



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

1221 Sanford
Muskegon, MI 49441

Prepared for:

City of Muskegon
933 Terrace St- Room 202
Muskegon, MI 49440
(231) 724-6760

Prepared By:

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

February 16, 2016

ETC Job #: 177231

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 1221 Sanford , Muskegon, MI 49441. This inspection was conducted on February 16, 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, conducted the ACBM inspection and identified materials suspected of containing asbestos. Aaron Yankee's State of Michigan Asbestos Building Inspector's certification number is A-42490.

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 in the client's 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.

Chart A – Materials Sampled and Asbestos Content

Material #	Material Description	Asbestos	Quantity	Location (Refer to map in Appendix B)
1	Plaster	No	6000 SF	Throughout
2	Drywall, White	No	2000 SF	Rm's 3, 4, 5, 9, 10,11,12,13
3	Tape, White	No	2000 SF	Rm's 3, 4, 5, 9, 10,11,12,13
4	Mud, joint compound/ White	No	2000 SF	Rm's 3, 4, 5, 9, 10,11,12,13
5	Window glazing, white	No	17 Units	Exterior
6	Linoleum, wood grain dk	No	120 SF	Rm 2
7	Linoleum LT wood grain	No	15 SF	Rm's 6, 10
8	Linoleum, green pattern	No	200 SF	Rm's 1, 2, 4, 5
9	Linoleum, tan w/green-yellow	No	200 SF	Rm's 1, 2, 4, 5
10	Linoleum, beige	No	150 SF	Rm's 10, 11
11	Linoleum, beige, chain weave	No	100 SF	Rm 12
12	Linoleum, yellow, green, black paper	No	100 SF	Rm 12
13	Linoleum, beige, orange	No	100 SF	Rm 12
14	Linoleum, black, beige swirl	No	150 SF	Rm 13
15	Floor paper, black	No	150 SF	Rm 13
16	Linoleum, green	No	150 SF	Rm 13
17	Linoleum, beige/brown pattern	No	150 SF	Rm 13
18	Floor paper, brown, black	No	40 SF	Rm 15
19	Linoleum, beige, cream	No	80 SF	Rm 18
20	Linoleum, green streaks	No	80 SF	Rm 18
21	Linoleum, gray	No	180 SF	Rm 19

22	Linoleum, yellow	No	180 SF	Rm 19
23	Linoleum, green pattern	No	180 SF	Rm 19
24	Linoleum , Brown	No	180 SF	Rm 19
25	Linoleum , Beige	No	180 SF	Rm 20
26	Ceiling Tile, white 2x4 Foot	No	40 SF	Rm 15
27	Roof Material, Black/Brown Shingle	No	1,500 SF	Ext
28	Siding, green, black, shingle Fiber Backed.	No	1,500 SF	Ext

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

Material #	Material Description	Quantity	Location
1	Air conditioners, refrigerators, stove, ovens	6	Rooms 2, 19, 9, 11
2	Electronics	4	Room 2
3	Light ballasts	4	Room 19, 9
4	Misc. items (glue, solvents, cleaners, etc.)	4	Room 3
5	Paint cans	3	Rooms 3, 9
6	Smoke detectors	3	Rooms 3, 20
7	Florescent light bulbs	8	Room 19, 9
8	Gas heaters	3	Rooms 16, 19, 11
9	Electric heater	1	Room 9

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
State of Michigan Certified Asbestos Building Inspector
State of Michigan Card #: A-42490

APPENDICES

APPENDIX A

POLARIZED LIGHT MICROSCOPY ASBESTOS ANALYSIS RESULT FORMS



ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

METHOD:

All analyses and quantifications are performed in accordance with the U.S. Environmental Protection Agency's "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116 & EPA/600/M4-82/020: "Interim Method for the Determination of Asbestos in Bulk Insulation Samples." ACM Engineering & Environmental Services is accredited by the National Voluntary Accreditation Program (NVLAP) for the scope of accreditation under NVLAP code 101977-0. These methods utilize stereoscopic examination of bulk samples, as well as utilizing the polarized light microscope (PLM). To determine the refractive index, the central stop dispersion staining method is used, as well as matching with refractive index oil and using light matching the sodium D line wavelength. Identification of non-asbestos species is less rigorous, as they are of secondary interest.

Gross samples are examined under a 10X or 20X stereoscope where homogeneity (need for sub-samples), texture and /or any other distinguishing characteristics are determined. Sub-samples are prepared if needed. Any fibrous material is mounted in high dispersion oil for further microscope examination utilizing PLM. Any possible asbestos fibers are analyzed for morphology, color and pleochroism, index of refraction parallel and perpendicular to elongation, birefringence, extinction characteristic and sign of elongation, and any other distinguishing characteristics observed.

The percentage of asbestos and other fibrous materials are then determined according to sample area coverage and thickness. The limit of qualification is one percent (1%). The above is recorded on the laboratory analysis sheet and maintained for three years. The error involved for reported percentages of fibrous is 100% error for 1% to 5%, 50% error for 5% to 20%, and 25% error for 20% to 100%. All percentages will be reported in a range indicating error or a single value, in which case the above error should be applied. When the value 1% or greater is reported this indicates asbestos is present in the sample.

THE REPORT:

The attached report quantifies the fibrous materials found in each sample submitted for analysis. A complete fibrous analysis of samples is given for each sample followed by a breakdown analysis of any sub-samples for heterogeneous material.

- *The first column* is the client sample number identification.
- *The second column* is the laboratory sample number. The laboratory number for the overall sample analysis is a digit number. The laboratory number followed by a letter designation (A,B,C, etc.) indicates a sub-sample analysis.
- *The third column* is the sample identification, which indicates whether the sample is homogeneous or heterogeneous, the color of the sample, and the physical description (cementitious, fibrous, cloth, etc.)
- *The fourth column* indicates the types and percentages of asbestos identified if any.
- *The fifth column* indicates the types and percentages of cellulose (CELL) non-asbestos identified.
- *The sixth column* indicates the types and percentages of non-fibrous, non-asbestos material (NON -FIB NON-ACBM) identified.
- *The seventh column* indicates the types and percentages of fibrous non-asbestos material (FIB NON ACBM) in the sample or sub-sample.

SAMPLE RETENTION:

Samples will be retained for 6 months unless otherwise instructed. After this period, the sample(s) will be disposed of appropriately. Upon written request, the samples will be returned by mail or delivery for a nominal fee to cover postage and handling. There would be no charge for samples picked-up at ACM Engineering & Environmental Services.

DISCUSSION AND RECOMMENDATIONS:

In order to reduce the risk of introducing asbestos fibers into the air, care should be taken not to disturb the asbestos containing building materials. If renovation, demolition or other activities might disturb known asbestos containing building materials, a reputable asbestos consultant should be contacted to help effectively design and implement an asbestos management program.

COMPONENTS DESCRIPTION:

ASBESTOS MATERIALS

NON-ASBESTOS MATERIALS

A	= Amosite	CF	= Ceramic Fibers	N	= Nylon
AC	= Actinolite	CO	= Cotton	O	= Other
AN	= Anthophyllite	G	= Fibrous Glass	S	= Synthetics
C	= Chrysotile	H	= Hair	V	= Vermiculite
CR	= Crocidolite	M	= Mineral Wool		
T	= Tremolite				
----	= No Asbestos Detected				

NOTE: ACM Engineering & Environmental Services does not deviate from the test method described in this report. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items above. This report must not be reproduced, except in full, without the written consent of ACM Engineering & Environmental Services.



CLIENT: Environmental Testing & Consulting
38900 W. Huron River Drive
Romulus, MI 48174

ANALYSIS METHODS: EPA/600/R-93-116 &
EPA/600/M4-82-020

NVLAP LAB ID #: 101977-0

MATRIX: Bulk

LOCATION: Reference # 177231
Muskegon Blight
1221 Sanford St.
Muskegon, MI

Sample Date: 02/16/16

Analysis Date: 02/18/16

ACM PROJECT #: ETC16002

Table with 7 columns: CLIENT SAMPLE #, LAB SAMPLE #, SAMPLE IDENTIFICATION, ASBEST, CELL, NON FIB NON ACBM, FIB NON ACBM. Rows include samples 01A-01G, 02A-02B, 03A-03B, 04A-04B, 05A-05B, 06A-06B, 07A-07B, 08A-08B, 09A-09B, 10A-10B, 11A-11B, and 12A.

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist:

Jamy Malave

Title: LAB DIRECTOR

Date: 2/18/16

**ACM ENGINEERING & ENVIRONMENTAL SERVICES**

WWW.ACMENV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Environmental Testing & Consulting
38900 W. Huron River Drive
Romulus, MI 48174

ANALYSIS METHODS: EPA/600/R-93-116 &
EPA/600/M4-82-020
NVLAP LAB ID #: 101977-0
MATRIX: Bulk

LOCATION: Reference # 177231
Muskegon Blight
1221 Sanford St.
Muskegon, MI

Sample Date: 02/16/16
Analysis Date: 02/18/16
ACM PROJECT #: ETC16002

CLIENT SAMPLE #	LAB SAMPLE #	SAMPLE IDENTIFICATION	ASBEST	CELL	NON FIB NON ACBM	FIB NON ACBM
12B	E600091	LINOLEUM	----	60%	40%	----
13A	E600092	LINOLEUM	----	63%	37%	----
13B	E600093	LINOLEUM	----	63%	37%	----
14A	E600094	LINOLEUM	----	63%	37%	----
14B	E600095	LINOLEUM	----	63%	37%	----
15A	E600096	FLOOR PAPER	----	84%	16%	----
15B	E600097	FLOOR PAPER	----	84%	16%	----
16A	E600098	LINOLEUM	----	61%	39%	----
16B	E600099	LINOLEUM	----	61%	39%	----
17A	E600100	LINOLEUM	----	60%	40%	----
17B	E600101	LINOLEUM	----	60%	40%	----
18A	E600102	FLOOR PAPER	----	62%	38%	----
18B	E600103	FLOOR PAPER	----	62%	38%	----
19A	E600104	LINOLEUM	----	61%	39%	----
19B	E600105	LINOLEUM	----	61%	39%	----
20A	E600106	LINOLEUM	----	64%	36%	----
20B	E600107	LINOLEUM	----	64%	36%	----
21A	E600108	LINOLEUM	----	52%	31%	17% G
21B	E600109	LINOLEUM	----	52%	31%	17% G
22A	E600110	LINOLEUM	----	52%	31%	17% G
22B	E600111	LINOLEUM	----	52%	31%	17% G
23A	E600112	LINOLEUM	----	61%	39%	----
23B	E600113	LINOLEUM	----	61%	39%	----
24A	E600114	LINOLEUM	----	58%	42%	----
24B	E600115	LINOLEUM	----	58%	42%	----
25A	E600116	LINOLEUM	----	58%	42%	----
25B	E600117	LINOLEUM	----	58%	42%	----
26A	E600118	CEILING TILE	----	49%	----	51% G

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist:

*Jamie Malave*Title: LAB DIRECTORDate: 2/18/16

Revision 2 2/10/14

**ACM ENGINEERING & ENVIRONMENTAL SERVICES**

WWW.ACMENV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Environmental Testing & Consulting
38900 W. Huron River Drive
Romulus, MI 48174

ANALYSIS METHODS: EPA/600/R-93-116 &
EPA/600/M4-82-020

NVLAP LAB ID #: 101977-0

MATRIX: Bulk

LOCATION: Reference # 177231
Muskegon Blight
1221 Sanford St.
Muskegon, MI

Sample Date: 02/16/16

Analysis Date: 02/18/16

ACM PROJECT #: ETC16002

CLIENT SAMPLE #	LAB SAMPLE #	SAMPLE IDENTIFICATION	ASBEST	CELL	NON FIB NON ACM	FIB NON ACM
26B	E600119	CEILING TILE	----	49%	----	51% G
27A	E600120	ROOF MATERIAL	----	53%	30%	17% G
27B	E600121	ROOF MATERIAL	----	53%	30%	17% G
28A	E600122	SIDING	----	73%	27%	----
28B	E600123	SIDING	----	73%	27%	----

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist:

Title: LAB DIRECTOR

Date: 2/18/16

Revision 2 2/10/14

Asbestos Material Sampling Summary Sheet
Miscellaneous materials

Revision date 5/7/2015

Job #:	177231		Building:	1221 Sanford St.		Date:	2-16-16	
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 Description: white	F	A B	LIVINGS 3 BED A	394998 394949	3,4,5,9 10,11,12,13	450 2,000 SF	
03	Material: TAPE Description: white	F	A B	LIVINGS 3 BED A	394950 394951			
04	Material: MIP / JOINT COMPOUND Description: white	F	A B	LIVINGS 3 BED A	394952 394953			
05	Material: WINDOW GLAZING Description: WHITE	F	A B	EAST EXT APERTL EXT	394954 394955	EXT.	UNITS	
06	Material: LINOLEUM Description: WOOD GRAIN DK	F	A B	KIT 2 "	394956 394957	2	120 SF	
07	Material: LINOLEUM Description: LT WOOD GRAIN	F	A B	BATH 6 "	394958 394959	6,10	75 SF	
08	Material: LINOLEUM Description: GREEN SQ PATTERN	F	A B	RM 5 RM 1	394960 394961	12,15	200 SF	
09	Material: LINOLEUM Description: TAN w/ GREEN-YELLOW	F	A B	RM 5 RM 1	394962 394963	12,15	200 SF	
10	Material: LINOLEUM Description: BELGE	F	A B	BATH 10 KIT 11	394964 394965	10,11	150 150 SF	
11	Material: LINOLEUM Description: BELGE CHAIN WEAVE	F	A B	BED 12 BED 12	394966 394967	12	100 SF	

Asbestos Material Sampling Summary Sheet
Miscellaneous materials

Revision date 5/7/2015

Job #:	177231		Building:	1221 Sanford St.		Date:	2-16-16	
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #	
12	Material: LINOLEUM Description: Yellow/green/black paper	F	A	BED 12 394968	12	100 SF		
	Material: LINOLEUM Description: BEIGE/ORANGE	F	B	BED 17 UNDER #17 394969				
13	Material: LINOLEUM Description: BLACK/BELGE SWIRL	F	A	BED 12 394970				
	Material: LINOLEUM Description: FLOOR PAPER	F	B	BED 12 UNDER #12 394971	12	100 SF		
14	Material: LINOLEUM Description: BLACK	F	A	BED 13 394972				
	Material: LINOLEUM Description: GREEN	F	B	BED 13 394973	13	150 SF		
15	Material: LINOLEUM Description: BEIGE/BROWN PATTERN	F	A	BED 13 394974				
	Material: LINOLEUM Description: FLOOR PAPER	F	B	BED 13 UNDER #14 394975	13	150 SF		
16	Material: LINOLEUM Description: BROWN BLACK	F	A	BED 13 394976				
	Material: LINOLEUM Description: BEIGE CREAM	F	B	BED 13 UNDER #15 394977	13	150 SF		
17	Material: LINOLEUM Description: GREEN STREAKS	F	A	BED 13 394978				
	Material: LINOLEUM Description: GRAY	F	B	BED 13 UNDER #15 394979	13	150 SF		
18	Material: LINOLEUM Description: FLOOR PAPER	F	A	STAIR 15 394980				
	Material: LINOLEUM Description: BROWN BLACK	F	B	STAIR 15 UNDER #15 394981	15	40 SF		
19	Material: LINOLEUM Description: BEIGE CREAM	F	A	BATH 18 394982				
	Material: LINOLEUM Description: GREEN STREAKS	F	B	BATH 18 UNDER #18 394983	18	80 SF		
20	Material: LINOLEUM Description: GRAY	F	A	BATH 18 394984				
	Material: LINOLEUM Description: GRAY	F	B	BATH 18 UNDER #19 394985	18	80 SF		
21	Material: LINOLEUM Description: GRAY	F	A	KIT 19 394986				
	Material: LINOLEUM Description: GRAY	F	B	KIT 19 394987	19	130 SF		

Asbestos Material Sampling Summary Sheet
Miscellaneous materials

Revision date 5/7/2015

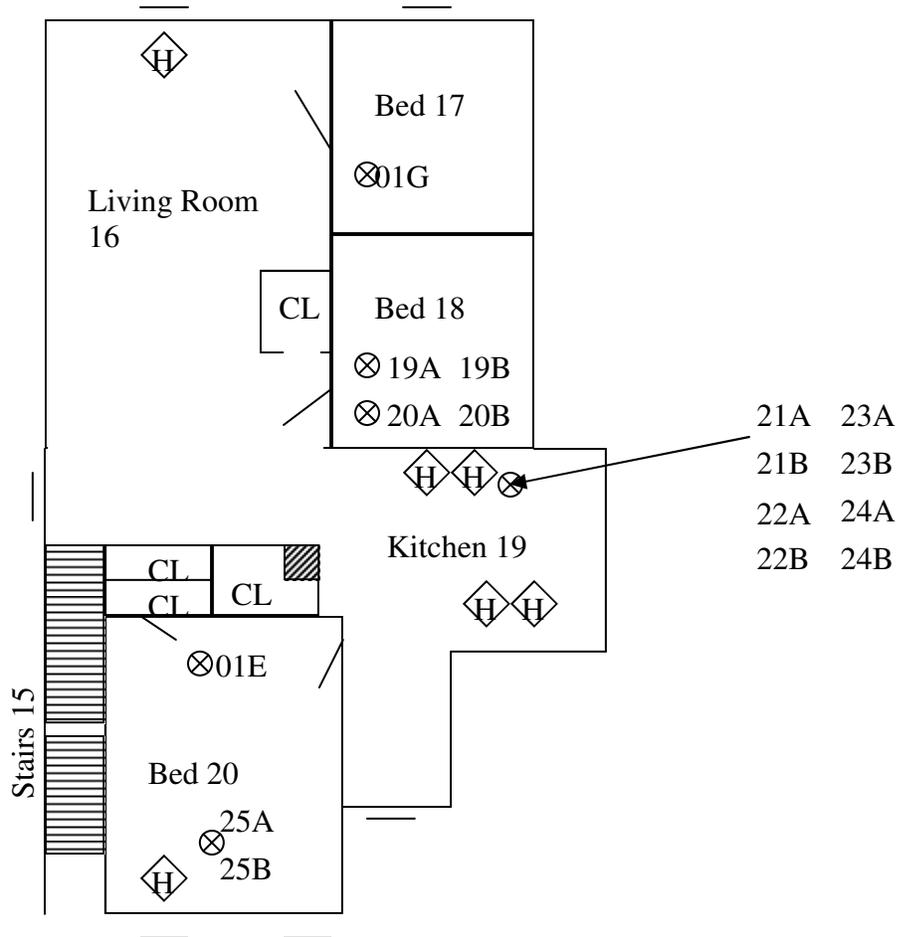
Job #:	177231	Building:	1221 SANFORD ST	Date:	2-16-16		
Material no.	Material Description	Friable (F)/ Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
22	Material: LINOLEUM Description: Yellow	F	A	KIT 19	394988	180 SF	
	Material: LINOLEUM Description: green PATTERN	F	B	KIT 19	394989	180 SF	
23	Material: LINOLEUM Description: BROWN PATTERN	F	A	KIT 19	394990	180 SF	
	Material: LINOLEUM Description: BROWN PATTERN	F	B	KIT 19	394991	180 SF	
24	Material: LINOLEUM Description: BEIGE	F	A	BED 20	394992	160 SF	
	Material: LINOLEUM Description: BEIGE	F	B	BED 20	394993	160 SF	
25	Material: CEILING TILE Description: WHITE 2x4 FOOT	F	A	STAIR 15	394994	40 SF	
	Material: CEILING TILE Description: WHITE 2x4 FOOT	F	B	STAIR 15	394995	40 SF	
26	Material: ROOF MATERIAL Description: BLACK/BROWN SHINGLES	NF	A	EXT	394996		
	Material: ROOF MATERIAL Description: BLACK/BROWN SHINGLES	NF	B	EXT	394997		
27	Material: SIDING Description: GREEN BLACK SHINGLE/FIBER	NF	A	EXT. ALBERTA	394998		
	Material: SIDING Description: GREEN BLACK SHINGLE/FIBER	NF	B	EXT. ALBERTA	394999		
28	Material: Description: UNDER VINYL / UNDER WOOD				395000	395001	
	Material: Description: UNDER VINYL / UNDER WOOD						
	Material: Description: UNDER VINYL / UNDER WOOD						
	Material: Description: UNDER VINYL / UNDER WOOD						

APPENDIX B

SITE MAP

2nd floor

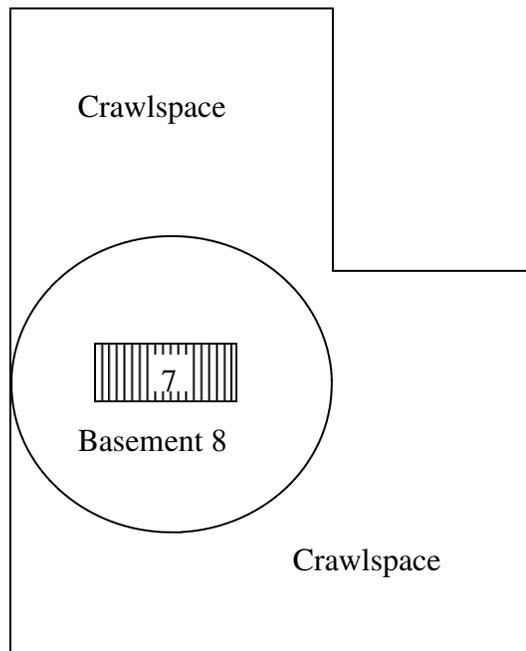
All windows wood



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.



Crawlspace/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



Side A



Side B



Side C



Side D



Hazard: Refrigerator



Hazard: Stove



Hazard: Stove



Hazard: Refrigerator



Hazard: Refrigerator



Hazard: Stove



Hazard: Electronics



Hazard : Electronics.



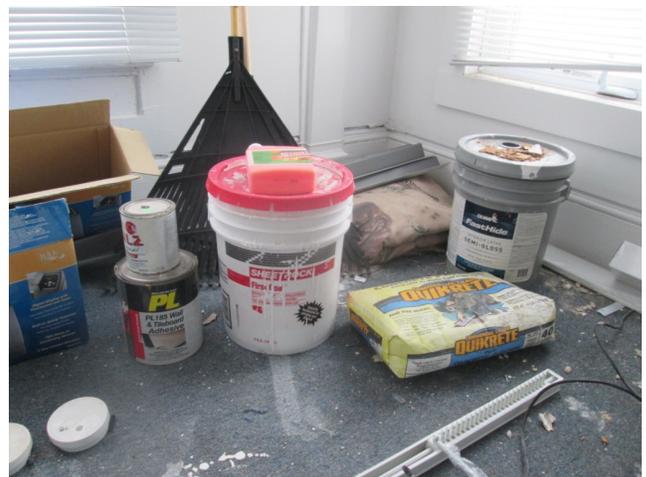
Hazard: Electronics



Hazard : Light Ballasts



Hazard : Light Ballasts



Hazard: Glue/Solvent/cleaners /Paint



Hazard: Paint



Hazard : Smoke detector



Hazard : Smoke detector



Hazard: Florescent Lights



Hazard : Florescent Light



Hazard: Gas Heaters



Hazard: Gas Heaters



Hazard :Gas Heaters

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	Ln. Ft.	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)