January 25, 1995

REPORT Revised Full Building Survey

TO: Linda McCracken-Hunt, Project Development, 100 Shops Building
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Fay Thompson, Department of Environmental Health and Safety, Director

FROM: John Allen, Asbestos Group, Environmental Health and Safety, Suite 153 U-Tech East
Building, 2331 University Ave. S.E., Minneapolis, MN 55414

SUBJECT: Asbestos Material Survey - KE - Dwan Cardiovascular Research Center
EH&S Project No: 143-92-088
Client Project No: 143-89-3013

Summary: A full building asbestos material survey was conducted from August 21, 1992 to January
28, 1993. 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 to the
Dwan Variety Club Cardiovascular Research Center. The scope of this report is limited to the scope of
work as defined in the work request dated June 22, 1992.

Project Description: One hundred eighty (180) bulk samples of suspect ACM were collected on-site and
one hundred fifty-seven (157) analyzed via polarized light microscopy (PLM) by Nova Environmental
for asbestos content. Results of analyses are listed in Appendix I of this report. Appendix I is formatted
to provide an 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 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 materials tested positive as ACM:

- <4'' white fibrous pipe insulation
- 4''-8'' white fibrous pipe insulation and associated pipe fitting insulation
- 9''-14'' white fibrous pipe insulation and associated pipe fitting insulation
- >14'' white fibrous pipe insulation and associated pipe fitting insulation
- 12''x12'' floor tile, grey with white
- 12''x12'' floor tile, light brown with brown
- black tar on spray-on fireproofing
- white gasket material

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

- <4'' pipe fitting insulation on <4'' white fibrous pipe insulation
- <4'' pipe fitting insulation on <4'' fiberglass pipe insulation
- <4" canvass wrap pipe fitting insulation on <4" fiberglass pipe insulation
- 4"-8" pipe fitting insulation on 4"-8" fiberglass pipe insulation
- 9"-14" pipe fitting insulation on 9"-14" fiberglass pipe insulation
- >14" pipe fitting insulation on >14" fiberglass pipe insulation
- white fibrous tank insulation
- white fibrous duct insulation
- white fibrous ends on fiberglass tank insulation
- ceiling plaster
- wall plaster
- spray-on fireproofing
- 2'x5' ceiling tile, white with pinholes
- 2'x5' ceiling tile, fissured
- 2'x5' ceiling tile, fissured with holes
- 2'x4' ceiling tile, sheetrock
- 2'x2' ceiling tile, textured
- 2'x2' ceiling tile, fiberglass
- 12"x12" ceiling tile, acoustical
- 12"x12" ceiling tile, fissured
- 12"x12" floor tile, tan with brown
- 12"x12" floor tile, white with tan
- 12"x12" floor tile, beige with smudges
- baseboard adhesive, brown
- red brick mortar
- concrete block mortar
- brown ceiling tile mastic

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

- floor tile adhesive
- black wall/duct mastic
- black tar on exhaust hood
- black lab tops

The following nonfriable with low potential to become friable materials tested less than 1% asbestos:

- sheetrock and taping compound

For room locations of above noted materials, refer to Appendices.

**Observations and Recommendations:** According to updated EPA rules (December 3, 1993, copy attached), separate components of a sheetrock wall (wallboard and taping compound) should now be analyzed as a composite sample. By re-analyzing the sheetrock as a complete wall system, the material tested as <1% for asbestos content. This change has been reflected in the Appendices. Although this material is no longer regulated as an asbestos-containing material, it is recommended that when impacted during renovation, remodeling or other disturbance, that dust suppression (such as wet methods and local exhaust ventilation) be employed.

Some inconsistencies were found in white fibrous pipe insulation sample results, designating some lines as asbestos containing and others as none detected for asbestos. Since results were not consistent throughout the building, all white fibrous pipe insulation was assumed positive as asbestos containing material. If only a few areas are to be impacted during renovation, additional samples can be taken on specific white fibrous lines to verify asbestos content.
accept asbestos-containing waste. In addition, no removal costs were generated for the asbestos containing wall/duct mastic since the amount of material is unknown at this time.

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.

EH&S also recommends that throughout the general renovation activities associated with this building, precautions and work practices should be implemented to minimize nuisance dust levels. Dust suppression techniques (misting the air with water and keeping materials wet) should be required of the general contractor.

If there is any further information required, or other questions arise regarding this request, please contact John Allen at 627-4861.

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Environmental Health & Safety
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cc: Roger Wegner
   John Sundsmo
An asbestos containing black mastic material was discovered in Room 79 on the mezzanine level. Room 79 was undergoing demolition and construction processes and the mastic was found on concrete walls and metal ducts. Because Room 79 was the only room in the building found under construction, the mastic was observed only in that specific area. However, it is believed that the black wall/duct mastic could very likely be present in other areas throughout the building and when additional construction work is scheduled in any part of the building, caution should be taken if this material is discovered.

Not all areas above the ceilings were accessible. Since the only thermal insulation found to be asbestos containing was the white fibrous pipe insulation, any pipe found to be white fibrous and not listed in the report should be assumed positive asbestos containing and handled appropriately.

No roofing materials were tested due to the weather conditions. If the roof is to be disturbed due to construction or demolition, core samples should be taken to verify roof contents.

Only Rooms B-22 and B-22 A have floor tile mastic that is none detected for asbestos containing material. All other areas throughout the building, regardless of floor tile type, have asbestos containing floor tile mastic. Many rooms on the 1st floor have asbestos containing 12"x12" floor tile underneath the carpeting. This should be noted in case the carpeting is removed during any proposed renovation project. If the floor tile comes up with the carpet, the carpet should then be removed by the Facilities Management Asbestos Abatement Unit or a Minnesota Licensed asbestos abatement contractor.

Fire doors were found throughout the building as being either "B-rated, Hollow Metal Fire Doors", or without labels or ratings. If any fire doors are to be removed, they should be treated as asbestos containing or be tested to verify asbestos content.

Six rooms were inaccessible: Mezzanine Level, Rooms 1, 1A, 1B, and 17A; 2nd Floor, Room 278; and 3rd Floor, Room 358.

**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.

<table>
<thead>
<tr>
<th>MATERIAL TYPE</th>
<th>LOW RANGE</th>
<th>HIGH RANGE</th>
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<tbody>
<tr>
<td>thermal system insulation</td>
<td>$60,290</td>
<td>$74,910</td>
</tr>
<tr>
<td>floor tile &amp; adhesive</td>
<td>52,560</td>
<td>105,120</td>
</tr>
<tr>
<td>black tar on spray-on</td>
<td>55,500</td>
<td>83,250</td>
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<tr>
<td>black lab tops</td>
<td>12,570</td>
<td>18,855</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$180,920</strong></td>
<td><strong>$282,135</strong></td>
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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.

No removal costs were generated for the asbestos-containing items found to be nonfriable with a low potential to become friable under demolition conditions. These materials may be treated as a component of general demolition debris, but must be disposed of in a landfill that has EPA approval to