



September 13, 2017

Mr. Gordon M. Warner, Jr.  
Civil Engineer Technician  
City of Dowagiac, Michigan  
241 South Front Street  
Dowagiac, Michigan 49047

**Re: Residential Asbestos Building Inspection Report  
801 West High Street in Dowagiac, Michigan  
Heartland Project #5303-17-01**

Dear Mr. Warner:

Heartland Environmental Associates, Inc. (Heartland) is pleased to provide the Cass County Land Bank Authority and the City of Dowagiac, Michigan (City) with this asbestos building inspection report for the above referenced residential dwelling in Dowagiac, Michigan. This asbestos building inspection was conducted to evaluate for the presence/absence of asbestos containing materials (ACM) at the subject site, and was conducted as part of pre-demolition planning.

## Sampling Results

On September 5, 2017, Mr. Nivas R. Vijay, Senior Project Manager with Heartland completed the inspection of the residential property. Mr. Vijay is an accredited asbestos building inspector in the State of Michigan. A copy of Mr. Vijay's certificate of asbestos accreditation has been provided for review in Attachment A. Photographs taken of the residential property during the time of the inspection are provided in Attachment B.

The residential property consisted of a two-story dwelling built with a basement and partial crawlspace constructed on concrete slab foundation, totaling approximately 1,544 square feet. The dwelling was generally constructed of wood frame with a vinyl siding façade. The dwelling was constructed on a concrete foundation with a partial crawlspace and basement. The interior of the residence was segmented primarily with drywall walls over wood frame. Roofing consisted of built up asphalt roofing shingles overtop wooden decking. The dwelling consisted of wooden floors with areas of carpeting and resilient vinyl flooring over the floors.

Based on Heartland's visual assessment of the facility, several types of building materials were considered non-suspect ACMs and therefore were not sampled. These materials include: concrete floors, brick and block, metal fixtures, wood and plywood materials, fiberglass insulation and ceramic tiles.

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Heartland identified eight homogeneous areas of suspect ACMs within the dwelling. Homogeneous areas identified included one type of “popcorn” ceiling material, one type of drywall, two types of resilient vinyl flooring materials with associated mastic, three types of plaster and one type of asphalt roofing material. The suspect materials were assessed based on condition of the material and friability (the ability to be crumbled or turned to dust by hand pressure). Heartland utilized disposable nitrile gloves while obtaining samples. The samples were then placed into pre-labeled sealable bags.

Following collection of the samples, Heartland transported the samples under Heartland chain of custody to ACM Engineering and Environmental Services, Inc., a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory, in South Bend, Indiana. The suspect ACM materials sampled were submitted for Polarized Light Microscopy (PLM) analysis, with the laboratory estimating the percent asbestos by visual inspection. Materials defined as ACM are those that contain greater than 1% asbestos. Materials that are not friable and contain less than 1% asbestos are not considered to be ACM.

Based on the laboratory results, resilient floor coverings and associated mastic located throughout the first floor room and plaster located on the ceiling of the first floor of the dwelling were determined to be asbestos containing.

Laboratory analytical results are provided as Attachment C. A summary of sampled materials is provided in Table 1 below.

| <p style="text-align: center;"><b>Table 1</b><br/> <b>Summary of Sampled Building Materials</b><br/> <b>801 West High Street</b><br/> <b>Dowagiac, Michigan</b><br/> <b>September 5, 2017</b></p> |                |                 |  |                                |                 |
|---|----------------|-----------------|--|--------------------------------|-----------------|
| <b>Material/Location</b>  | <b>Friable</b> | <b>Category</b> | <b>Asbestos Content</b>                                      | <b>Area (ft<sup>2</sup>) *</b> | <b>Sample #</b> |
| Popcorn Ceiling – White covering, 1 <sup>st</sup> Floor Living Room/Kitchen   | No             | II              | ND   | ~500                           | CL – 1(A-C)     |
| Drywall – Throughout Dwelling   | Yes            | RACM            | ND   | ~1,000                         | DW – 1(A-C)     |
| Floor Tile/Mastic - 9” x 9” brown, 1 <sup>st</sup> Floor  | No             | I (Mastic Only) | <b>4% Chrysotile – Tile</b><br><b>2% Chrysotile – Mastic</b> | ~400                           | FT – 1(A-C)     |
| Floor Tile/Mastic – Vinyl Sheet w/floral pattern, 2 <sup>nd</sup> Floor   | No             | I (Mastic Only) | ND   | ~400                           | FT – 2(A-C)     |
| Plaster – Ceilings, 1 <sup>st</sup> Floor   | Yes            | RACM            | <b>1% Chrysotile**</b>                                       | ~1,000                         | PL – 1(A-C)     |
| Plaster – 1 <sup>st</sup> Floor Bathroom Walls  | Yes            | RACM            | ND   | ~500                           | PL – 2(A-C)     |
| Plaster – 2 <sup>nd</sup> Floor Walls   | Yes            | RACM            | ND   | ~1,000                         | PL – 3(A-C)     |

| <p style="text-align: center;"><b>Table 1</b><br/> <b>Summary of Sampled Building Materials</b><br/> <b>801 West High Street</b><br/> <b>Dowagiac, Michigan</b><br/> <b>September 5, 2017</b></p>   |         |          |                  |                           |          |
|---|---------|----------|------------------|---------------------------|----------|
| Material/Location   | Friable | Category | Asbestos Content | Area (ft <sup>2</sup> ) * | Sample # |
| Asphalt Roofing Material, Roof  | No      | I        | ND               | -                         | -        |
| Friable: Yes – hand friable, No – non-friable<br>ND: No asbestos detected<br>*Square footage estimates determined from site reconnaissance and measurement obtained during site reconnaissance<br>**Asbestos content verified after further laboratory point count analysis |         |          |                  |                           |          |

## Recommendations

Based on the results of this asbestos building inspection, ACM was encountered in the form of resilient floor coverings and associated mastic located throughout the first floor and plaster located on the ceilings of the first floor. Resilient vinyl flooring is considered non-friable ACMs and therefore are not regulated ACM materials (RACMs). The plaster material is a friable material and is considered RACM.

It is the understanding of Heartland that the dwelling will either be renovated or demolished, meeting the definition of renovation and demolition, in accordance with the National Emission Standards for Hazardous Air Pollutant (NESHAP) for the State of Michigan. As ACMs in the form of resilient floor coverings and associated mastics encountered are non-friable, these flooring materials are recommended to be removed as part of demolition activities, provided the materials are not subject to sanding, grinding, abrading or any other mechanical operations which may damage the flooring materials and cause them to become friable. These materials can be disposed of as construction related demolition debris and will not require special abatement.

RACM (plaster) was identified in quantities greater than the written notification requirements (>160 square feet) specified per Michigan Department of Environmental Quality (MDEQ) Air Quality Division NESHAP 40 CFR Part 61, Subpart M and per the Michigan Department of Licensing and Regulatory Affairs (LARA) Asbestos Program P.A 135 of 1986, as amended, Section 220. Written notification to the MDEQ/LARA at least ten (10) working days prior to any future planned renovation/demolition activities will be required. Heartland recommends abatement of these materials be conducted by licensed asbestos abatement workers accredited in the State of Michigan prior to any future planned renovation and/or demolition of the building.

## Disclaimer

This environmental report was prepared in accordance with generally accepted principles and practices in the environmental consulting field. Conclusions and recommendations expressed herein were developed from site evaluation and limited research, and we are not responsible for unrecorded data pertaining to this site. Heartland makes no warranties, expressed or implied, as

to the fitness or merchantability of said property for any particular purpose, and we are not responsible for independent conclusions or opinions made by others based on this report.

Reasonable efforts were made to identify suspect ACM within the inspected facility. The manner of the inspection did not compromise the structural integrity of the buildings or endanger the safety of sampling personnel or other contractors/occupants.

If you should have questions regarding this report, please contact Heartland at 574-289-1191.

Sincerely,

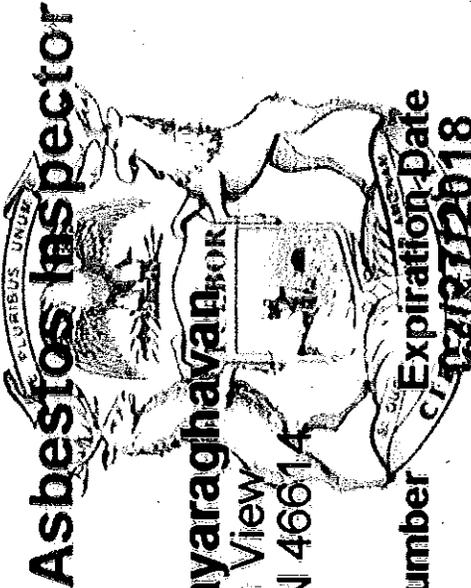
A handwritten signature in black ink, appearing to read 'N. Vijay', with a stylized flourish at the end.

Nivas R. Vijay, CHMM  
Senior Project Manager  
State of Michigan Asbestos Inspector License #A37308

**ATTACHMENT A**  
**ASBESTOS LICENSE DOCUMENTATION**

**State of Michigan**  
Department of Licensing and Regulatory Affairs  
Michigan Occupational Safety & Health Administration - Asbestos Program

**MICHIGAN**



**Nivas R. Vijayaraghavan**  
1825 Southern View  
South Bend, IN 46614

**Accreditation Number**  
**A37308**

**Expiration Date**  
**05/29/2018**



**DOB: 05/29/1979**

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

Accreditation card is **126607**  
not valid if altered.

**ATTACHMENT B**  
**SITE PHOTOGRAPHIC LOG**

### PHOTOGRAPHIC RECORD

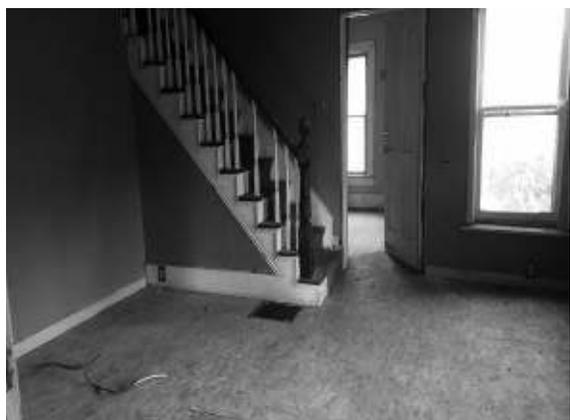
Project Name: 801 West High Street Dowagiac, Cass County, Michigan



|           |   |
|-----------|---|
| Photo #1: | View of exterior of house (September 5, 2017) |
|-----------|---|



|           |   |
|-----------|---|
| Photo #2: | View of exterior of house (September 5, 2017) |
|-----------|---|



|           |   |
|-----------|---|
| Photo #3: | View of interior of house (September 5, 2017) |
|-----------|---|



|           |  |
|-----------|--|
| Photo #4: | View of 9"x9" ACM floor tile in first floor room (September 5, 2017) |
|-----------|--|



|           |  |
|-----------|--|
| Photo #5: | View of collapsed roof in back of home (September 5, 2017) |
|-----------|--|



|           |  |
|-----------|--|
| Photo #6: | View of second floor (September 5, 2017) |
|-----------|--|

**ATTACHMENT C**

**LABORATORY ANALYTICAL REPORT**



## **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**

A = Amosite  
 AC = Actinolite  
 AN = Anthophyllite  
 C = Chrysotile  
 CR = Crocidolite  
 T = Tremolite  
 ---- = No Asbestos Detected

**NON-ASBESTOS MATERIALS**

CF = Ceramic Fibers      N = Nylon  
 CO = Cotton              O = Other  
 G = Fibrous Glass      S = Synthetics  
 H = Hair                  V = Vermiculite  
 M = Mineral Wool

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.



**ACM ENGINEERING & ENVIRONMENTAL SERVICES**  
 26598 U.S. 20 WEST, SOUTH BEND, IN 46628

WWW.ACMENV.COM

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

**CLIENT:** Heartland Environmental Associates  
 3410 Mishawaka Avenue  
 South Bend, IN 46615

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

**NVLAP LAB ID #:** 101977-0

**MATRIX:** Bulk

**LOCATION:** 801 W. High Street  
 Dowagiac, MI

**Sample Date:** 9/5/17

**Analysis Date:** 9/7/17

**ACM PROJECT #:** 27294

| CLIENT SAMPLE # | LAB SAMPLE # | SAMPLE IDENTIFICATION                | ASBEST | CELL | NON FIB<br>NON<br>ACBM | FIB<br>NON<br>ACBM |
|-----------------|--------------|--------------------------------------|--------|------|------------------------|--------------------|
| CL-1A           | 1711545      | WHITE POPCORN CEILING                | ----   | ---- | 98%                    | 2% S               |
| CL-1B           | 1711546      | WHITE POPCORN CEILING                | ----   | 5%   | 95%                    | ----               |
| CL-1C           | 1711547      | WHITE POPCORN CEILING                | ----   | 8%   | 92%                    | ----               |
| DW-1A           | 1711548      | WHITE DRYWALL                        | ----   | 10%  | 87%                    | 3% G               |
| DW-1B           | 1711549      | WHITE DRYWALL                        | ----   | 11%  | 84%                    | 5% G               |
| DW-1C           | 1711550      | WHITE DRYWALL                        | ----   | 25%  | 75%                    | ----               |
| FT-1A           | 1711551      | BROWN FLOOR TILE                     | 4% C   | ---- | 96%                    | ----               |
| FT-1A           | 1711551A     | BLACK MASTIC                         | 2% C   | ---- | 98%                    | ----               |
| FT1-1B          | 1711552      | POSITIVE PER SAMPLE 1711551 (FT-1A)  | ----   | ---- | ----                   | ----               |
| FT-1B           | 1711552A     | POSITIVE PER SAMPLE 1711551A (FT-1A) | ----   | ---- | ----                   | ----               |
| FT-1C           | 1711553      | POSITIVE PER SAMPLE 1711551 (FT-1A)  | ----   | ---- | ----                   | ----               |
| FT-1C           | 1711553A     | POSITIVE PER SAMPLE 1711551A (FT-1A) | ----   | ---- | ----                   | ----               |
| FT-2A           | 1711554      | GREEN FLOOR TILE                     | ----   | 39%  | 61%                    | ----               |
| FT-2A           | 1711554A     | TAN MASTIC                           | ----   | ---- | 100%                   | ----               |
| FT-2B           | 1711555      | GREEN FLOOR TILE                     | ----   | 36%  | 64%                    | ----               |
| FT-2B           | 1711555A     | TAN MASTIC                           | ----   | ---- | 100%                   | ----               |
| FT-2C           | 1711556      | GREEN FLOOR TILE                     | ----   | 37%  | 63%                    | ----               |
| FT-2C           | 1711556A     | TAN MASTIC                           | ----   | ---- | 100%                   | ----               |
| PL-1A           | 1711557      | GREY PLASTER                         | 3% C   | ---- | 97%                    | ----               |
| PL-1B           | 1711558      | POSITIVE PER SAMPLE 1711557 (PL-1A)  | ----   | ---- | ----                   | ----               |
| PL-1C           | 1711559      | POSITIVE PER SAMPLE 1711557 (PL-1A)  | ----   | ---- | ----                   | ----               |
| PL-2A           | 1711560      | WHITE/GREEN PLASTER                  | ----   | ---- | 100%                   | ----               |
| PL-2B           | 1711561      | WHITE/GREEN PLASTER                  | ----   | ---- | 100%                   | ----               |
| PL-2C           | 1711562      | WHITE/GREEN PLASTER                  | ----   | ---- | 100%                   | ----               |
| PL-3A           | 1711563      | GREY PLASTER                         | ----   | 22%  | 78%                    | ----               |
| PL-3B           | 1711564      | GREY PLASTER                         | ----   | 25%  | 75%                    | ----               |
| PL-3C           | 1711565      | GREY PLASTER                         | ----   | 23%  | 77%                    | ----               |
| RF-1A           | 1711566      | BLACK ROOFING                        | ----   | 40%  | 60%                    | ----               |

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

Microscopist:

*Anna Platt*

Title: QC Administrator

Date: 9/7/17

Revision 2 2/10/14

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

**NVLAP LAB ID #:** 101977-0

**MATRIX:** Bulk

**LOCATION:** 801 W. High Street  
Dowagiac, MI

**Sample Date:** 9/5/17

**Analysis Date:** 9/7/17

**ACM PROJECT #:** 27294

| CLIENT SAMPLE # | LAB SAMPLE # | SAMPLE IDENTIFICATION | ASBEST | CELL | NON FIB NON ACBM | FIB NON ACBM |
|-----------------|--------------|-----------------------|--------|------|------------------|--------------|
| RF-1B           | 1711567      | BLACK ROOFING         | ----   | 42%  | 58%              | ----         |
| RF-1C           | 1711568      | BLACK ROOFING         | ----   | 39%  | 61%              | ----         |

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

Microscopist:

Title: QC Administrator

Date: 9/7/17

Revision 2 2/10/14

**POINT COUNTING ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS**

CLIENT: HEARTLAND ENVIRONMENTAL ASSOCIATES  
3410 MISHAWAKA AVE.  
SOUTH BEND, IN 46615

ANALYTICAL METHOD: EPA 40CFR61  
PT. 763 SUBPART E, APPENDIX E  
POLARIZED LIGHT MICROSCOPY - POINT COUNTING

CLIENT PROJECT: 801 W. HIGH STREET

NVLAP LAB CODE #: 101977

DATE OF SAMPLE: 09/05/17

DATE OF ANALYSIS: 09/08/17

SAMPLE SITE: 801 W. HIGH STREET  
DOWAGIAC, MI

ACM PROJECT #: 27294

| CLIENT<br>SAMPLE<br>NUMBER | LAB<br>SAMPLE<br>NUMBER | # OF<br>SLIDES | ASBESTOS CONCENTRATION BY POINT<br>COUNTING | AVERAGE CONCENTRATION OF<br>ASBESTOS PERCENTAGE |
|----------------------------|-------------------------|----------------|---|---|
| PL-1A                      | 1711557                 | 8              | 4/400                                       | 1% ASBESTOS DETECTED                            |

MICROSCOPIST:



DATE:

