Angstrom Analytical &
Environmental Services

5501 Cedar Lake Rd.
St. Louis Park, MN 55416
952-252-0405 office
952-252-0407 fax

Bill Buelow
GMHC
15 South Fifth Street Suite S710
Minneapolis MN. 55402

January 13, 2012

4330 Logan Ave N
Minneapolis, MN

Dear Bill:

Kevin Hagen (AI2652), a representative of Angstrom Analystical, Inc., visited the above referenced property on January 13, 2012 for the purpose of conducting an asbestos renoavtion inspection. We are prepared to state that there are friable and category II non-friable asbestos containing building materials contained in or on the fabric of the structure.

The following materials tested positive for the presence of asbestos:
**Vent Tape** **Linoleum** **Sink Undercoat** **Flue Patch**

**The friable materials are:**
**1. Approximately 130-140 square feet of asbestos containing linoleum in the kitchen/stairs.**
**2. Approximately 4-6 vents with asbestos containing tape in the basement.**

The non-friable materials are:
Category II:
3. Approximately 1 sink with an asbestos undercoating in the kitchen.
4. Approximately 2 asbestos containing flue patches in the basement.

No samples other than from the fabric of the building that is planned for demolition were taken or analyzed and this report only relates only to 4330 Logan Ave N . Fifty seven samples of suspect building materials were collected and analyzed in our laboratory by Polarized Light Microscopy. Please see attached notes.

During the course of the survey the following hazardous materials were noted:

**Mercury**
1 thermostat

**Misc. Materials**
2 Smoke detectors
1 Security System

**Appliances**
1 water heater
1 washer & dryer
1 Furnace
1 refrigerator
1 dishwaher
1 stove

All friable and category II non-friable materials need to be removed, per applicable regulations, prior to and demolition efforts. Category I non-friable materials are allowed to be left in place for the demolition. However, the landfill must be made aware that the demolition debris will contain (minimal amounts of) category I non-friable asbestos containing material and is subject to the MPCA's rules and regulations pertinent to the demolition efforts (notifications, etc.). This survey should not be interpreted as a bidding document or as an asbestos project design. It is incumbent upon the contractor to verify quantities. Quantification of materials identified in this inspection report are approximations and based on observed quantities. Additional amounts of material may be present under floor, above ceilings and inside wall cavities and not fully quantified. For example, thermal system insulation indentified in a basement may also exist inside wall cavities.

If you have any questions, please call us at the number above.

Sincerely,

Kevin Hagen
Angstrom Analytical, Inc.

Angstrom Analytical & Environmental Services

5001 Cedar Lake Road
St. Louis Park, MN 55416
952-252-0405

# Material Identification Table

Project #: On-site
Date: January 13, 2012

| | | | | | |
|---|---|---|---|---|---|
| Client: | GMHC | Project: | Residential | N = no damage | ND = none detected | PD = potential damage |
| Address: | 15 South Fifth Street Suite S710 | Address: | 4330 Logan Ave N | D = moderate damage | NS = Not Sampled | PSD = potential for significant damage |
| | Minneapolis MN. 55402 | | Minneapolis, MN | SD = significant damage | NAC = not accessible | |
| Phone: | 612-339-0601 Ext.16 | Contact: | Bill Buelow | SF = square feet | EA = each | NS-Not Suspect |
| Fax: | | Phone: | 612-339-0601 Ext.16 | LF = linear feet | | NT-Not Tested |

| Sample # | Location | Material | Description | Asbestos / % | Quantity / Unit | Condition | Damage Potential | Rating |
|---|---|---|---|---|---|---|---|---|
| 1-3 | Bath/entrance | Tile,mortar,grout | Cementitious | ND | 40-45/SF | N | PD | |
| **4-6** | **Kitchen/stairs** | **Linoleum top layer** | **small square** | **CHR 14%** | **130-140/SF** | **N** | **PD** | |
| 7-9 | Kitchen/stairs | Linoleum 2nd layer | Tan | ND | 130-140/SF | N | PD | |
| 10-12 | Kitchen/stairs | Underlayment bottom | Gray fibrous | ND | 130-140/SF | N | PD | |
| **13-15** | **Kitchen** | **Sink undercoating** | **Gray** | **CHR 14%** | **1/EA** | **N** | **PD** | |
| 16-18 | Throughout | Plaster skim coat | Cementitious | ND | 1300-1400/SF | N | PD | |
| 19-21 | Throughout | Plaster base coat | Cementitious | ND | 1300-1400/SF | N | PD | |
| 22-24 | Throughout | Sheetrock,joint,tape | White granular | ND | 1300-1400/SF | N | PD | |
| 25-27 | Throughout | Wall insulation | Gray fluff | ND | 550-600/SF | N | PD | |
| 28-30 | Attic | Attic insulation | Brown fluff | ND | 550-600/SF | N | PD | |
| 31-33 | Bedroom | Ceiling texture | White granular | ND | 130-140/SF | N | PD | |
| 34-36 | Basement | 1x1 ceiling tile debris | Yellow/tan | ND | 50-60/SF | N | PD | |
| 37-39 | Basement | 12x12 floor tile | Tan stone patt. | ND | 550-600/SF | N | PD | |
| 40-42 | Basement | Mastic for 37-39 | Black | ND | 550-600/SF | N | PD | |
| **43-45** | **Basement** | **TSI vent tape** | **Gray fibrous** | **CHR 47%** | **4-6/EA** | **N** | **PD** | |
| 46-48 | Basement | Window glazing | Gray hard | ND | 5/EA | N | PD | |
| **49-51** | **Basement** | **Flue patch** | **Gray fibrous** | **CHR 8%** | **2/EA** | **N** | **PD** | |
| 52-54 | Exterior | Roofing | Black/gray | ND | 750-800/SF | N | PD | |
| 55-57 | Exterior | Window and door caulking | White | ND | 90-110/SF | N | PD | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CHR-Chrysotile | TREM-Tremolite | ACT-Actinolite | B-basement | BR-bedroom | H-hall | DR-dining rm | FR-family rm | C-corridor | CL-closet |
| AM-Amosite | CROC-Crocidolite | ANTH-Anthophyllite | K-kitchen | BA-bath | M-mech. | LR-living rm | G-garage | U-utility | ST-stairway |

Angstrom Analytical & Environmental Services

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**Analysis of Bulk Samples for Asbestos Using Polarized Light Microscopy (PLM)**

Bill Buelow
GMHC
15 South Fifth Street Suite S710
Minneapolis MN. 55402

Re: 4330 Logan Ave N

Number of Samples: 57

***Methods and Definitions***

*The submitted samples were analyzed using the EPA Interim Method #600/M4-82-020 (polarized light microscopy with dispersion staining). The method defines an asbestos containing material as one that contains grater than 1% asbestos by weight and asbestos is defined as the fibrous forms of serpentine and certain amphiboles. While the fibrous and non-fibrous forms of minerals are discernible microscopically in hand specimens, the distinction between them is not clear on a microscopic level, especially after processing or manufacturing. Fibrous amphiboles are generally those whose mean aspect ratios (length over width) under the microscope are approximately >10; non-fibrous amphiboles are generally those whose mean aspect ratios are approximately <6. During analysis, morphology and an estimate of mean aspect ratio are used to assign a given mineral fiber population to fibrous and non-fibrous categories. That non-fibrous amphiboles are not reported as asbestos is consistent with mineralogical definitions, but does not imply that non-fibrous amphiboles are not hazardous. Airborne concentrations of them may be regulated by OSHA under certain circumstances. The type of dispersion staining used is generally phase contrast, although central stop dispersion staining may also be used.*

***Percentage Reporting***

*The percentage of each fiber type present was determined using volume percents estimated from stereoscopic examination, projected area percents from mounted slide examination and percents from comparison to weight percent standards. Such estimations are suitable for most samples, but do have large error ranges. Errors are estimated to be 100 relative percent uncertainty for percentage estimates under 10% ranging down to as little as 10 relative percent uncertainty for percentage estimates greater than 50%. Friable samples which have been estimated by the above methods to contain less than 10% asbestos can be point-counted, according to the EPA Interim Methods, as required by NESHAPS. In low percentage samples, point counting may produce false negatives or positives, due to the small number of points counted. For samples consisting of more than one apparent type of material or layer, the percentage of each fiber type in each type of material of layer is determined and reported separately; an overall average for the sample of each fiber type is then calculated. The reported friability of a sample refers to that friability observed in the condition analyzed (broken, crushed, etc.), and is not to be substituted for an on-site assessment of friability. Each Angstrom Analytical lab report relates only to the sample tested and may not, due to the sampling process be representative of the material sampled.*

Steve Wallinga, Angstrom Analytical, Inc.

January 13, 2012

## Asbestos Bulk Sample Chain of Custody

**Angstrom Analytical & Environmental Services**

**5001 Cedar Lake Road**
**St. Louis Park, MN 55416**
**952-252-0405**

Project # On-site
Received: 1/13/2012 Analyzed: 1/17/2012

| | | | |
|---|---|---|---|
| Client: | GMHC | Project: | Residential |
| Address: | 15 South Fifth Street Suite 710<br>Minneapolis MN. 55402 | Address: | 4330 Logan Ave N<br>Minneapolis, MN |
| Phone: | | Contact: | Bill Buelow |
| Fax: | 0 | Phone: | 612-339-0601 Ext.1 |

| Sample# | Location | Material | Description | Asbestos / % |
|---|---|---|---|---|
| 1 | Bath/entrance | Tile,mortar,grout | Cementitious | ND |
| 2 | Bath/entrance | Tile,mortar,grout | Cementitious | ND |
| 3 | Bath/entrance | Tile,mortar,grout | Cementitious | ND |
| 4 | Kitchen/stairs | Linoleum top layer | small square | CHR 14% |
| 5 | Kitchen/stairs | Linoleum top layer | small square | CHR 14% |
| 6 | Kitchen/stairs | Linoleum top layer | small square | CHR 14% |
| 7 | Kitchen/stairs | Linoleum 2nd layer | Tan | ND |
| 8 | Kitchen/stairs | Linoleum 2nd layer | Tan | ND |
| 9 | Kitchen/stairs | Linoleum 2nd layer | Tan | ND |
| 10 | Kitchen/stairs | Underlayment bottom | Gray fibrous | ND |
| 11 | Kitchen/stairs | Underlayment bottom | Gray fibrous | ND |
| 12 | Kitchen/stairs | Underlayment bottom | Gray fibrous | ND |
| 13 | Kitchen | Sink undercoating | Gray | CHR 14% |
| 14 | Kitchen | Sink undercoating | Gray | CHR 14% |
| 15 | Kitchen | Sink undercoating | Gray | CHR 14% |
| 16 | Throughout | Plaster skim coat | Cementitious | ND |
| 17 | Throughout | Plaster skim coat | Cementitious | ND |
| 18 | Throughout | Plaster skim coat | Cementitious | ND |
| 19 | Throughout | Plaster base coat | Cementitious | ND |
| 20 | Throughout | Plaster base coat | Cementitious | ND |
| 21 | Throughout | Plaster base coat | Cementitious | ND |

CHR-Chrysotile TREM-Tremolite ACT-Actinolite NS-Not Suspect ND-None Detected
AM-Amosite CROC-Crocidolite ANTH-Anthophyllite NT-Not Tested

## Asbestos Bulk Sample Chain of Custody

Angstrom Analytical & Environmental Services
5001 Cedar Lake Road
St. Louis Park, MN 55416
952-252-0405

Project # On-site
Received: 1/13/2012 Analyzed: 1/17/2012

| | | | |
|---|---|---|---|
| Client: | GMHC | Project: | Residential |
| Address: | ='ID Table'!B7 | Address: | 4330 Logan Ave N |
| | Minneapolis MN. 55402 | | Minneapolis, MN |
| Phone: | | Contact: | Bill Buelow |
| Fax: | 0 | Phone: | 612-339-0601 Ext.1 |

| Sample # | Location | Material | Description | Asbestos/% |
|---|---|---|---|---|
| 22 | Throughout | Sheetrock,joint,tape | White granular | ND |
| 23 | Throughout | Sheetrock,joint,tape | White granular | ND |
| 24 | Throughout | Sheetrock,joint,tape | White granular | ND |
| 25 | Throughout | Wall insulation | Gray fluff | ND |
| 26 | Throughout | Wall insulation | Gray fluff | ND |
| 27 | Throughout | Wall insulation | Gray fluff | ND |
| 28 | Attic | Attic insulation | Brown fluff | ND |
| 29 | Attic | Attic insulation | Brown fluff | ND |
| 30 | Attic | Attic insulation | Brown fluff | ND |
| 31 | Bedroom | Ceiling texture | White granular | ND |
| 32 | Bedroom | Ceiling texture | White granular | ND |
| 33 | Bedroom | Ceiling texture | White granular | ND |
| 34 | Basement | 1x1 ceiling tile debris | Yellow/tan | ND |
| 35 | Basement | 1x1 ceiling tile debris | Yellow/tan | ND |
| 36 | Basement | 1x1 ceiling tile debris | Yellow/tan | ND |
| 37 | Basement | 12x12 floor tile | Tan stone patt. | ND |
| 38 | Basement | 12x12 floor tile | Tan stone patt. | ND |
| 39 | Basement | 12x12 floor tile | Tan stone patt. | ND |
| 40 | Basement | Mastic for 37-39 | Black | ND |
| 41 | Basement | Mastic for 37-39 | Black | ND |
| 42 | Basement | Mastic for 37-39 | Black | ND |

CHR-Chrysotile TREM-Tremolite ACT-Actinolite NS-Not Suspect ND-None Detected
AM-Amosite CROC-Crocidolite ANTH-Anthophyllite NT-Not Tested

## Asbestos Bulk Sample Chain of Custody

**Angstrom Analytical & Environmental Services**

**5001 Cedar Lake Road**
**St. Louis Park, MN 55416**
**952-252-0405**

Project # On-site
Received: 10/9/2008 Analyzed: 1/17/2012

| | | | |
|---|---|---|---|
| Client: | GMHC | Project: | Residential |
| Address: | 15 South Fifth Street Suite 710 | Address: | 4330 Logan Ave N |
| | Minneapolis MN. 55402 | | Minneapolis, MN |
| Phone: | | Contact: | Bill Buelow |
| Fax: | 0 | Phone: | 612-339-0601 Ext.1 |

| Sample # | Location | Material | Description | Asbestos / % |
|---|---|---|---|---|
| 43 | Basement | TSI vent tape | Gray fibrous | CHR 47% |
| 44 | Basement | TSI vent tape | Gray fibrous | CHR 47% |
| 45 | Basement | TSI vent tape | Gray fibrous | CHR 47% |
| 46 | Basement | Window glazing | Gray hard | ND |
| 47 | Basement | Window glazing | Gray hard | ND |
| 48 | Basement | Window glazing | Gray hard | ND |
| 49 | Basement | Flue patch | Gray fibrous | CHR 8% |
| 50 | Basement | Flue patch | Gray fibrous | CHR 8% |
| 51 | Basement | Flue patch | Gray fibrous | CHR 8% |
| 52 | Exterior | Roofing | Black/gray | ND |
| 53 | Exterior | Roofing | Black/gray | ND |
| 54 | Exterior | Roofing | Black/gray | ND |
| 55 | Exterior | Window and door caulking | White | ND |
| 56 | Exterior | Window and door caulking | White | ND |
| 57 | Exterior | Window and door caulking | White | ND |

CHR-Chrysotile TREM-Tremolite ACT-Actinolite NS-Not Suspect ND-None Detected
AM-Amosite CROC-Crocidolite ANTH-Anthophyllite NT-Not Tested