HAZARDOUS BUILDING MATERIALS SURVEY

Demolition

Commercial Structure
2338 11th Street
Tacoma, Washington

Submitted to:

WSP
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Federal Way, Washington 98003-2600

Prepared by:

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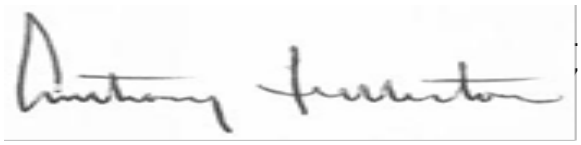

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AHERA BI #169219 Exp. 08/29/2019
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Acronyms

AAS	atomic absorption spectroscopy
ACM	asbestos-containing materials
ACT	acoustical ceiling tile
AHERA	Asbestos Hazard Emergency Response Act
ASHARA	Asbestos Schools Hazard Abatement Reauthorization Act
ASTM	American Society of Testing and Materials
CFC	chlorofluorocarbons
CFR	Code of Federal Regulation
CMU	cement masonry unit
ECD	electron capture detectors
EPA	U.S. Environmental Protection Agency
GC	gas chromatography
GWB	gypsum wallboard
HBM	hazardous building materials
HM	homogeneous material
LBP	lead-based paint
mg/cm^2	milligrams per square centimeter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTNW	Med-Tox Northwest
ND	none detected
NVLAP	National Voluntary Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PLM	polarized light microscopy
ppm	parts per million
PSCAA	Puget Sound Clean Air Agency
RCRA	Resource Conservation and Recovery Act
SAT	Seattle Asbestos Test, LLC
SF	square feet
SVF	sheet vinyl flooring
TCLP	toxicity characteristic leaching procedure
TSI	thermal system insulation
VFT	vinyl floor tile
WAC	Washington Administration Code
WDOC	Washington Department of Commerce
WISHA	Washington Industrial Safety and Health Act
WRD	WISHA Regional Directive
XRF	x-ray fluorescence

% wt.	percent in weight

Survey Summary

On June 26, 2019, Kim Riche, Eric Jarvis and Anthony Fullerton of Med-Tox Northwest (MTNW) conducted a hazardous building materials (HBM) survey of the property located at 2338 11th Street, Tacoma, Washington. This work was conducted on behalf of the Port of Tacoma under subcontract to WSP. The commercial building was occupied the time of the survey.

This report identifies building materials that contain asbestos, estimates the quantity of asbestos-containing material (ACM) present and documents building materials that potentially contain lead-based paint (LBP), polychlorinated biphenyls (PCBs), and other hazardous materials that require removal or management as part of demolition activities. Washington Administrative Code (WAC) 296-155-775 requires identification of asbestos and hazardous materials and their hazards eliminated before demolition is started.

As required by WAC 296-62-077 and Puget Sound Clean Air Agency (PSCAA), a building inspector certified under the Asbestos Hazard Emergency Response Act (AHERA) and employed by MTNW conducted the asbestos portion of the survey. Copies of the inspector's AHERA Building Inspector certificates and Washington State Department of Commerce (WDOC) Lead Inspector/Risk Assessor certificates are included in **Appendix A**.

No previous HBM surveys or as-built construction documents were available as part of the survey.

Building Information

Photographic documentation of the structure and the major systems described herein are provided in **Appendix B**.

General and Structural: The commercial one-story office building was originally constructed in 1919 and is approximately 12,800 square feet (SF) in size. It appears that this structure may have been several separate buildings then over time they were joined together.

The south section of the building which was being utilized as a self-storage facility is two stories and is wood-framed construction with wood siding. The roof over this end of the building is flat and is finished with built up tar and paper with silver coat paint. Most of the building has a wood sub-floor, but the east end was observed to have a concrete floor. The crawlspace for the south side of the building is accessed through and electrical closet. Interior walls consist mainly of painted wood sheeting between the individual storage units. There are areas (restrooms and hallway) which have been finished with textured or un-textured gypsum wallboard (GWB) system. Ceilings

throughout most of this space are wood. The 2nd floor office and storage space is finished with textured GWB and wood paneling. The ceiling is textured GWB.

The north end of the building is occupied by a graphics company and is constructed of cement masonry unit (CMU), brick and concrete. There is a main office area with restroom and storage space, warehouse space, work area, smaller storage rooms and what appears to have been a small apartment or break area in the northeast corner of the building. This space has different finishes than the rest of the building. There is a small kitchen and bathroom located here as well.

The roof over the north section of the building is flat with built-up tar and paper and silver coat finish. Exterior windows are metal framed, and the doors are a combination of solid core wood and metal. Interior walls consist of textured GWB system in the office area, un-textured GWB system in the northeast section and the rest of the building has brick and mortar or CMU walls. Other wall finishes include cove base and mastic, and fiberboard wall panels. There were multiple ceiling finishes observed throughout the space. These include a suspended ceiling with acoustical ceiling tiles (ACT) in a metal t-grid in the office area, the northeast section of the building has fiberboard ceiling panels and the warehouse and work areas have been finished with square pattern GWB. There were several floor finishes observed. These include: carpeting with mastic, painted concrete, sheet vinyl flooring (SVF) and 9-inch vinyl floor tile (VFT).

Heating and Mechanical Systems: The south side of the building is heated with individual space heaters. Hot water for the restroom is generated by an electric hot water heater. All pipes observed were un-insulated. The north side of the building is also heated by ceiling hung space heaters. There are two wall mounted air-conditioning units in the main office. Hot water for the north side of the building is generated by an electric hot water heater located in the office bathroom. All observable pipes were un-insulated.

Asbestos Survey

The AHERA regulation, 40 Code of Federal Regulation (CFR) 763, is the primary governing regulation when performing asbestos surveys. This regulation was originally enacted for school buildings but has since been applied to public and commercial buildings by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) in 1994 and by the Occupational Safety and Health Administration's (OSHA) worker protection regulations in 1995, specifically 29 CFR 1926.1101(k).

PSCAA also requires compliance with AHERA's survey and sampling requirements. This applies to any renovation or demolition activities where suspect ACM may be disturbed. PSCAA is a local agency that receives statutory authority from the U.S. Environmental Protection Agency (EPA) to enforce environmental regulations.

AHERA divides suspect ACM into three categories; “surfacing materials” (i.e., sprayed fireproofing, popcorn ceiling texture, etc.), “thermal system insulation” (TSI) (i.e., pipe or building insulation, etc.), and “miscellaneous materials” (i.e., flooring material, roofing, construction mastics, etc.). The following sections summarize the potential ACMs identified for each of these three categories. For a complete listing of suspect materials sampled, see **Appendix C**. See **Appendix J** for drawings with asbestos, lead and PCB sample and material locations.

The following sections summarize the potential ACMs identified by homogeneous material (HM) description as they relate to each of the AHERA categories and clarify location along with the number of samples collected for regulatory compliance.

Thermal System Insulation

There were three TSI materials observed in the building.

- Batt insulation foil paper black mastic (HM-01). This material was observed inside the exterior wall cavities of the south side of the building. Three samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Batt insulation black paper and mastic (HM-11). This material was observed behind the wall paneling in the second-floor office and storage spaces in the south section of the building. Three samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Fiberglass batt insulation. This material was observed in multiple places throughout the building. This material was visually observed to be non-asbestos containing.

Surfacing Materials

There were three surfacing material observed in the building.

South section

- Heavy orange peel textured GWB system (HM-02). This material was observed in the restrooms and 2nd floor office and storage area. Five samples were collected and analyzed for asbestos content; this material was determined to contain 2% Chrysotile asbestos in one of the samples by polarize light microscopy (PLM) analysis. The sample was re-analyzed by the more stringent 400 Point Count method to contain 0.75% Chrysotile or less than 1% asbestos.
- Rough textured GWB system (HM-03). This material was observed in the hallway. Three samples were collected and analyzed for asbestos content; this material was determined to contain 2% Chrysotile asbestos in all the samples by PLM analysis. The samples were re-analyzed by the

more stringent 400 Point Count method to contain 0.25% to 0.50% Chrysotile or less than 1% asbestos.

North Section

- Orange peel textured GWB system (HM-12). This material was observed in the office area. Three samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.

Miscellaneous Materials

South Section

- Un-textured GWB system (HM-04). This material was observed in the south hallway leading to the stairs. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- 4-inch brown cove base and mastic (HM-05). This material was observed in the restroom. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- 9-inch tan VFT and black mastic (HM-06). This material was observed on the main floor throughout most of the space. Two samples were collected and analyzed for asbestos content; this material was determined to contain 2% Chrysotile asbestos in both the tile and mastic by PLM analysis. The samples were re-analyzed by the more stringent 400 Point Count method to contain 0.50% in the floor tile and 0.25% Chrysotile in the mastic or less than 1% asbestos.
- 12-inch red square pattern self-stick floor tile (HM-07). This material was observed on the floor in the restroom. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Tan/beige floor coating (HM-08). This material was observed on the concrete floor at the east end of the main hallway. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Leveling compound (HM-09). This material was observed on the wood floor in the middle of the hallway. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Carpet mastic (HM-10). This material was observed in the 2nd floor office and storage space. Two samples were collected and analyzed for

asbestos content; this material was determined to be negative for asbestos.

North Section

- Un-textured GWB system (HM-13). This material was observed on walls in the NE section of the building. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Brick mortar (HM-14). This material was observed in the main shop area. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- 2-inch white cove base and mastic (HM-15). This material was observed in the office area. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- 4-inch black cove base and yellow mastic (HM-16). This material was observed in the office area restroom. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- 2-inch brown cove base and orange mastic (HM-17). This material was observed in the office area storage area. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- **Brown/ yellow terrazzo pattern SVF (HM-18) over off-white floor tile and mastic (HM-19).** This material was identified in the office restroom and back storage area. Four samples were collected (HM-18), three were cores that included the bottom layer of off-white floor tile and mastic (HM-19). The samples were analyzed for asbestos content; **the brown/ yellow terrazzo pattern SVF (HM-18) was determined to contain 46% to 50% Chrysotile asbestos and the off-white floor tile (HM-19) was determined to contain 2% Chrysotile asbestos.** The associated floor tile mastic is negative for asbestos.
- **9-inch brown VFT and black mastic (HM-20).** This material was identified in the NE section of the building. Two samples were collected and analyzed for asbestos content; **the tile was determined to contain 2% Chrysotile asbestos and the black mastic 3% Chrysotile asbestos**.
- 4-inch square pattern GWB panels (HM-21). This material was observed in the shop area. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.

- 2-x 4-foot ACT (HM-22). This material was observed in the office area. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Fiberboard ceiling panel (HM-23). This material was observed on the ceiling on the NE section of the building. Two samples were collected and analyzed for asbestos content; this material was determined to contain 2% Chrysotile asbestos by PLM analysis. The samples were re-analyzed by the more stringent 400 Point Count method to contain 0.50% to 0.75% Chrysotile or less than 1% asbestos.
- Window glaze (HM-24). This material was observed on the shop area south side windows. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- White wall caulk (HM-25). There is small built-out section on the east end of the main shop. The build out is constructed with metal, this material was observed on the seams where in abuts the original perimeter wall. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- CMU mortar and paint coating (HM-26). This material was observed on the exterior of the building. Three samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.
- Window frame caulk (HM-27). This material was observed around the exterior windows of the main office area. Two samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.

Roof

- Silver coat paint (HM-28) and built-up roofing (HM29) cores. This material was observed on all roofs of the building. Three core samples (one from the south section, one form the center and one from the north section) and an additional 3 samples (total of 6) of just the silver coat paint were collected and analyzed for asbestos content; these materials were determined to be negative for asbestos.
- Black roof sealant (HM-30). This material was observed on the roof. Three samples were collected and analyzed for asbestos content; this material was determined to be negative for asbestos.

Table 1 summarizes ACM identified in the structure surveyed by MTNW.

Table 1. Summary of Asbestos-Containing Materials

Material	Location	Friable	Quantity
Brown /yellow terrazzo pattern SVF (HM-18)	North section main office area restroom and storage room	Yes	280 SF
Off-white floor tile (HM-19)	North section main office area restroom and storage room	No	Included with HM-18
9-inch brown VFT and black mastic (HM-20)	NE section	No	720 SF

SF= square feet. Note: This table is not to be used without the complete survey document including appendices for additional information.

Table 2 lists all suspect materials sampled that have been determined to be non-asbestos containing.

Table 2. Summary of Suspect Materials Determined Non-Asbestos Containing

Material Location	Material Description
South Section	
Exterior walls	Batt insulation foil paper black mastic
South hallway to stairs	Un-textured GWB system
Restroom	4-inch brown cove base and mastic
Restroom	12-inch red square pattern self-stick floor tile
East end of hall	Tan/beige floor coating
Center of hall	Leveling compound
2nd floor	Carpet mastic
2nd floor	Batt insulation black paper and mastic
North Section	
Office area	Orange peel textured GWB system
NE section	Un-textured GWB system
Main shop area	Brick mortar
Office area	2-inch white cove base and mastic
Office area restroom	4-inch black cove base and yellow mastic

Material Location	Material Description
Office area storage	2-inch brown cove base and orange mastic
Shop area	4-inch square pattern GWB panels
Office area	2-x 4-foot ACT
Shop area	Window glaze
Shop area	White wall caulk
Exterior	CMU mortar and paint coating
Exterior	Window frame caulk
Roof	
All roofs	Silver coat paint
All roofs	Built-up roofing
All roofs	Black roof sealant

Note: This table is not to be used without the complete survey document including appendices for additional information.

Table 3 lists all suspect materials sampled that have been determined to be <1% asbestos-containing.

Table 3. Summary of Suspect Materials Determined <1% Asbestos

Material	Location
Heavy orange peel textured GWB	South section restrooms and 2nd floor
Rough textured GWB system	South section hallway
9-inch tan VFT and black mastic	South section
Fiberboard ceiling	North section- NE

Note: This table is not to be used without the complete survey document including appendices for additional information.

The materials identified in **Table 3** were found to contain less than 1% Chrysotile asbestos. Materials with asbestos content less than 1% will require special handling during removal and/or demolition as detailed in Washington Industrial Safety and Health Act (WISHA) Regional Directive (WRD) 23.10, *Occupational Exposure to Asbestos*.

Lead-Based Paint Summary

Lead was commonly used in most paint products until 1978, when it was banned from residential paints at concentrations greater than 600 parts per million (ppm); however, commercial applications with lead are still utilized and available. Lead is poisonous to the human body and presents a potential health hazard during any kind of disturbance (such as maintenance, including grinding, welding, and cutting) and if improperly disposed, where lead can enter drinking water supplies.

EPA defines LBP as a concentration of 1.0 milligrams per centimeter squared (mg/cm^2) or greater by x-ray fluorescence (XRF) or 0.5 percent by weight (% wt.) or greater by total lead analysis; equivalent to 5,000 milligrams per kilogram (mg/kg). This EPA action level triggers requirements for protection of the environment, maintenance workers, and building occupants in child occupied facilities as defined by 40 CFR 745. Additionally, building components exceeding EPA lead levels may cause demolition waste streams to fail waste designation sampling performed for compliance with WAC 173-303 Dangerous Waste Regulations.

WISHA worker protection regulations have not defined a minimum concentration for regulating lead and has clarified that lead at any detectable concentration shall be considered regulated by WAC 296-155-176, Lead. Paint sample results can be expressed in mg/kg (same as ppm), % wt. or mg/cm^2 by area depending on the type of analytical methods used. Any positive result, regardless of the reporting method by the laboratory, will require compliance with WAC 296-155-176.

Lead in Painted Surfaces

Interior and exterior painted surfaces were tested for LBP using bulk sample collection and chemical analysis. A total of 14 paint chip samples were collected. Analytical results are provided in **Table 4**.

Table 4. Summary of Bulk Paint Chip Sample Results

Sample Number	Location	Component	Substrate	Color	Result (ppm*)
8842.1-2338-01Pb	Hallway	Door frame	Wood	Black	<110
8842.1-2338-02Pb	Restrooms	Wall	GWB	White	**1,200**
8842.1-2338-03Pb	Hallway	Ceiling	Wood	White	**3,300**
8842.1-2338-04Pb	Hallway	Wall	Wood	White	<86
8842.1-2338-05Pb	Exterior	Siding	Wood	Gray	**5,800**
8842.1-2338-06Pb	Hallway- east end	Floor	Concrete	Beige/tan	**190**
8842.1-2338-07Pb	Shop area-north	Wall	CMU	Light green	**260**

Sample Number	Location	Component	Substrate	Color	Result (ppm*)
8842.1-2338-08Pb	Back shop area	Wall	GWB	Black	<170
8842.1-2338-09Pb	Back shop area- center	Wall	GWB	Beige	**5,700**
8842.1-2338-10Pb	Back shop area interior	Wall	Brick	Light green	**8,600**
8842.1-2338-11Pb	NE section	Wall	GWB	Off white	**2,200**
8842.1-2338-12Pb	Exterior-north	Wall	Concrete	Gray	**26,000**
8842.1-2338-13Pb	Exterior north	Wall	Wood	Gray	**9,200**
8842.1-2338-14Pb	Exterior east	Wall	CMU	Gray	**350**

Ppm= parts per million. CMU = cement masonry unit, GWB = gypsum wallboard. **Bolded values** – bulk paint chip samples with lead detected above the laboratory reporting limit have been bolded. The WISHA worker protection regulations have stated that lead at any detectable concentration shall be considered regulated WAC 296-155-176, Lead. Do not use this table without the complete survey document.

Waste Designation Survey

Waste designation sampling has been performed for the building demolition, including Toxicity Characterization Leaching Procedure (TCLP) analytical sampling of affected building components. The TCLP procedure is used to simulate the transfer of lead from lead-containing waste into the ground water system upon co-disposal of the lead-containing waste and municipal solid waste in unlined solid waste landfills. The TCLP attempts to simulate rain or ground water leaching, or both, of lead from the buried waste. In order for the procedure to yield an accurate predictor of the subsurface (in-ground) leaching process, a representative sample of the volume of the waste must be selected and submitted for leaching and analysis. The result of the sampling, leaching, and analysis process is used to determine the waste handling and disposal protocols to be followed and to document compliance with applicable laws, regulations, and requirements. WAC 173-303 Dangerous Waste Regulations defines hazardous waste as it relates to lead by toxicity as 5.0 milligrams per Liter (mg/L) by TCLP.

A visual inspection of the survey area was conducted to separate the major components of the structures to be demolished into the following categories:

- **Recyclables**. It is anticipated that many of the metal items (i.e., metal piping, tanks, door frames, doors, handrails, flashing, aluminum window frames, etc.) and un-painted clean concrete materials in the survey area will be recycled or reused. These items were not tested for waste pre-designation. Additionally, glass is recyclable and not included in the waste designation survey.

- **Potential Wastes**. Items that are not likely to be recycled were sampled and tested for waste pre-designation. Samples of other building finish materials likely to be landfill disposed were collected, composited and submitted for TCLP testing.

- **Assumed hazardous waste**. None.

One composited sample was collected from the site and tested by TCLP analysis for Resource Conservation and Recovery Act (RCRA) metal – lead. The result for the sample is presented in **Table 5**:

Table 5. Summary of TCLP Sample Results

Sample	Location and Composition	Result (mg/L)
8842.1-2338-01TCLP	Painted and unpainted building components including concrete slab	<0.40

mg/L = milligrams per liter. Note: Do not use this table without the complete survey document.

The TCLP sample collected from the building was determined to have leachable lead less than the regulated level of 5.0 mg/L. Demolition waste from this structure can be disposed of as general construction debris.

Other Hazardous Building Materials

Chlorofluorocarbons

MTNW inspected the building for cooling systems with potential chlorofluorocarbons (CFCs). There were two wall units observed.

PCB Light Ballasts and Fluorescent Light Tubes

Older fluorescent light ballasts have small capacitors that may contain high concentrations of PCBs. Nearly all ballasts manufactured before 1979 contain PCBs. All ballasts manufactured after July 1, 1978 that do not contain PCBs are required to be clearly marked "No PCBs". Unmarked ballasts or ballasts without a date code should be assumed to be PCB ballasts. PCBs are toxic chemicals according to the EPA. While there is only a small amount, about one ounce, of PCBs in each light ballast capacitor, there are a large number of ballasts in the United States. A "No PCB" label means there are less than 50 ppm PCBs however, in the state of Washington PCB in oils are regulated at 2 ppm (WAC 173-303-9904).

There were fluorescent light fixtures observed in the residence. In addition, smoke detectors and lighted exit signs may be regulated as universal or hazardous waste and will require dismantling and special handling. **Table 6** provides a summary of these items in the building:

Table 6. Summary of Fluorescent Lights, Exit Signs and Smoke Detectors

Location/floor	8-foot, 2-bulb	4-foot, 4-bulb	4-foot, 2-bulb	Exit signs	Smoke detectors
Throughout	44	19	80	5	12
Total	**44**	**19**	**80**	**5**	**12**

Do not use this table without the complete survey document.

Typically, there is one ballast for every two-light tubes in a fluorescent light fixture; accordingly, there are 140 ballasts in the light fixture requiring recycling or PCB hazardous waste disposal. There are also 236, 4-foot light and 88, 8-foot light tubes that will need to be recycled during demolition.

PCB in Caulking and Paint

PCBs were used in paint and caulk formulations as drying oils (resins) and plasticizers or softening agents (liquids). Wood, concrete, gypsum wallboard and metal may have painted surfaces containing PCBs.

PCBs were tested in representative paints on the interior and exterior of the building. **Table 7** below provides a summary of PCB sample results.

Table 7. Summary of PCB Sample Results

Sample Number	Location	Material	Result (mg/kg*)
8842.1-2338-01PCB	Exterior- south side self-storage	Gray paint on wood siding	ND
8842.1-2338-02PCB	Exterior- north shop	Gray paint on concrete wall	2.1 (Aroclor 1254)
8842.1-2338-03PCB	Exterior- east side	Gray paint on CMU wall	ND
8842.1-2338-04PCB	Interior north side	Light green on CMU	ND

*mg/kg= milligrams per kilogram, ND= none detected. PCB-containing waste in demolition debris cannot be recycled. It may go to a subtitle D landfill. Profiling and special transport requirements apply.

Mercury Containing Switches

Heating system thermostats were investigated for mercury containing systems. There were no mercury-containing thermostats observed.

Laboratory Analytical Methods

Asbestos-Containing Materials

Bulk samples were analyzed by PLM dispersion staining EPA Method 600/R-93/116 by Seattle Asbestos Test, LLC (SAT). SAT is accredited through the National Voluntary Laboratory Accreditation Program (NVLAP) of the U. S. Department of Commerce. This accreditation does not constitute endorsement, but rather a finding of laboratory competence. The NVLAP participant number for SAT is 200768-0 (certification copies are located in **Appendix D**). Analytical results are in **Appendix E**.

Lead-Based Paint

Bulk paint chip samples were submitted to EMSL Analytical, Inc. for analysis using atomic absorption spectroscopy (AAS) to determine the presence and percentage of lead. Procedures for analyzing metals are found in the American Society of Testing and Materials (ASTM) D-3335-78 and EPA Method Manual SW-846, Method 6010. EMSL used SW 846-7000B, an equivalent analytical method.

One TCLP sample was also collected and submitted to EMSL Analytical, Inc. for analysis using AAS. The extraction of the TCLP sample was performed using SW846-1311/7000B/SM 3111B.

Analytical results for paint chip results are provided in **Appendix F**. EMSL Analytical, Inc., laboratory certification is attached in **Appendix G**.

PCBs

Bulk PCB samples were submitted to On-Site Environmental, Inc., for analysis using gas chromatography (GC) equipped with electron capture detectors (ECD). Samples were analyzed using EPA Method SW-846 8082A. Analytical results are provided in **Appendix H**. On-Site Environmental, Inc. laboratory certification is attached in **Appendix I**.

A sample location drawing is provided in **Appendix J**.

Comments and Recommendations

Asbestos-Containing Materials

MTNW recommends, and state law requires, that all asbestos materials identified in **Table 1** be removed prior to demolition.

MTNW recommends that this survey report be placed on-site during renovation and/or demolition and copies provided to the contractor(s) bidding and performing work. WISHA, OSHA and PSCAA require that the report be on-site and available for review during the entire project duration.

This building was occupied at the time of the survey. Limited destructive investigation was conducted; however, additional destructive investigation will be required prior to demolition.

1. All interior pipes observed were bare of insulation, so it is not anticipated that hidden pipes will be insulated. During the course of demolition, if pipe or pipe fitting insulation suspected of containing ACM is made visible, the material must be sampled by an AHERA building inspector prior to being disturbed.

2. Prior to demolition, additional destructive investigation inside wall and ceiling cavities should be conducted to determine if any additional suspect ACM exists. If additional materials are found they should be sampled by an AHERA building inspector and analyzed by a NVLAP accredited lab.
3. Electrical systems were not sampled due to power being live. Sample and verify that asbestos is not present prior to building demolition.
4. The doors to the structure did not appear to be fire doors with suspect asbestos content. Prior to any activity that will impact the doors, drill into the doors and door frames to determine if suspect fire protection is located inside.

The materials identified in **Table 3** were found to contain less than 1% Chrysotile asbestos. Materials in this report with asbestos content less than 1% will require special handling during removal and/or demolition as detailed in WRD 23.10, *Occupational Exposure to Asbestos*. A copy of this directive is available at:

http://www.lni.wa.gov/safety/rules/policies/pdfs/wrd2310.pdf

29 CFR 1926.1101/WAC 296-65 requires ACM be removed by trained and licensed contractors using certified asbestos abatement workers and supervisors (except for deregulated roofing sealants, mastics, and coatings). A 10-day prior notification is also required before abatement can begin. In addition, PSCAA requires notification and fees prior to beginning removal of friable ACM.

MTNW recommends third party oversight of asbestos abatement and renovation activities by an AHERA accredited building inspector to ensure regulatory compliance and completion of the additional destructive methods recommended herein.

Lead-Based Paint

For lead, any percentage of lead in the material should be an assumed risk to human health. All painted surfaces should be assumed to contain at least trace levels of lead in paint, therefore requiring compliance with WAC 296-155-176 during any disturbance of painted surfaces. The WISHA criteria are used to determine if materials are hazardous during a demolition.

Disposal options under WAC 173-303 are also determined by whether the material contains lead. The TCLP sample collected was determined to be less than the regulated level of 5.0 mg/l. Demolition waste from site can be disposed of as general construction debris.

PCB

There was paint that were determined to contain PCB's. PCB-containing waste in demolition debris cannot be recycled. It may go to a subtitle D landfill. Profiling and special transport requirements (i.e., lined containers) may apply.

Work procedures for proper removal and protection of workers should be provided to contractors in accordance with WAC 296-155 and WAC 296-841. This includes Hazardous Communications training as it pertains to PCB's considered a remediation waste.

During demolition, the asbestos abatement contractor should be tasked with dismantling light fixtures, collecting all lighting ballasts for proper disposal, and recycling the light tubes. Ballasts without "No-PCB" labels are considered PCB-containing and must be disposed as a hazardous waste. "No-PCB" ballasts may designate as Washington Dangerous Waste and should be sent to an EPA licensed facility for proper disposal.

Other Hazardous Building Materials

Fluorescent light tubes contain mercury and can be recycled as a universal waste for minimal cost. Smoke detectors and exit signs also should be collected/recycled as a universal waste. Cooling units with suspect CFC's should be drained and fluid recycled prior to demolition.

Limitations

A good faith effort has been made to identify ACM, LBP and other HBM in preparation for building demolition. This survey was performed for complete demolition of the building. Additional destructive investigation and sampling will be required depending on inaccessible building systems including mechanical spaces and/or mechanical/electrical system routing.

Sampling was performed consistent with the level of care and skill ordinarily exercised by professionals currently practicing under similar conditions in the area. No other warranty, expressed or implied, is made.

This report has been prepared for the exclusive use of WSP and Port of Tacoma and its' designates for this project only. The analyses, conclusions, and recommendations presented in this report are based on conditions encountered at the time of our survey and our experience and judgment. MTNW cannot be held responsible for interpretation by others of the data contained in this report; any use of this report shall include the entire document. This survey is not intended for use as abatement plans and/or specifications which MTNW recommends for regulatory compliance.

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Appendix A
AHERA Building Inspector and WDOC Lead Inspector/Risk Assessor Certificates

Certificate of Completion

This is to certify that

Anthony L. Fullerton

has satisfactorily completed
4 hours of refresher training as an

Asbestos Building Inspector

to comply with the training requirements of
TSCA Title II / 40 CFR 763 (AHERA)

Certificate #
158703

Instructor
EPA Provider Certificate #1085

ARGUS PACIFIC
TRAINING • CONSULTING
A Terracon COMPANY

Sep 7, 2016
Date(s) of Training
Exam Score: NA
Expiration Date: Sep 7, 2017

ARGUS PACIFIC, INC / 1900 WEST NICKERSON ST, SUITE 315 / SEATTLE, WASHINGTON 98119 / 206.285.3373 / ARGUSPACIFIC.COM

STATE OF WASHINGTON

Department of Commerce

Lead-Based Paint Abatement Program

Anthony L Fullerton

Has fulfilled the certification requirements of
WAC 365-230
and has been certified to conduct lead-based paint activities as a
Risk Assessor

Certification #	Issuance Date	Expiration Date
0242	05/25/2017	04/03/2020

Certificate of Completion

This is to certify that

Eric T. Jarvis

has satisfactorily completed
24 hours of training as an

AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

169779
Certificate Number

ARGUS PACIFIC
TRAINING • CONSULTING
A Terracon COMPANY

Oct 15 - 17, 2018 Expires in 1 year.
Date(s) of Training

Exam Score: 88%
If appropriate:

Instructor

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM

STATE OF WASHINGTON

Department of Commerce

Lead-Based Paint Abatement Program

Kimberly D Riche

Has fulfilled the certification requirements of WAC 365-230 and has been certified to conduct lead-based paint activities as a

Risk Assessor

Certification #	Issuance Date	Expiration Date
6702	07/09/2019	07/09/2022

Certificate of Completion

This is to certify that

Kimberly D. Riche

has satisfactorily completed
4 hours of refresher training as an

AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

173932
Certificate Number

Instructor

ARGUS PACIFIC
TRAINING • CONSULTING
A Terracon COMPANY

Jul 9, 2019 — Expires in 1 year.
Date(s) of Training

Exam Score: N/A
(if applicable)

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM

Appendix B
Building and Building System Photographic Documentation

Photo 1: South side of the building facing northwest. This is the south section with 2nd floor storage and office area.

Photo 2: East side of the building facing northwest.

Photo 3: East side of the building facing north.

Photo 4: Main entrance to the north section.

Photo 5: West side of the building facing southeast. This is the front entry to the south section.

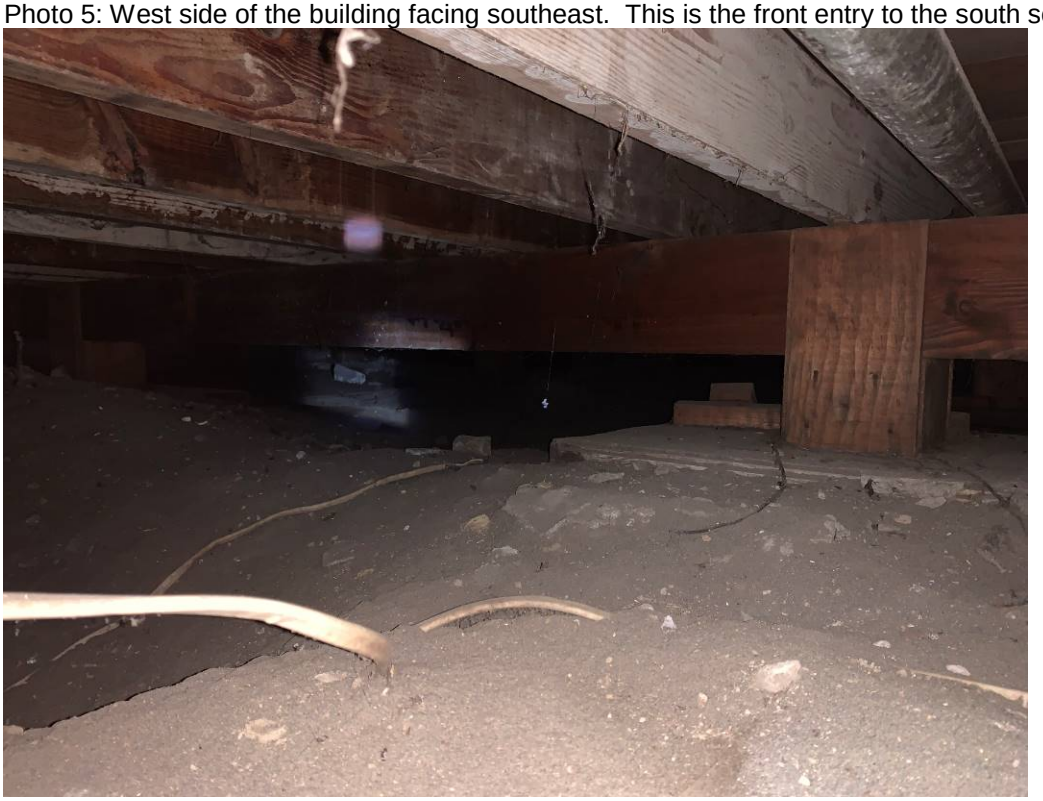
Photo 6: Typical finishes observed in the crawlspace under the south section.

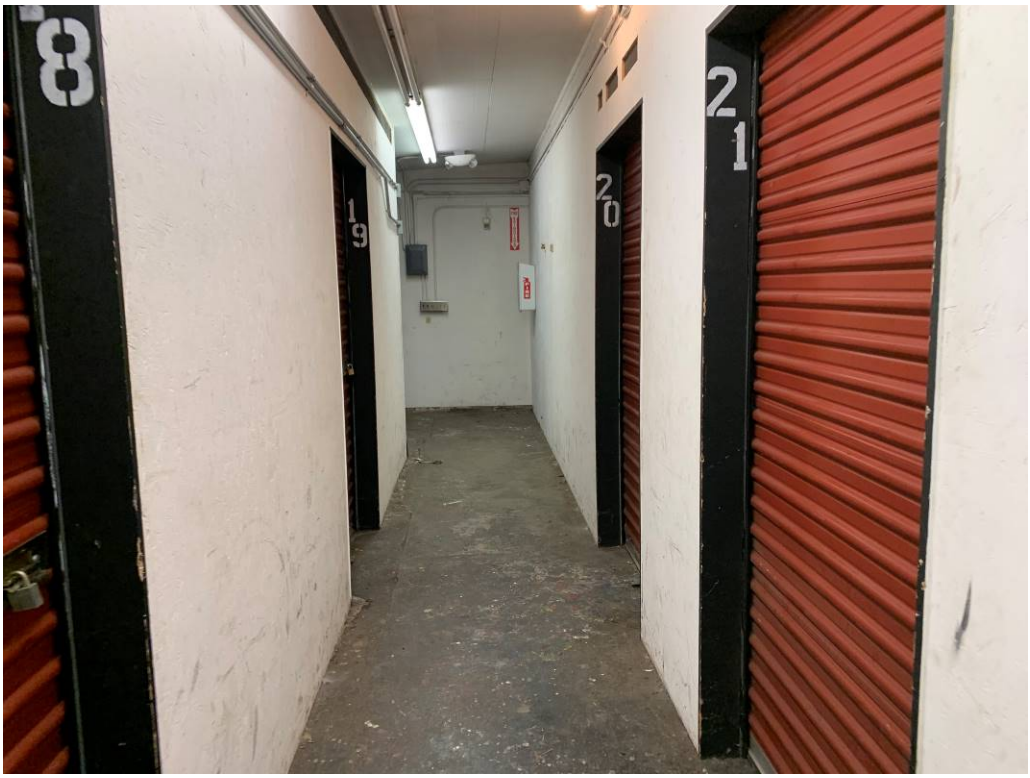

Photo 7: Typical finishes observed in the storage units. The floor tile and mastic are less than 1% asbestos.

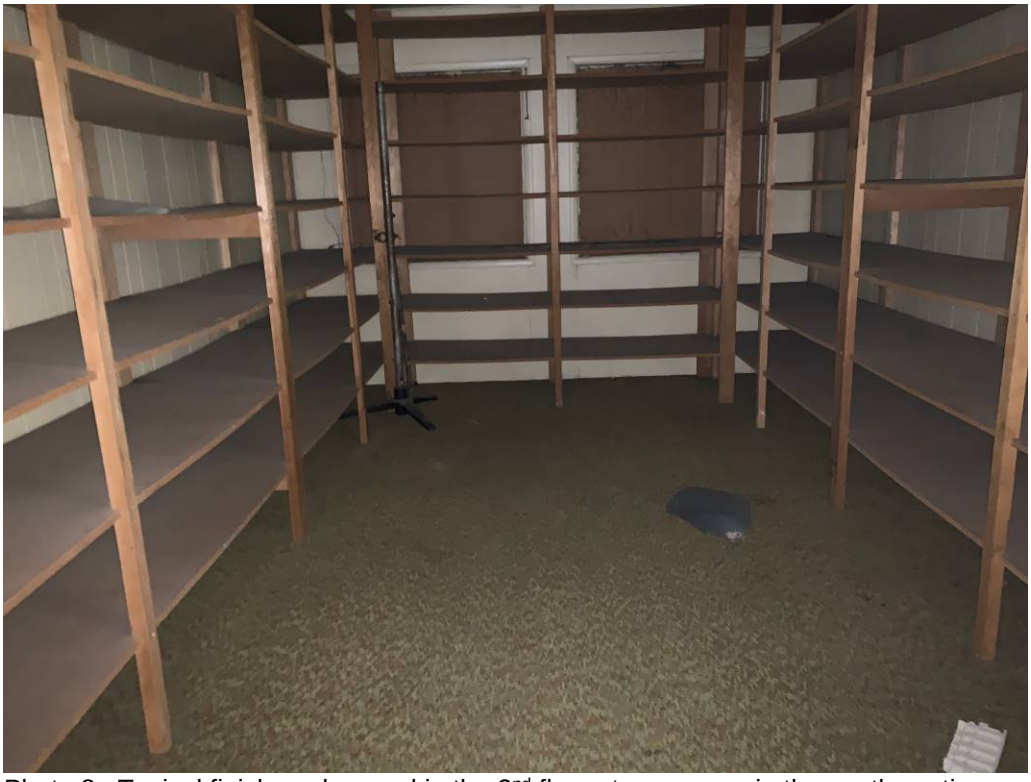
Photo 8: Typical finishes observed in the 2nd floor storage area in the south section.

Photo 9: Typical finishes observed in the 2nd floor office area of the south section.

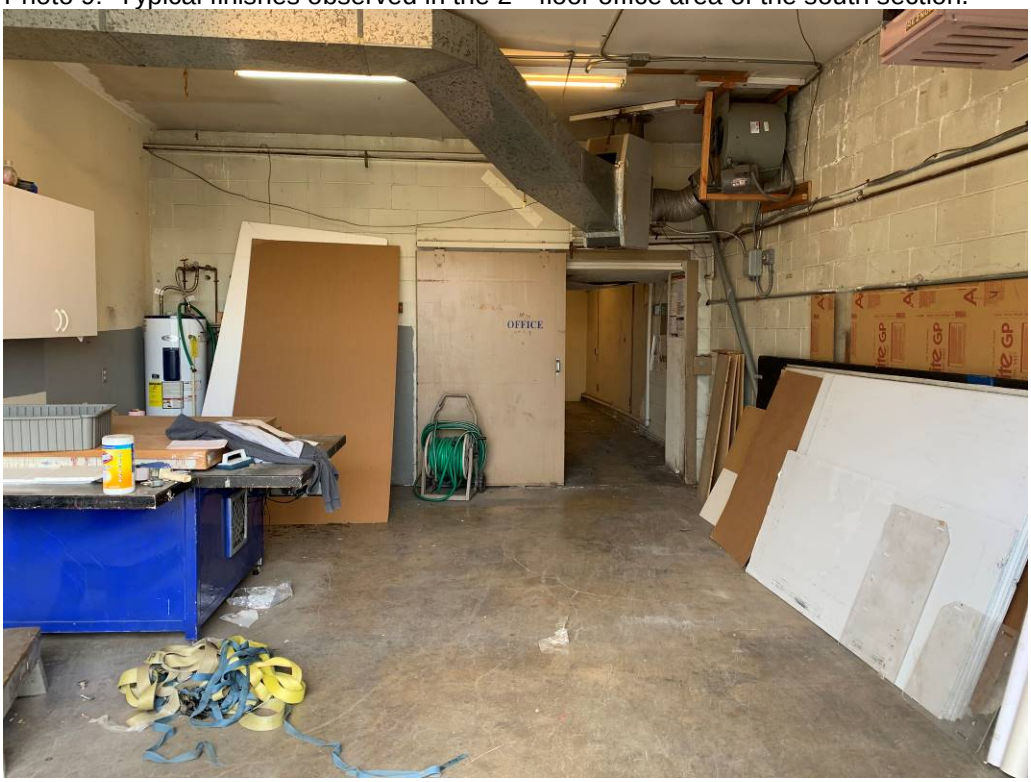

Photo 10: Shipping area in the north section.

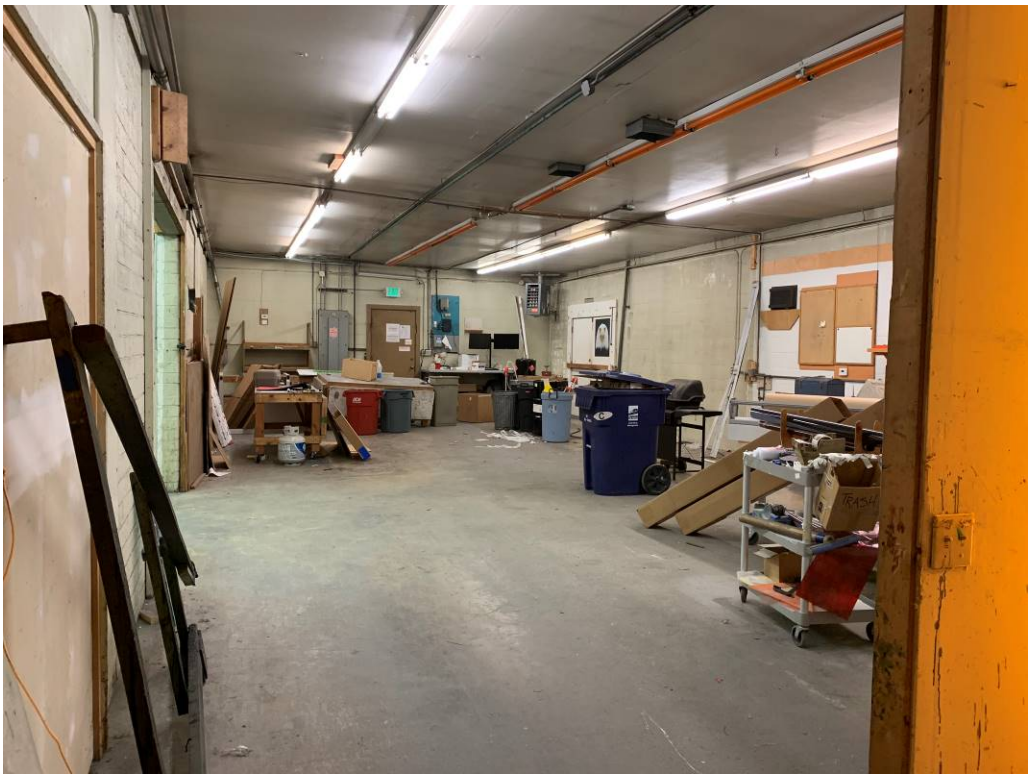

Photo 11: Typical finishes observed in the warehouse area of the north section.

Photo 12: Typical finishes observed in the north section front office area.

Photo 13: ACM flooring in the office restroom and storage area.

Photo 14: Hot water heater located in the office restroom.

Photo 15: NE corner of the north section of the building the floor tile and mastic is ACM.

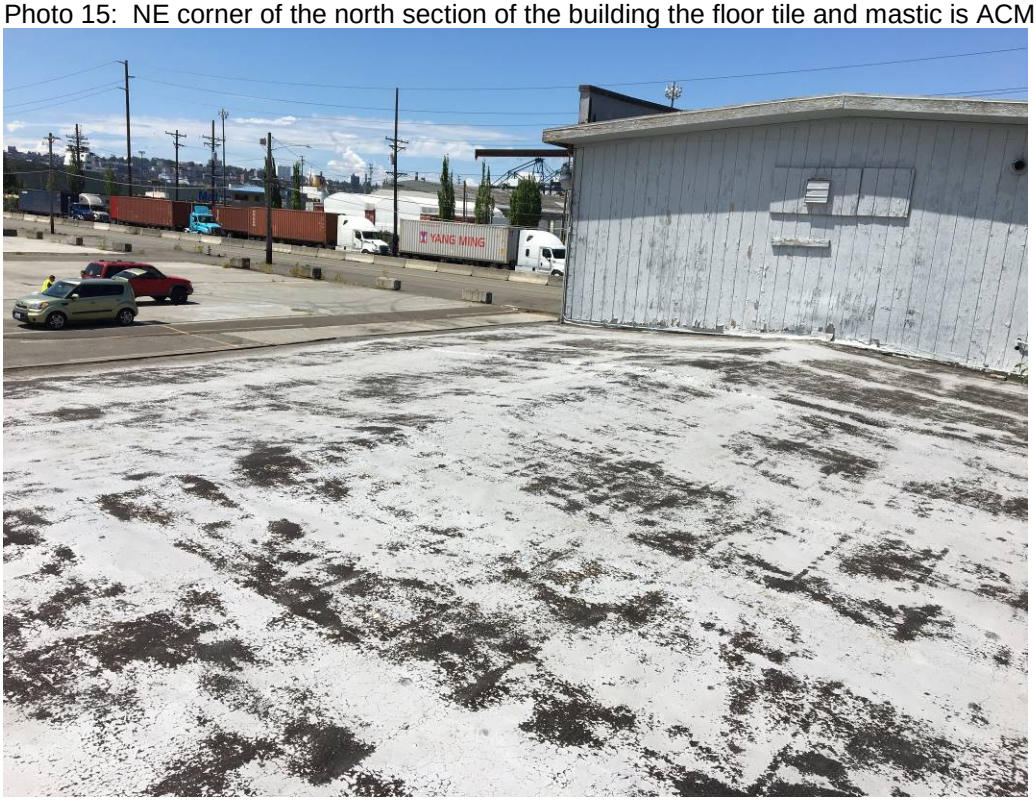

Photo 16: Typical finishes observed in the roofs

Appendix C
Summary of Materials Sampled for Asbestos

Table 1. Summary of Materials Sampled for Asbestos

Sample	Material	Location	AHERA Type	HM	Result
2338 11th Street					
South Section					
8842.1-2338-01	Batt insulation foil paper black mastic	Exterior walls	TSI	01	ND
8842.1-2338-02	Batt insulation foil paper black mastic	Exterior walls	TSI	01	ND
8842.1-2338-03	Batt insulation foil paper black mastic	Exterior walls	TSI	01	ND
8842.1-2338-04	Heavy orange peel textured GWB system	Restrooms	Surfacing	02	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.75% CHR or less than 1% asbestos Layer 2: ND
8842.1-2338-05	Heavy orange peel textured GWB system	Restrooms	Surfacing	02	ND
8842.1-2338-06	Heavy orange peel textured GWB system	2nd floor	Surfacing	02	ND
8842.1-2338-07	Heavy orange peel textured GWB system	2nd floor	Surfacing	02	ND
8842.1-2338-08	Heavy orange peel textured GWB system	2nd floor	Surfacing	02	ND
8842.1-2338-09	Rough textured GWB system	hallway	Surfacing	03	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.50% CHR or less than 1% asbestos Layer 2: ND
8842.1-2338-10	Rough textured GWB system	hallway	Surfacing	03	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.50% CHR or less than 1% asbestos Layer 2: ND
8842.1-2338-11	Rough textured GWB system	hallway	Surfacing	03	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.25% CHR or less than 1% asbestos Layer 2: 2% CHR Re-analyzed by 400 PC to contain 0.50% CHR or less than 1% asbestos Layer 3: ND
8842.1-2338-12	Un-textured GWB system	South hallway to stairs	Misc.	04	ND
8842.1-2338-13	Un-textured GWB system	South hallway to stairs	Misc.	04	ND

Sample	Material	Location	AHERA Type	HM	Result
8842.1-2338-14	4-inch brown cove base and mastic	Restroom	Misc.	05	ND
8842.1-2338-15	4-inch brown cove base and mastic	Restroom	Misc.	05	ND
8842.1-2338-16	9-inch tan VFT and black mastic	Main floor	Misc.	06	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.50% CHR or less than 1% asbestos Layer 2: 2% CHR Re-analyzed by 400 PC to contain 0.25% CHR or less than 1% asbestos
8842.1-2338-17	9-inch tan VFT and black mastic	Main floor	Misc.	06	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.50% CHR or less than 1% asbestos Layer 2: 2% CHR Re-analyzed by 400 PC to contain 0.25% CHR or less than 1% asbestos
8842.1-2338-18	12-inch red square pattern self-stick floor tile	Restroom	Misc.	07	ND
8842.1-2338-19	12-inch red square pattern self-stick floor tile	Restroom	Misc.	07	ND
8842.1-2338-20	Tan/beige floor coating	East end of hall	Misc.	08	ND
8842.1-2338-21	Tan/beige floor coating	East end of hall	Misc.	08	ND
8842.1-2338-22	Leveling compound	Center of hall	Misc.	09	ND
8842.1-2338-23	Leveling compound	Center of hall	Misc.	09	ND
8842.1-2338-24	Carpet mastic	2nd floor office	Misc.	10	ND
8842.1-2338-25	Carpet mastic	2nd floor office	Misc.	10	ND
8842.1-2338-26	Batt insulation black paper and mastic	2nd floor office walls behind paneling	TSI	11	ND
8842.1-2338-27	Batt insulation black paper and mastic	2nd floor office walls behind paneling	TSI	11	ND
8842.1-2338-28	Batt insulation black paper and mastic	2nd floor office walls behind paneling	TSI	11	ND
North Section					
8842.1-2338-29	Orange peel textured GWB system	Office area	Surfacing	12	ND

Sample	Material	Location	AHERA Type	HM	Result
8842.1-2338-30	Orange peel textured GWB system	Office area	Surfacing	12	ND
8842.1-2338-31	Orange peel textured GWB system	Office area	Surfacing	12	ND
8842.1-2338-32	Un-textured GWB system	NE section main shop	Misc.	13	ND
8842.1-2338-33	Un-textured GWB system	NE section main shop	Misc.	13	ND
8842.1-2338-34	Brick mortar	Main shop area	Misc.	14	ND
8842.1-2338-35	Brick mortar	Main shop area	Misc.	14	ND
8842.1-2338-36	2-inch white cove base and mastic	Office area	Misc.	15	ND
8842.1-2338-37	2-inch white cove base and mastic	Office area	Misc.	15	ND
8842.1-2338-38	4-inch black cove base and yellow mastic	Office area restroom	Misc.	16	ND
8842.1-2338-39	4-inch black cove base and yellow mastic	Office area restroom	Misc.	16	ND
8842.1-2338-40	2-inch brown cove base and orange mastic	Office area back storage	Misc.	17	ND
8842.1-2338-41	2-inch brown cove base and orange mastic	Office area back storage	Misc.	17	ND
8842.1-2338-42	**Brown/yellow terrazzo pattern SVF- top layer**	**Office area restroom and back storage area**	**Misc.**	**18**	**Layer 1: ND Layer 2: 48% CHR**
8842.1-2338-43	**Brown/yellow terrazzo pattern SVF- top layer Off-white floor tile and mastic- bottom layer**	**Office area restroom and back storage area**	**Misc.**	**18/19**	**Layer 1: ND Layer 2: 50% CHR Layer 3: 2% CHR Layer 4: ND**
8842.1-2338-44	**Brown/yellow terrazzo pattern SVF- top layer Off-white floor tile and mastic- bottom layer**	**Office area restroom and back storage area**	**Misc.**	**18/19**	**Layer 1: 46% CHR Layer 2: 2% CHR Layer 3: ND Layer 4: ND**

Sample	Material	Location	AHERA Type	HM	Result
8842.1-2338-45	**Brown/yellow terrazzo pattern SVF- top layer Off-white floor tile and mastic- bottom layer**	**Office area restroom and back storage area**	**Misc.**	**18/19**	**Layer 1: 48% CHR Layer 2: 2% CHR Layer 3: ND Layer 4: ND**
8842.1-2338-46	9-inch brown VFT and black mastic	NE section	Misc.	20	**Layer 1: 2% CHR Layer 2: 3% CHR**
8842.1-2338-47	9-inch brown VFT and black mastic	NE section	Misc.	20	**Layer 1: 2% CHR Layer 2: 3% CHR**
8842.1-2338-48	4-inch square pattern GWB panels	Shop area ceiling	Misc.	21	ND
8842.1-2338-49	4-inch square pattern GWB panels	Shop area ceiling	Misc.	21	ND
8842.1-2338-50	2-x 4-foot ACT	Office area	Misc.	22	ND
8842.1-2338-51	2-x 4-foot ACT	Office area	Misc.	22	ND
8842.1-2338-52	Fiberboard ceiling panel	NE section	Misc.	23	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.50% CHR or less than 1% asbestos Layer 2: ND
8842.1-2338-53	Fiberboard ceiling panel	NE section	Misc.	23	Layer 1: 2% CHR Re-analyzed by 400 PC to contain 0.75% CHR or less than 1% asbestos Layer 2: ND
8842.1-2338-54	Window glaze	Shop area-south side	Misc.	24	ND
8842.1-2338-55	Window glaze	Shop area-south side	Misc.	24	ND
8842.1-2338-56	White wall caulk	Shop area metal framed build-out	Misc.	25	ND
8842.1-2338-57	White wall caulk	Shop area metal framed build-out	Misc.	25	ND
8842.1-2338-58	CMU mortar and paint coating	Exterior- east	Misc.	26	ND
8842.1-2338-59	CMU mortar and paint coating	Exterior- east	Misc.	26	ND
8842.1-2338-60	CMU mortar and paint coating	Exterior- north	Misc.	26	ND
8842.1-2338-61	Window frame caulk	Office exterior windows	Misc.	27	ND
8842.1-2338-62	Window frame caulk	Office exterior windows	Misc.	27	ND

Sample	Material	Location	AHERA Type	HM	Result
Roof					
8842.1-2338-63	Silver coat paint (HM-28) and built-up roofing (HM-29)	South section (over self-storage)	Misc.	28/29	ND
8842.1-2338-64	Silver coat paint (HM-28) and built-up roofing (HM-29)	Center section-west (over graphics shop)	Misc.	28/29	ND
8842.1-2338-65	Silver coat paint (HM-28) and built-up roofing (HM-29)	North section-center (over graphics shop)	Misc.	28/29	ND
8842.1-2338-66	Silver coat paint	South side- west over self-storage	Misc.	28	ND
8842.1-2338-67	Silver coat paint	Center section (over graphics)	Misc.	28	ND
8842.1-2338-68	Silver coat paint	North side (over graphics)	Misc.	28	ND
8842.1-2338-69	Black roof sealant	South side (east)	Misc.	30	ND
8842.1-2338-70	Black roof sealant	South side (north)	Misc.	30	ND
8842.1-2338-71	Black roof sealant	Center (east)	Misc.	30	ND

ACT= acoustical ceiling tile, CHR= Chrysotile, CMU = cement masonry unit, GWB = gypsum wallboard, HM = homogeneous material, Misc. = miscellaneous, ND = none detected, SVF = sheet vinyl flooring, TSI = thermal system insulation, VFT = vinyl floor tile, .

Appendix D
SAT National Voluntary Laboratory Accreditation Program Certificate

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200768-0

Seattle Asbestos Test, LLC

Lynnwood, WA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2018-10-01 through 2019-09-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

Appendix E
Analytical Reports- Asbestos

SEATTLE ASBESTOS TEST, LLC

Lynnwood Laboratory: 19701 Scriber Lake Road, Suite 103, Lynnwood, WA 98036, Tel: 425.673.9850, Fax: 425.673.9810, NVLAP Lab Code: 200768-0

www.seattleasbestostest.com, admin@seattleasbestostest.com

Project Manager:	Anthony Fullerton	Date Analyzed:	7/3/2019
Client:	Med-Tox, Northwest	Client Job#:	8842.1
Address:	PO Box 1446, Auburn, WA 98071-1446	Project Location:	2338 11th St, Tacoma, WA
Tel:	253.351.0677	Laboratory batch#:	201911093
		Samples Received:	71

Enclosed please find the test results for the bulk samples submitted to our laboratory for asbestos analysis. Analysis was performed using polarized light microscopy (PLM) in accordance with Test Method US EPA/600/R-93/116.

Percentages for this report are done by visual estimate and relate to the suggested acceptable error ranges by the method. Since variation in data increases as the quantity of asbestos decreases toward the limit of detection, the EPA recommends point counting for samples containing between <1% and 10% asbestos (NESHAP, 40 CFR Part 61). Statistically, point counting is a more accurate method. If you feel a point count might be beneficial, please feel free to call and request one.

The test results refer only to the samples or items submitted and tested. The accuracy with which these samples represent the actual materials is totally dependent on the acuity of the person who took the samples. This report must not be used by the client to claim product certification, approval, or endorsement by Seattle Asbestos Test, LLC, NVLAP, NIST, or any agency of the Federal government. The test report or calibration certificate shall not be reproduced except in full, without written approval of the laboratory.

This report is highly confidential and will not be released without your consent. Samples are archived for 30 days after the analysis, and disposed of as hazardous waste thereafter.

Thank you for using our service and let us know if we can further assist you.

Sincerely

SZhang

Steve (Fanyao) Zhang
President

20241209 3

SEATTLE ASBESTOS TEST, LLC

Analyzing Quality

Lynnwood Lab: 19711 Scriber Lake Road, Suite D, WA 98036, Tel:425.673.9850, Fax:425.673.9810
Bellevue Lab: 12727 Northup Way, Suite 1, Bellevue, WA 98005, Tel:425.861.1111, Fax:425.861.1118
Email: admin@seattleasbestostest.com, Website: www.seattleasbestostest.com

CHAIN OF CUSTODY

☒ Bulk Asbestos ☐ Point Count 400 ☐ Point Count 1000 ☐ Point Count Gravimetric ☐ Other (Specify)

☐ 1 Hour ☐ 2 Hours ☐ Same day (4 to 6 Hrs.) ☐ 1 Day ☒ 5 Days

Med-Tox, Northwest

PO Box 1446, Auburn, WA 98071-1446 Tel: 253.351.0677 Fax: 253.351.0688

Number of Samples 71 PO# 8842.1 Project Location 2338 11th St, Tacoma WA

Project Manager (Check one or more):

☒	Anthony Fullerton	206.356.8927	fullertona@medtoxnw.com	☐	evansc@medtoxnw.com
☐	Ginnie Kindler		kindlerg@medtoxnw.com	☐ Jon Havelock	havelockj@medtoxnw.com
☐	Judy Lurvey		lurveyj@medtoxnw.com	☐ Teresa Choate	choatet@medtoxnw.com

SEQ#	CLIENT SAMPLE #	SAMPLE DESCRIPTION	LOCATION	NOTES
1	8842-1-2338-01			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20	8842-1-2338.71			

See Attached Table

	Print Name	Signature	Company	Date	Time
Sampled:	A Fullerton		Med-Tox, Northwest	6/26/19	
Relinquished:	A Fullerton		Med-Tox, Northwest	6/27/19	
Delivered:			Med-Tox, Northwest		
Received:	Rojumbao		Seattle Asbestos Test	6/27/19	1230
Analyzed:	Rojumbao		Seattle Asbestos Test	7/3/2019	12:00pm
Reported:			Seattle Asbestos Test		

Seattle Asbestos Test warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted and disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. Seattle Asbestos Test accepts no legal responsibility for the purpose for which the client uses the test results. By signing on this form, the clients agree to relieve Seattle Asbestos Test of any liability that may arise from the test results. It is the client's responsibility to make sure the samples are appropriately taken according to federal and local regulations. Invoices paid late may be charged of interest, and invoices go to collection may be charged 17% to 25% of collection fee. NSF checks will be charged of $50.

Results reporting method: ☐ Phone ☐ Fax ☐ Email ☐ Pick-up

☐ Composite all wallboard samples ☐ Text result to phone ☐ Point count ..... % or less asbestos

Page ( ) of ( )