Limited Hazardous Materials Survey Report
Summary of Findings

Sound Transit Light Rail - Rainier Vista Pedestrian Landbridge

University of Washington Project No. 203207
Seattle, Washington

Prepared for:

University of Washington
Capital Projects Office

March 17, 2010
PBS Project #: 40035.453
BACKGROUND

PBS Engineering + Environmental (PBS) performed a limited inspection of locations affected by the proposed construction of a pedestrian bridge at the South end of the Rainier Vista and the intersection of NE Pacific Place street on the University of Washington Seattle campus. The intent of this report is to ensure that the Washington State Department of Labor and Industries' requirement that a "good faith inspection" for ACMs was performed prior to renovation/demolition activities.

At the request of Mr. Andy Casillas of UW Capital Projects, all accessible areas of the structure were inspected for the presence of Asbestos-Containing Materials (ACMs), Lead-Containing Paint, Polychlorinated Biphenyls (PCBs) and Mercury-containing components.

SURVEY PROCESS

The inspection was conducted March 9, 2010 by Certified AHERA Building Inspector Chuck Greeb (cert. #105373 expires December 30, 2010). When observed, suspect ACMs were either assumed to contain asbestos or sampled assigned a unique identification number and transmitted for analysis to Seattle Asbestos Test, LLC (NVLAP #200768-0) using chain-of-custody protocols. Samples were analyzed according to EPA Method 600R-93/116 using Polarized Light Microscopy (PLM), which has a reliable limit of quantification of 1% asbestos by volume. PBS noted the quantity, location and condition of ACMs encountered during this inspection.

All accessible areas included in the scope of work were inspected as part of this investigation. Inaccessible areas are defined as those requiring selective demolition, fall protection or confined-space entry protocols to gain access.

The UW utility tunnel system (below grade) passes through this area. Present within the tunnel are high voltage cables, PCB containing equipment and asbestos insulated piping systems including suspect vapor barrier on the exterior walls of the tunnels. In addition, PBS’ survey for this scope in March 2010 did not involve destructive testing and excavation, drilling, coring or below grade sampling.

FINDINGS

Asbestos-Containing Materials (ACMs)

As part of this project, the laboratory analysis indicated no asbestos was detected in the representative sampled materials. Refer to the Attachments for sample location and sample inventory table. Materials that were sampled as part of this project and contained no detectible concentration of asbestos include the following:

- Black coating (vapor barrier) on the exterior concrete stair down to the Triangle Parking Garage;
- Caulk between concrete sidewalk joints above the Triangle Parking Garage;
- Concrete stucco in pedestrian tunnel leading to the Triangle Parking Garage;
- Caulk between concrete joints on the stair down to the Triangle Parking Garage;
Lead-Containing Paint (LCP)

Four (4) representative painted coatings from the project area were sampled for lead. The following materials with the color of paint in prentices contain lead paint:

- Steel hand rails (green – 0.8% lead –containing)
- Steel light poles (gray – 1.7% lead –containing)
- Steel barrier poles at Burke Gilman Trail (yellow – 13.0% lead –containing)

Based on the results of this testing, all paint or coatings contain lead. The paint samples were analyzed using Flame Atomic Absorption Lead Analysis. For locations and results of paint sampling see Attachments. Any previously unidentified painted coatings should be considered lead containing until sampled and proven otherwise.

PCBs

Suspect PCB containing equipment such as electrical cooling product or light ballast (electronic) was not observed during PBS’ investigations.

Mercury-Containing Components

Fluorescent lamps may be present on light poles or in the Triangle Garage stairway structure light fixtures. All fluorescent light tubes are presumed to contain mercury vapors.

Silica Containing Materials

Certain building materials including but not limited to concrete slab, wall blocks, mortar and plaster may contain silica. PBS performed visual observations for silica-containing materials. Based on the field observations and the scope of work with wall assembly demolition, the following materials are assumed to contain silica:

- Concrete walls and foundation – Triangle Garage stairway and pedestrian tunnel to Triangle Garage

RECOMMENDATIONS

ACM

No asbestos-containing materials were identified in the project areas inspected.

PBS recommends that any previously unidentified materials revealed during construction activities should be sampled for asbestos content prior to impact. These materials may be buried or internal components of piping systems. Suspect-asbestos flange gaskets or other insulating materials or coatings, or asbestos-cement piping, may be encountered.

In the event that such materials are found to contain asbestos, a qualified Washington State licensed asbestos abatement contractor should be employed to remove them according to applicable local, state and federal regulations.
Lead-Containing Paint (LCP)

Representative painted coatings on light posts, hand rails and steel barrier posts were found to contain lead in detectable concentrations.

Painted coatings may exist in inaccessible areas or in secondary coatings on system components. Any previously unidentified painted coatings should be considered lead containing until sampled and proven otherwise. Impact of any detectable concentrations of lead requires construction activities to be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-155). Workers impacting LCP should be provided the proper personal protective equipment and use proper work methods to limit occupational and environmental exposure to lead until an initial exposure assessment has been conducted.

Mercury-Containing Components

All fluorescent lamps/tubes are presumed to be mercury containing (vapors). Mercury is known to be toxic to mammals and requires special handling and proper disposal, ideally through recycling. PBS recommends that fluorescent light tubes at the site be handled and recycled in accordance with applicable regulations and University policy during construction activities. Clean up of any broken tubes should include proper worker protection and disposal practices.

Silica Containing Materials

Suspect silica-containing materials are assumed to be in the concrete present at the site. Construction activities including but not limited to chipping, sawing and jack hammering require control of potentially airborne silica dust. Impact of these building materials with detectable concentrations of silica shall be performed according to Washington Labor and Industries regulations for Silica in Construction (WAC 296-62-155). Workers impacting these building materials should be provided the proper personal protective equipment and use proper work methods and engineering controls to limit occupational and environmental exposure to silica until an initial exposure assessment has been conducted.

Limitations

PBS’ survey in March 2010 did not involve destructive testing and excavation, drilling or below grade sampling. While PBS has endeavored to identify or presumed the presence and type of ACMs in concealed locations, additional unidentified ACMs may exist. Excavation at the site may uncover suspect materials including asbestos conduits and piping (cement transite pipes), vapor barrier or water proofing membrane, creosote treated lumber and associated potential contaminated soils and regulated metals. Any such material that the project encounter that is not identified in this survey should be sampled and characterize for appropriate disposal when uncovered during excavation and construction.
Report prepared by:

Chuck Greeb  
Project Surveyor, AHERA Building Inspector  
Cert. #105373, expiration 12/30/2010

Willem Mager  
Project Manager, AHERA Building Inspector  
Cert. #10304861, expiration 4/15/2010

Attachments:  
PLM Asbestos Sample Inventory  
AA Lead Paint Sample Inventor
Attachments

PLM Asbestos Sample Inventory
AA Lead Paint Chip Sample Inventory
<table>
<thead>
<tr>
<th>PBS Sample #</th>
<th>Material Type</th>
<th>Sample Location</th>
<th>Laboratory Description</th>
<th>Lab Result</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>40035.453-01</td>
<td>Black Coating, Vapor Barrier</td>
<td>Exterior Concrete Wall at Stair to Garage Layer 1: Gray sandy/powdery material with asphaltic material</td>
<td>NAD SAT</td>
<td>NAD</td>
<td>SAT</td>
</tr>
<tr>
<td>40035.453-02</td>
<td>Caulk between Concrete Seams</td>
<td>Sidewalk above Garage Layer 1: Gray soft/elastic material</td>
<td>NAD SAT</td>
<td>NAD</td>
<td>SAT</td>
</tr>
<tr>
<td>40035.453-03</td>
<td>Stucco (Concrete)</td>
<td>At Pedestrian Tunnel Garage Entrance Layer 1: Gray sandy/brittle material</td>
<td>NAD SAT</td>
<td>NAD</td>
<td>SAT</td>
</tr>
<tr>
<td>40035.453-04</td>
<td>Caulk between Concrete Seams</td>
<td>Stairwell to Garage Layer 1: Off-white soft elastic material</td>
<td>NAD SAT</td>
<td>NAD</td>
<td>SAT</td>
</tr>
</tbody>
</table>
### Project: UW Sound Transit Rainier Vista Pedestrian Landbridge

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Client Sample ID</th>
<th>Layer</th>
<th>Description</th>
<th>Asbestos Fibers</th>
<th>Non-Fibrous Components</th>
<th>% Non-asbestos Fibers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40035.453-01</td>
<td>1</td>
<td>Gray sandy/powdery material with asphalitic material</td>
<td>None detected</td>
<td>Sands, Filler, Asphalt/binder</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>40035.453-02</td>
<td>1</td>
<td>Gray soft/elastic material</td>
<td>None detected</td>
<td>Binder, Filler</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>40035.453-03</td>
<td>1</td>
<td>Gray sandy/brillte material</td>
<td>None detected</td>
<td>Sands, Filler</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>40035.453-04</td>
<td>1</td>
<td>Off-white soft/elastic material</td>
<td>None detected</td>
<td>Binder, Filler</td>
<td>2</td>
</tr>
</tbody>
</table>

**Attn.: Mr. Chuck Greeb/Mr. Willem Mager**  
Client: PBS Engineering and Environmental  
Address: 2517 Eastlake Ave. E., Suite 100  
Seattle, WA 98102

**Client Job #: 40035.453**  
**Laboratory Batch #: 201058021**  
**Date Received: 3/9/2010**  
**Samples Received: 4**  
**Date Analyzed: 3/9/2010**  
**Samples Analyzed: 4**

**Analysis by: Leon Li / Weitong Tai**  
**Report reviewed by: Steve (Fanyao) Zhang, President**
# AA LEAD PAINT CHIP SAMPLE INVENTORY

<table>
<thead>
<tr>
<th>PBS Sample #</th>
<th>Paint Color / Component / Substrate</th>
<th>Sample Location</th>
<th>Results (mg/kg)</th>
<th>Results (%)</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>40035.453 -L01</td>
<td>Green/Metal/Railing</td>
<td>at Burke Gillman Trail</td>
<td>8000.0</td>
<td>0.8000</td>
<td>NVL</td>
</tr>
<tr>
<td>40035.453 -L02</td>
<td>White/Asphalt/Trail</td>
<td>at Burke Gillman Trail</td>
<td>&lt;45.0</td>
<td>&lt;0.0045</td>
<td>NVL</td>
</tr>
<tr>
<td>40035.453 -L03</td>
<td>Gray/Light Pole</td>
<td>West of Trail</td>
<td>17000.0</td>
<td>1.7000</td>
<td>NVL</td>
</tr>
<tr>
<td>40035.453 -L04</td>
<td>Yellow/Metal/Posts</td>
<td>Barrier Posts at Burke Gilman Trail</td>
<td>130000.0</td>
<td>13.0000</td>
<td>NVL</td>
</tr>
</tbody>
</table>

mg/kg = Milligrams per kilogram

< = Less than the Limit of Detection
March 10, 2010

Chuck Greeb
PBS Environmental (Seattle)
2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

RE: Metals Analysis; NVL Batch # 3002883.00

Dear Mr. Greeb,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Examination of these samples was conducted using analytical instruments in accordance to U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Nick Ly, Technical Director

Enclosure:
Client: PBS Environmental (Seattle)
Address: 2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

Attention: Mr. Chuck Greeb
Project Location: UW Rainier Vista Pedestrian Bridge

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Client Sample #</th>
<th>Sample Weight</th>
<th>RL in mg/Kg</th>
<th>Results in mg/Kg</th>
<th>Results in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>30014760</td>
<td>40035.453-L01</td>
<td>0.1970</td>
<td>49.0</td>
<td>8000.0</td>
<td>0.8000</td>
</tr>
<tr>
<td>30014761</td>
<td>40035.453-L02</td>
<td>0.2168</td>
<td>45.0</td>
<td>&lt; 45.0</td>
<td>&lt; 0.0045</td>
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<tr>
<td>30014762</td>
<td>40035.453-L03</td>
<td>0.1041</td>
<td>94.0</td>
<td>17000.0</td>
<td>1.7000</td>
</tr>
<tr>
<td>30014763</td>
<td>40035.453-L04</td>
<td>0.2131</td>
<td>46.0</td>
<td>130000.0</td>
<td>13.0000</td>
</tr>
</tbody>
</table>

Batch #: 3002883.00
Matrix: Paint Chips
Method: EPA 7000B
Client Project #: 40035.453
Date Received: 03/10/2010
Samples Received: 4
Samples Analyzed: 4

Sampled by: Client
Analyzed by: Brittany Vogel
Reviewed by: Nick Ly
Date Analyzed: 03/10/2010
Date Issued: 03/10/2010

mg/Kg = Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
Note: Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.