November 18, 2002

REPORT: Full Building Survey

TO: Keith Passow, Manager Facilities Management Zone 6, 16 Architecture Building
Fay Thompson, Department of Environmental Health and Safety, Director
Tim Nelson, Facilities Management's Asbestos Coordinator, 400 Shops

FROM: Kelly Brown, Asbestos Group, Environmental Health and Safety, W-140 Boynton H.S.
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SUBJECT: Asbestos Material Survey - Smith Hall
EH&S Project No: 035-96-002
Client Project No: for database

Scope of Work: A full building asbestos material survey was conducted November 20, 1995 through January 11, 1996. The purpose of the survey was to identify asbestos-containing materials (ACM) as defined by the Environmental Protection Agency (EPA). Any material that is greater than 1% asbestos is considered to be ACM. The intent of the survey was to identify both friable and nonfriable suspect ACM, identify nonfriable ACM that may become friable under demolition or renovation conditions, and to provide approximate cost estimates for the removal of identified ACM prior to renovation of Smith Hall.

Project Description: Two hundred sixteen (216) bulk samples of suspect ACM were collected on-site and one hundred eighty-eight (188) were analyzed via polarized light microscopy (PLM) by Milan Asbestos Laboratory for asbestos content. Results of analyses are listed in Appendix I of this report. Appendix I is formatted to provide a room by room inventory of suspect ACM, the asbestos content of each material listed, and friability. An explanation of the tables and abbreviations used in the tables is included with Appendix I. Appendix II is a room by room listing of only those suspect materials that tested >1% asbestos. Minnesota Department of Health (MDH) Asbestos Rules regulate only friable ACM (material may be reduced to powder or dust under hand pressure) while the EPA regulates ACM that may become friable under demolition or renovation conditions.

The following friable or potentially friable materials tested positive as ACM:

- **<4" white fibrous pipe insulation (PI) (1)**
- **<4" pipe fitting insulation (PFI) on white fibrous (2)**
- **<4" felt w/tar PI (5)**
- **<4" fibrous PFI on felt (6)**
- **<4" fibrous PFI on fiberglass (FG) w/tar(8)**
- **<4" fibrous PFI on fiberglass (10)**
- **4"-8" white fibrous PI and associated PFI (11&12)**
- **4"-8" fibrous PFI on felt (16)**
- **4"-8" FG over <4" white fibrous PI (24)**
- **white fibrous tank (32)**
- **9"x9" grey w/black and white streaks FT (41)**
- **9"x9" beige w/brown and white streaks FT (42)**
- **9"x9" grey w/grey and white streaks FT (43)**
- **12"x12" nailhole/pinhole ceiling tile CT (82)**
- **white textured spray-on (92)**
- **transite (101)**
- **pipe insulation debris (107)**

The following suspect materials tested none detected (ND) as ACM:

- <4" fiberglass with tar PI (7)
- <4" fiberglass PI (9)
- 4"-8" felt w/tar PI (15)
- 4"-8" fiberglass PI (19)
- 4"-8" fibrous PFI on fiberglass (20)
- 4"-8" new PFI on FG PI (25)
- <4" new PFI on FG (26)
- fiberglass duct insulation (27)
- black foam PI (28)
- ceramic block mortar (29)
- fiberglass batting (30)
- wall plaster over sheetrock (31)
- ceiling plaster (34)
- wall plaster (35)
- red brick mortar (36)
- clay tile mortar (37)
- concrete block mortar (38)
- sheetrock and taping compound (39)
- baseboard adhesive (40)
- 12"x12" light tan w/ tan mottling FT (50)
- 12"x12" off white with tan mottling FT (51)
- 12"x12" white w/grey flecks FT (52)
- 12"x12" green w/ black flecks FT (53)
- 12"x12" black w/ white flecks FT (54)
- 12"x12" blue w/white streaks FT (55)
- grey floor covering (56)
- 12"x12" dark brown with brown mottling FT (60)
- 12"x12" off-white with grey streaks FT (61)
- 12"x12" black with white streaks FT (62)
- 12"x12" pitted fissure/pinhole CT and adhesive (79)
- 12"x12" random pencilhole CT and adhesive (80)
- 12"x12" fissure pinhole CT (81)
- ceiling tile adhesive for sample #82 (82.5)
- 12"x12" nailhole acoustical wall tile (83)
- 2'x2' random fissure CT (85)
- 2'x2' pitted pinhole CT (86)
- 2'x2' fissured pinhole CT (87)
- 3'x3' techtum groved CT (89)
- 2'x4' techtum (stringboard) CT and adhesive (90)
- black rubber vibration joint (93)
- foil face duct insulation (94)
- white rough spray-on (97)
- blue styrefoam w/ adhesive (98)
- brown window caulk (99)
- black windowsills (100)
- black tar on fountain (102)
- sink undercoat (103)
- fiberglass batting w/tar (108)

The following nonfriable with low potential to become friable materials tested positive as ACM:

- **floor tile adhesive (41.5, 42.5, 43.5, 50.5)**

- **canvass vibration joint (95)**
- **tar on wall (104)**
- **tar on metal (109)**

The following friable or potentially friable materials tested as less than one percent (<1%) asbestos:

- fiberglass duct insulation with mud (110)

The following nonfriable with low potential to become friable materials test <1% asbestos:

- floor tile adhesive (51.5, 55.5, 60.5, 61.5)

For room locations of above noted materials, refer to Appendices. Sample numbers of the above materials are located in the parenthesis following the sample descriptions.

Observations and Recommendations:

1. Department of Environmental Health & Safety (DEHS)
Please refer to condition assessments for specific damaged areas. In general, materials were found to be in good to excellent shape and do not pose significant health concerns to the building occupants.

2. Facilities Management;
Debris from asbestos containing pipe insulation was discovered in the crawlspace between the 3rd floor and 4th floor. Due to the lack of safe pathways, only those areas in the vicinity of the pathways were surveyed. Following a clean-up of the visible debris, it is recommended that the area be sprayed with an encapsulant. Contact Facilities Management's Asbestos Coordinator Tim Nelson if these remediation techniques wish to be examined further.

Asbestos-containing residue was observed on pipes in the crawlspace between the 3rd floor and 4th floor, in Room S47B, and in the 1st floor hallway north of Room 101. It is recommended that these pipes be encapsulated. If these pipes are to be removed, it is recommended that the residue be abated from the pipes by the Facilities Management Asbestos Abatement Unit or a Minnesota Licensed asbestos abatement contractor.

3. General;
At the time of the survey, the following areas were inaccessible: Room S24, Room S43A, Room 49J, Room 124B, Room 210A, Room 210B, Room 247A, Room 316A, Room 349B, Room 401, Room 500, the 5th floor penthouse, and the west elevator shaft. In addition, numerous ceiling hatches and wall hatches were inaccessible (see Appendix 1 of the report).

Due to the configuration of lab benches, there is a potential that asbestos-containing pipe insulation may be located behind the lab benches which were not visible during this survey.

Due to limited access points in the ceilings and walls, some pipe chases and interstitial spaces were completely inaccessible or only slightly visible. As a result, the quantities listed reflect the visibility available at the time of the survey.

The current Occupational Safety and Health Administration definition of a non-regulated asbestos material is anything that contains less than one percent asbestos by area.

Although no roofing sampling was done, complete roof sampling is recommended at a time when a qualified roofing contractor is on-site to patch core sample holes in roofing.

Cost Information: The approximate cost for the removal of all ACM is itemized below. These figures are based on the assumption that all friable and potentially friable ACM are going to be removed. For project specific removal costs, contact this office with your project requirements and unit costs can be calculated for the impacted areas.

MATERIAL TYPE	LOW RANGE	HIGH RANGE
• thermal system insulation	**160,241**	**204,242**
• floor tile & adhesive	**93,486**	**186,972**
• white textured spray-on	**12,485**	**20,430**
• tar on wall and metal	**3,440**	**6,880**
• nailhole/pinhole ceiling tile	**1,893**	**3,786**
• transite	**553**	**850**
• pipe insulation debris	**222**	**240**
• canvass vibration joint	**210**	**400**
TOTAL	**272,530**	**423,800**

All ACM removal must be performed by a Minnesota licensed asbestos abatement contractor. All asbestos removal shall be performed within the specified procedures as outlined in the University of Minnesota Technical Specification for Asbestos Abatement. Please note that removal costs are highly variable and dependent on such factors as contractor availability, accessibility of work areas and site specific work plans.

Air monitoring is required for many asbestos-related projects. Environmental Health and Safety (EH&S) is available to provide this service. The estimated cost for EH&S to complete air monitoring requirements for specific projects will be made available upon request. The cost of air monitoring is a function of contractor on-site days and may vary dependent upon project specific scope of work. EH&S will provide labor, equipment and project oversight as necessary. Project management and contract administration will be provided by the Facilities Management Project Development Group.

If there is any further information required, or other questions arise regarding this request, please contact Kelly Brown at 626-2317.

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