

**FINAL REPORT
ASBESTOS SAMPLING &
LEAD PAINT TESTING**

**DUNEDIN TERRACE
RESIDENTIAL UNITS 175-218**

PREPARED FOR:

**ST. PAUL PUBLIC HOUSING AGENCY
261 EAST UNIVERSITY AVENUE
ST. PAUL, MN 55101**

LEGEND NO. 1405535

January 8, 2015

PREPARED BY:

LEGEND TECHNICAL SERVICES, INC.

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January 8, 2015

Mr. Jordan LaSota
St. Paul Public Housing Agency
261 East University Ave.
St. Paul, MN 55101

RE: Dunedin Terrace Residential Units
Asbestos Sampling and Lead Paint Testing
LEGEND No. 1405535

Dear Mr. LaSota:

The following is LEGEND TECHNICAL SERVICES, INC.'s (LEGEND) final report for the asbestos sampling and lead in paint testing that was performed within nine four-plex residential units located at the following addresses:

- 175 East Congress Street, St. Paul, MN
- 179 East Congress Street, St. Paul, MN
- 183 East Congress Street, St. Paul, MN
- 187 East Congress Street, St. Paul, MN
- 191 East Congress Street, St. Paul, MN
- 195 East Congress Street, St. Paul, MN
- 199 East Congress Street, St. Paul, MN
- 204 East Congress Street, St. Paul, MN
- 218 East Congress Street, St. Paul, MN

The sampling/testing was performed on December 12 and 15, 2014 and January 7, 2015 by LEGEND.

If you should have any questions regarding this report, please feel free to contact me at 651/221-4069.

Cordially,

LEGEND TECHNICAL SERVICES, INC.

Keith Giorgi
Project Manager

/kg

LEGEND TECHNICAL SERVICES, INC.

**ASBESTOS SAMPLING and LEAD IN PAINT TESTING
DUNEDIN TERRACE RESIDENTIAL UNITS
ST. PAUL, MN**

LEGEND No. 1405535

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NARRATIVE REPORT

INTRODUCTION

The following is the final report of the asbestos sampling and lead in paint sampling/testing for inspections that were performed in nine four-plex units owned by the St. Paul Public Housing Agency. The sampling/testing was performed on December 12 and 15, 2014 and January 7, 2015 by Keith Giorgi and Andrew Tinklenberg of LEGEND TECHNICAL SERVICES, INC. (LEGEND).

BACKGROUND INFORMATION

Seven similar units were inspected by LEGEND early in 2013 and the report data from these inspections were used as a reference. The buildings were constructed at the same time period under a single construction contract and are comprised of three level buildings (basement plus two upper floors) which house four residential units. The residential units housed either a three bedroom unit, four bedroom unit, or a five bedroom unit. All bedrooms were located on the second floors of the three and four bedroom units with the five bedroom units having one bedroom located on the first floor. The basement and first floor levels for all units were similar in construction and layout. The basements were concrete block walls with concrete floors. The upper levels were wood framed with gypsum board walls and ceilings. Floor coverings were 12"x12" vinyl floor tiles, a limited amount of 9"x9" floor tile, and sheet flooring in select bathrooms (installed over top of the 12"x12" floor tiles). The units were all re-roofed in 1991/1992 with similar roofing materials (i.e. built-up roofs and shingled edges). Roof core sampling was not performed as LEGEND did not want to damage the integrity of the rooftops.

175 East Congress Street (three bedroom unit)
179 East Congress Street (five bedroom unit)
183 East Congress Street (three bedroom unit)
187 East Congress Street (four bedroom unit)
191 East Congress Street (three bedroom unit)
195 East Congress Street (five bedroom unit)
199 East Congress Street (three bedroom unit)
204 East Congress Street (four bedroom unit)
218 East Congress Street (four bedroom unit)

METHODOLOGY

3.1 Asbestos Sampling

The samples were collected in accordance with Minnesota Department of Health Rules 4620.3460. The samples were analyzed in LEGEND's in-house laboratory. Analysis for the presence of asbestos fibers in bulk samples was performed in LEGEND's laboratory using polarized light microscopy (PLM) and dispersion staining techniques. The analysis was performed using an Olympus BHSP microscope at 40-200X magnification in accordance with current U.S. Environmental Protection Agency (USEPA) protocols, "Method for the Determination of Asbestos in Bulk Building Materials," EPA 600/R-93/116, 1993 and "Interim Method for the Determination of Asbestos in Bulk Insulation Samples," EPA-600/M4-82-020, Dec. 1982. All reported percentages are by visual estimates. In the case of nonhomogeneous samples, each material or layer is analyzed separately and the reported percentages are based on the total sample as received. An asbestos containing material (ACM) is defined as any material containing greater than one percent asbestos as analyzed by PLM techniques.

3.2 Lead in Paint Testing

Paint chip samples were collected of paints that were in a deteriorated state (i.e. peeling, flaking, etc.) and were collected for confirmation/clarification of the XRF testing. The paint chips were analyzed in LEGEND's laboratory according to EPA Method 6010B using inductive coupled plasma analysis. Limited lead testing was performed within the units with the use of a RMD® hand held direct read XRF lead analyzer. As the units were all similar to the units that were previously inspected, the lead testing only included select confirmation testing of painted surfaces within the units. The lead testing performed

does not constitute a full lead inspection or risk assessment. The definition of lead based paint according to the Minnesota Department of Health (MDH) and Housing and Urban Development (HUD) is 1.0 mg/cm² (or 5000 mg/kg or .5% by weight).

4.0 RESULTS

4.1 Asbestos Results

A total of 83 samples were collected of base cove adhesive, flooring materials, gypsum board, taping compound, pipe fitting insulation, chimney flue packing, vibration damper, sink undercoating, penetration putty, stair treads, stair tread adhesive, and various caulks. The following is a breakdown of the asbestos containing materials identified within or on the building:

4.1.1 Thermal System Pipe Insulations

The domestic pipes within all nine buildings were insulated with non-asbestos fiberglass on the straight run sections of the piping and hard packed mud on the fittings (tees, valves, elbows, etc.). Samples collected of the insulation on the fittings showed that most are asbestos containing while others are non-asbestos containing. As it is not possible to visually look at the insulation and determine which are asbestos containing and which are non-asbestos containing (only way is to collect samples and have analyzed), it was agreed to consider all mudded fitting insulation as asbestos containing. The majority of the fittings were observed in the basements of the buildings (approximately 9 to 15 fittings per residential unit) with additional fittings observed in some of the pipe chases behind the tubs. LEGEND would assume that there are fittings present in all bathtub chases just behind the tubs and may also be present in the sink chases in the kitchen and on the second floors in the bathrooms. A few areas were noted to have damaged fitting insulation, but the majority of the insulation observed was in good condition.

4.1.2 Floor Coverings

Samples were collected of the various floor coverings found in the buildings. The basements were bare concrete while the majority of the floors on the first floor and second floor were covered with 12"x12 vinyl floor tile. A few different variations of the 12" floor tiles were observed and sampled. A limited amount of vinyl sheet flooring was observed in bathrooms (glued down over floor tiles) and one living room (laying loose over floor tiles). All of the black floor tile adhesive/mastic was determined to be asbestos containing while the majority of the vinyl 12" floor tiles were non-asbestos containing. The sheet floorings were determined to be non-asbestos containing, but all of these areas are assumed to have ACM black mastic present underneath with or without non-ACM 12"x12" floor tile. 9"x9" floor tile was found to be asbestos containing and is present on the stair landings of units 183A and 179A. One variation of 12"x12" floor tile (dark brown) was determined to be asbestos containing and is located in the second floor bedrooms 2 and 3 of unit 179B.

LEGEND would estimate that there is approximately 18 square feet of the 9"x9" ACM floor tile present on the stair landings of units 183A and 179A. LEGEND would estimate that there is approximately 300 square feet of the dark brown 12"x12" ACM floor tile present in the second floor bedrooms 2 and 3 of unit 179B. As mentioned above, all of the floor tile mastic in the buildings was determined to be asbestos containing. LEGEND would estimate that there is approximately 1,050 square feet of ACM mastic in each of the three and four bedroom units (4,200 square feet per building), and 1,150 square feet in each of the five bedroom units (4,600 square feet per building). The stairs themselves between the first and second floors were covered with non-asbestos stair treads and adhesive.

4.1.3 Gypsum Board Taping Compound

Samples collected of the gypsum board taping/joint compound showed that the majority are asbestos containing while a few were non-asbestos containing. It's possible that select areas in the units were replaced or repaired with a non-ACM taping compound. For this reason, the taping/joint compound throughout all nine units should be assumed to be asbestos containing. The asbestos taping/joint compound is applied over non-asbestos gypsum board on the walls and ceilings throughout the first and

second floors as well as in the basement stairwells. Current Occupational and Safety and Health Regulations (29 CFR 1926.1101) regulate the taping compound as follows:

If the gypsum board with the taping compound is to be removed for renovation purposes, the work is classified as Class II work where the gypsum board would have to be removed by a licensed asbestos abatement contractor/worker. The work would have to be performed within a regulated area. If the gypsum board or taping compound is to be repaired (i.e. wall is damaged, corners are chipped, etc.), the repair work is classified as Class III work which requires that the worker(s) performing the repair work have a minimum of 16 hours of asbestos operations and maintenance training. The work would have to be performed within a regulated area. If the walls are to be re-painted, the work is classified as Class IV work which requires the worker(s) performing the painting would have a minimum of 2 hours of asbestos awareness training.

LEGEND would estimate that there is approximately 4,350 square feet of gypsum ceiling and wallboards with the asbestos taping compound in each of the three bedroom units (17,400 square feet per building), 4,700 square feet in each of the four bedroom units (18,800 square feet per building), and 5,000 square feet in each of the five bedroom units (20,000 square feet per building).

4.1.4 Miscellaneous

Gas pipe penetration sealant was found to be asbestos containing. The penetration sealant is located in the basement level where the gas piping feeds into the building. There is <1 square foot of the penetration sealant at each location. The basement area of the following units contains the ACM penetration sealant:

- Unit 175C, Unit 179C, Unit 195C

Electrical penetration putty was found to be asbestos containing. The penetration putty is located in the basement level where an electrical conduit feeds into the building. There is <1 square foot of the penetration putty at each location. The basement area of the following units contains the ACM penetration putty:

- Unit 175B, Unit 175D, Unit 179B, Unit 179D, Unit 183D, Unit 187C, Unit 191B, Unit 191D, Unit 195A, Unit 195C, Unit 204A, Unit 204C, Unit 218A, Unit 218C

The packing material used to seal the old chimney flue openings in the basement of each unit was found to be asbestos containing. The material is not visibly present at all of the flue openings, but should be assumed to be present at each location behind the hard concrete patching material. The flue openings which contain the asbestos are located about halfway up the chimney in the basement level. There is approximately 1 square foot of the material at each of the old chimney flue openings.

Refer to Table #1 located in Appendix A for asbestos sampling results and the diagrams in Appendix C for sampling and asbestos locations.

4.2 Lead Results

4.2.1 Lead Inspection Results

XRF testing results show a total of six separate components to have lead-based paint.

The red steel I-beam paint and brown angle steel support paint found in the basements of all units were found to be lead-based. The five bedroom units have an additional steel beam and support columns/posts that are covered with red lead-based paint. There is approximately 20 square feet of the lead-based paint on the exposed steel components in the basement of each unit of the three and four bedroom units. There is approximately 50 square feet of the lead-based paint on the exposed steel components in the basement of each unit of the five bedroom units.

There is lead-based paint present on the door jambs and the lower soffits of the exterior of the units. It appears that there is a white paint under the top green and/or brown paint layer which is most likely the lead-based paint. Not all door jambs and soffits were found to have the lead-based paint, but since the paint appears to be either a primer or that only a residual amount of the paint remains, all exterior door jambs and lower soffit areas should be assumed to have lead-based paint. There is approximately 64 square feet of the lead-based paint on the exterior door jambs of the building (two doors per unit), and approximately 600 square feet on the lower soffits.

There is lead-based paint present on the exterior second floor windows on the 2"x6" boards that run vertically along the two outside edges of the windows (referred to as casing boards in the lead sampling tables). It appears that there are two layers of paint on the wood pieces with a brown paint on top and a white paint on the bottom layer. The lead most likely is in the white paint. There is approximately 48 square feet of the lead-based paint on the exterior door casings of the three bedroom units, and approximately 64 square feet on the four and five bedroom units.

The tubs in the second floor bathrooms are known to contain a lead-based glazing.

Refer to Table #2 in Appendix B for XRF testing results.

4.2.2 Lead in Paint Chip Sampling Results

One painted surface was sampled for lead content for confirmation of the XRF testing. The paint chip sample was collected of the tan lower soffit paint on the exterior of the building and was determined to have a lead in paint level that exceeded 5,000 mg/kg.

Refer to Table #3 located in Appendix B for lead paint chip analytical results.

5.0 REMARKS

All work that will be performed on or impact surfaces that are covered with lead-based paints must be performed in accordance with current federal EPA's renovation, remodeling, and painting rule 40 CFR 745 or if applicable, HUD's Lead Safe Housing Rule 24 CFR Part 35. The client should be aware that a lead hazard may be present in quantities less than the regulatory definition. The Occupational Safety and Health Administration (OSHA) considers paint with any amount of lead to be lead containing paint and should be dealt with accordingly. For further information on lead paint in construction see 29 CFR 1926.62.

The asbestos samples will be retained for thirty days past the date of this report while the lead samples were consumed upon analysis.

Cordially,

LEGEND TECHNICAL SERVICES, INC.



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