**Date Received :** 01/19/2016  
**Date Analyzed :** 01/20/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
388588 10A Ext N Bsmt Window Analyst: Ian McCusker	Window Glazing	White Non-Fibrous Homogenous		97% Other	3% Chrysotile
388589 10B Ext SW Window Analyst: Ian McCusker		Not Analyzed			
388590 11A Ext Under Siding-E Analyst: Ian McCusker	Paper House Wrap	Brown Fibrous Homogenous	80% Cellulose	20% Other	None Detected
388591 11B Ext Under Siding-E Analyst: Ian McCusker	Paper House Wrap	Brown Fibrous Homogenous	80% Cellulose	20% Other	None Detected
388592 12A NE Crrr-Roof Analyst: Ian McCusker	Roof Shingles	Black Non-Fibrous Homogenous		100% Other	None Detected
388593 12B NE Crrr-Roof Analyst: Ian McCusker	Roof Shingles	Black Non-Fibrous Homogenous		100% Other	None Detected



Lab Supervisor/Other Signatory



Analyst: Ian McCusker



# 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

318 W. Larch, Muskegon, MI

ETC Job : 177227

Client Project : N/A

Date Collected : 01/15/2016

Date Received : 01/19/2016

Date Analyzed : 01/20/2016

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

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.

**ENVIRONMENTAL TESTING LABORATORIES, INC**

38900 Huron River Drive  
 Romulus, Michigan 48174  
 (734) 955-6600  
 Fax: (734) 992-2261  
[www.2etl.com](http://www.2etl.com)

**Bulk Asbestos  
 Chain of Custody**

ETL Project #:

AARON YANKLEE

Client: <b>ETC</b>	Contact: <b>STU YANKLEE</b>	Project Location/name: <b>MUSKEGON BLIGHT</b>
Address: <b>Romulus</b>	Phone:	<b>318 W. LARCH</b>
	Fax:	<b>MUSKEGON MICHIGAN</b>
	E-mail:	Client Project #: <b>177227</b>
Please Provide Results: <input type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> Verbal <input type="checkbox"/> Other _____		Date Sampled:

Turnaround Time (TAT):  RUSH  Same Day  24 hr  48 hr  Standard (3+ days)  Other \_\_\_\_\_

**PLM Instructions**  
 (Check all that apply)

<input type="checkbox"/> PLM EPA600/R-93/116, 1993 (Standard method)	<input type="checkbox"/> Stop at 1st Positive - Clearly mark Homogenous Group
<input type="checkbox"/> Point Counting: 400 Points*	
<input type="checkbox"/> PLM Non-Building Material (Dust, Wipe, Tape)	<input type="checkbox"/> Soil or Vermiculite Analysis *

\* Additional charge and turnaround may be required

Lab ID	Sample ID	Sample Location	Material Description
388569	01A-01C	see sample SUMMARY sheets	
↓	02A-12B		
388593			

	Name/Signature	Date	Time
Relinquished (Name/Organization):	STUART YANKLEE/ETC	1-18-15	am/pm
Received (Name/ETL):	l.m. d.p.	1/19/16	am/pm
Stereoscopical Analysis (Name/ETL):	l.m.	1-19-16	am/pm
Sample Login (Name/ETL):	d.p.	1/19/16	am/pm
Analysis (Name/ETL):	l.m.	1-19-16	am/pm
QA/QC Review (Name/ETL):			am/pm

Special Instructions:	Remarks
-----------------------	---------



**Asbestos Material Sampling Summary Sheet**  
Miscellaneous materials

Revision date 5/7/2015

Job #: 177227		Building: 318 W. LARCH MUSKEGON				Date: 1-15-16		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #	
02	Material: DRYWALL	F	A	BASEMENT 4	1,4,5,6	900 SF		
	Description: white		B	LIVING 1				
03	Material: SEAM TAPE	F	A	BASEMENT 4	1,4,5,6	900 SF		
	Description: WHITE / CREAM		B	LIVING 1				
04	Material: DRYWALL	F	A	BASEMENT 4	1,4,5,6	900 SF		
	Description: MUD / JOINT COMPOUND		B	LIVING 1				
05	Material: LINOLEUM	F	A	STAIRS 3	3	30 SF		
	Description: yellow/green BLK PAPER BACK		B	STAIRS 3				
06	Material: LINOLEUM	F	A	LIVING 1 - NE	388580	150 SF		
	Description: WOOD GRAIN w/WHITE PAPER BACK		B	LIVING 1 - NE				
07	Material: LINOLEUM	F	A	LIVING 1 - NE	388582	150 SF		
	Description: BEIGE UNDER MAT NO 6		B	LIVING 1 - NE				
08	Material: TAR PAPER	NF	A	BASEMENT 4 - NW	388584	200 SF		
	Description: BLACK		B	BASEMENT 4 - NW				
09	Material: BLOWN IN INSULATION	F	A	EXT FRONT PORCH 7 -	1,2,7	300 SF	388586	
	Description: WHITE FLUFFY ~ 6" THK		B	LIVING 1 - North				
10	Material: WINDOW GLAZING	F	A	EXT N BSMT WINDOW	EXT. WINDOWS	10 UNITS	388588	
	Description: WHITE		B	EXT SE WINDOW				
11	Material: HOUSE WRAP	F	A	EXT UNDER SIDING - EAST	EXT	1350 SF	388590	
	Description: BROWN PAPER		B	" " " "				

✓/HA  
12 next page

**Asbestos Material Sampling Summary Sheet**  
**Miscellaneous materials**

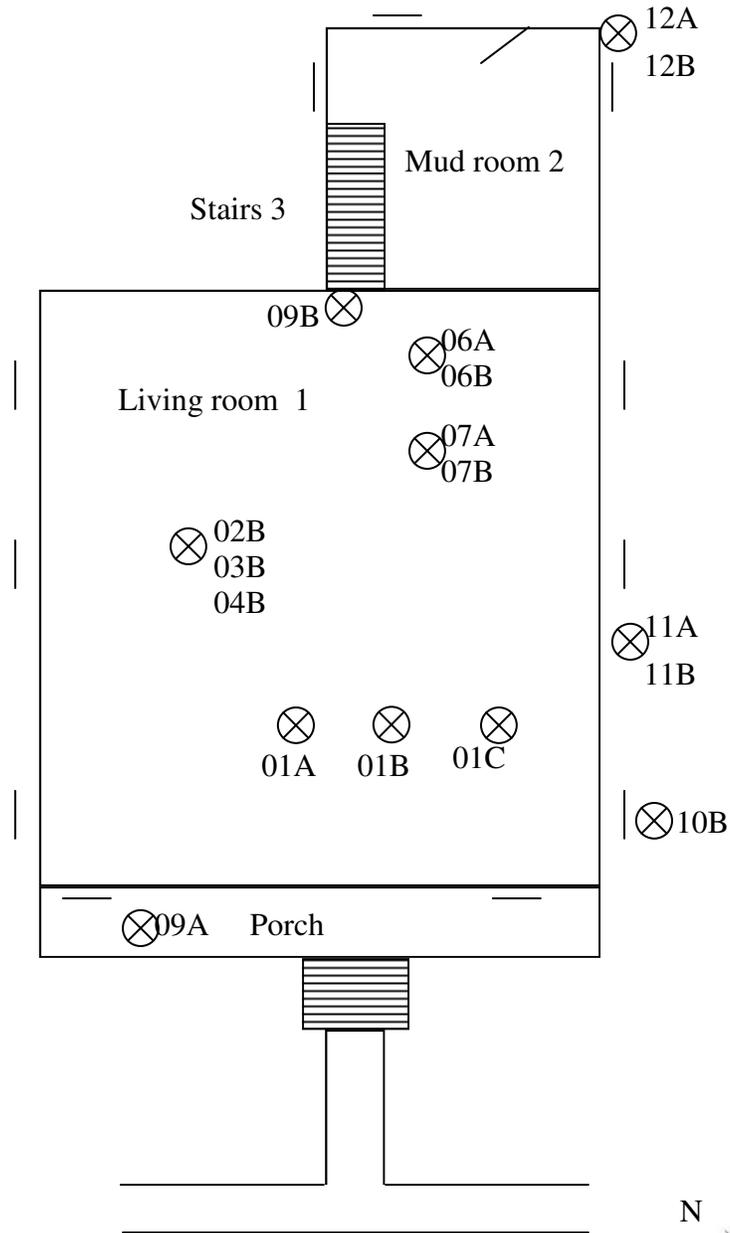
Revision date 5/7/2015

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 #
177227		318, W. LARCH MUSKEGON			1-15-16		
12	Material: ROOF SHINGLES	NF	A	NE corner - ROOF	EXT	1300	388592
	Description: BLACK		B	" " - ROOF			
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						

# **APPENDIX B**

## **SITE MAP**

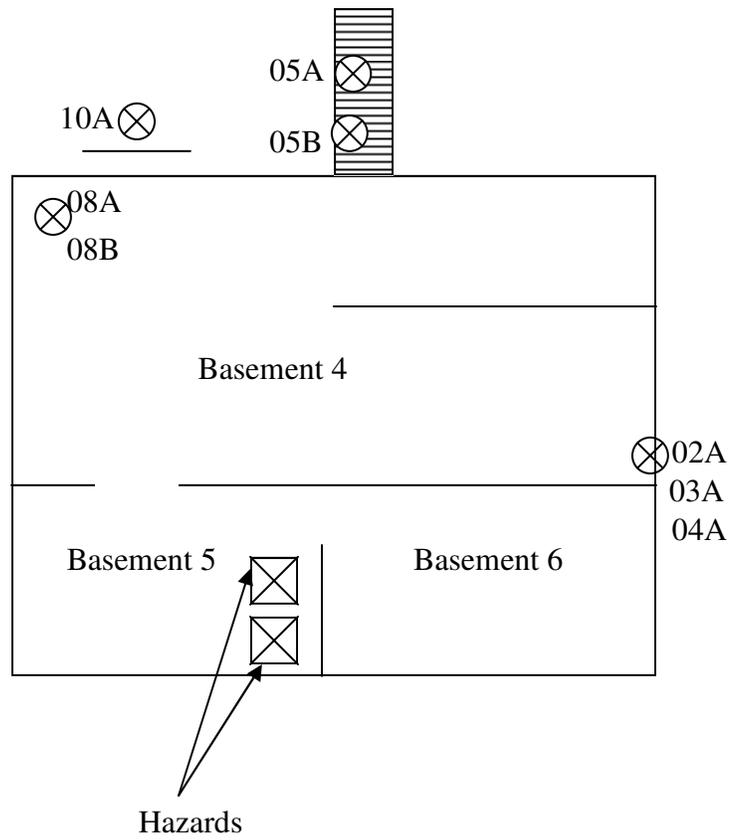
First Floor  
Ext. House 7



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



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.



**APPENDIX C**

**PHOTOGRAPHS**



Front of House



Side B



Side C



Side D



5 Gallon plaster/paint hazard's.

## **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).

(continued on reverse side)

**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)