

**Nate Graham
4 West Main St.
Hastings-On-Hudson, NY 10706**

LEAD RISK ASSESSMENT REPORT

For

**Nate Graham
4 West Main St.
Hastings-On-Hudson, NY 10706**

Date of Assessment: June 5, 2020

Date of Report: June 17, 2020

Completed By: Justin Joe, PhD, CIH, CSP, CBCP
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1.0 INTRODUCTION

On June 5, 2020, Justin H. Joe, PhD, CIH, CSP, CBCP of BNF Consulting, Inc. (EPA lead-based paint certified firm NAT-F200872-1) completed a Limited Lead-based Paint (LBP) Survey for the property located at 4 West Main St., Hastings-On-Hudson, NY 10706. Primarily assisting during the survey was the owner of the property.

2.0 EXECUTIVE SUMMARY

The purpose of the lead risk assessment was to identify surfaces containing amounts of lead exceeding the HUD lead guidelines for each method of sampling.

- The lead paint chip sampling method was utilized to sample painted surfaces or other surface coatings that contain lead in excess of 0.5% by weight (5000 ppm) by laboratory analysis. Paint chip samples were taken from suspected locations including the exterior dormer trim of the third floor, left and right window trims, the front and rear of the exterior wall window.
- The lead wipe sampling method was utilized to sample building surfaces that contain lead in excess of 10 µg/ft² for floor living area by laboratory analysis. Wipe samples were taken from the first, second, third floors as well as the basement. Samples on the first floor consisted of the living room, entrance, kitchen, dining room, and staircase landing connecting between the first and second floors. Samples on the second floor were collected from the baby's room, master bedroom, and staircase landing connecting between the second and third floors. Samples on the third floor were collected from the bedroom and the kitchen. Samples in the basement were collected from the staircase landing, laundry room, and family room.
- The lead soil sampling method was utilized to sample soil around the property that contain lead in excess of 400 µg/g (400 ppm) by laboratory analysis. Two samples from the front and two samples from the rear were collected.

BNF Consulting, Inc. (hereafter BNF) performed the Lead-based Paint (LBP) risk assessment following the specifications described in the protocols for Lead Based Paint testing in the Housing and Urban Development (HUD) Guidelines Chapter 7 (revised 1997) and any applicable Federal, State, and Local regulations. All sampling was intended to document exposures to lead paint and to address the concerns. This survey included the following sampling:

- Five (5) lead paint chip samples
- Thirteen (13) lead wipe samples
- And four (4) lead soil samples were collected for lead analysis

The analytical results indicate that the sampled surfaces contained **lead in the substances**, sampled materials exceed HUD Lead Guidelines:

- Four (4) samples of the paint chip samples were found to contain lead at levels above the HUD Lead Guidelines of 0.50% By Weight. The areas include interior and exterior window trims.
- Four (4) samples of lead wipe samples were found to contain lead at levels above the HUD Lead Guidelines of 10 µg/ft². The areas include the 1st floor entrance, the 2nd fl master bed, the 2nd/3rd floor staircase landing, and the basement staircase landing.
- Lead Soil samples were collected from the front and rear of the residence. Four (4) samples were found to contain lead at levels above the HUD Lead Guidelines of 400 µg/g (400 ppm).

3.0 FINDINGS/OBSERVATIONS

The following are some notes regarding the survey efforts, sampling decision processes, and happenings during the planned survey time.

The proposed survey plan served the purpose of:

- Identifying painted surfaces or other surface coatings that contain lead more than 0.5% by weight (5000 ppm) through lead paint chip sampling,
- Identifying interior floor surfaces that contain lead in excess of 10 µg/ft² through lead wipe sampling,
- And identifying soil samples that contain lead in excess of 400 µg/g (400 ppm) through lead soil sampling by laboratory analysis.

BNF collected twenty-two (22) samples at the time of the inspection using the lead paint chip, lead wipe, and lead soil sampling methods.

- Paint chip samples were taken from suspected locations including the exterior dormer trim of the third floor, left and right window trims, and the front/rear of the exterior wall windows. Four (4) samples were found to contain lead at levels above the HUD Lead Guidelines of 0.50% By Weight.
- Lead wipe samples were taken from suspected locations throughout the first, second, and third floors as well as the basement. Four (4) samples were found to contain lead at levels above the HUD Lead Guidelines of 10 µg/ft².

- Lead Soil samples were collected from the front and rear of the residence. Four (4) samples were found to contain lead at levels above the HUD Lead Guidelines of 400 µg/g (400 ppm).

The analytical results indicate that the following building surfaces are **NOT lead containing surfaces**, paint chip sampled surfaces not exceeding the HUD Lead Guidelines of 0.50% by weight:

Sample Number	Location	Result
Paint Chip #01	Ext. Dormer Trim 3 rd Fl	<0.009% By Weight

The analytical results indicate that the following building surfaces are **lead containing surfaces**, paint chip sampled surfaces exceeding the HUD Lead Guidelines of 0.50% by weight:

Sample Number	Location	Results
Paint Chip #02	L/R Window Trim #1	2.604% By Weight
Paint Chip #03	L/R Window Trim #2	2.696% By Weight
Paint Chip #04	Exterior Wall Window #1 Front	1.161% By Weight
Paint Chip #05	Exterior Wall Window #2 Rear	0.571% By Weight

The analytical results indicate that the following building surfaces are **NOT lead containing surfaces**, lead wipe sampled surface not exceeding the HUD Lead Guidelines of 10 µg/ft²:

Sample Number	Location	Results
Wipe #01	1 st Fl L/R	<10 µg/ft ²
Wipe #03	1 st Fl Kitchen	<10 µg/ft ²
Wipe #04	1 st Fl D/R	<10 µg/ft ²
Wipe #05	1 st /2 nd Fl Staircase Landing	<10 µg/ft ²
Wipe #06	2 nd Fl Baby's Room	<10 µg/ft ²
Wipe #09	3 rd Fl Bedroom	<10 µg/ft ²
Wipe #10	3 rd Fl Kitchen	<10 µg/ft ²
Wipe #12	Basement Laundry	<8 µg/ft ²
Wipe #13	Basement Family Room	<8 µg/ft ²

The analytical results indicate that the following building surfaces are **lead containing surfaces**, lead wipe sampled surface exceeding the HUD Lead Guidelines of 10 µg/ft²:

Sample Number	Location	Results
Wipe #02	1 st Fl Entrance	12.6 µg/ft ²

Wipe #07	2 nd FI Master Bed	35.6 µg/ft ²
Wipe #08	2 nd /3 rd FI Staircase Landing	38.8 µg/ft ²
Wipe #11	Basement Staircase Landing	45.6 µg/ft ²

The analytical results indicate that the following soil regions are **lead containing surfaces**, soil samples exceeding the HUD Lead Guidelines of 400 µg/g:

Sample Number	Location	Results
Soil #01	Front	774.8 µg/g
Soil #02	Front	697.6 µg/g
Soil #03	Rear	767.9 µg/g
Soil #04	Rear	773.7 µg/g

4.0 CONCLUSION

On June 5, 2020, BNF collected twenty-two (22) lead paint chip, wipe and soil samples on the subject property. Lab Data indicates that paint chip samples collected from the left and right window trims as well as the front and rear of the exterior wall window samples test positive and exceed the HUD Lead Guidelines of 0.50% by weight. Additionally, wipe samples located in the first-floor entrance, second floor master bedroom, second/third floor staircase landing and basement staircase landing exceed the HUD Lead Guidelines of 10 µg/ft². All soil samples exceed the HUD Lead Guidelines of 500 µg/g. Therefore, BNF concludes that several samples collected throughout the property are contaminated with lead.

5.0 LEAD SAMPLING METHODOLOGY

Lead paint sampling requires that a sample of paint, either new paint or dry paint removed from a surface, be collected and analyzed in a laboratory using various techniques. Laboratory analysis requires careful sample collection and preparation. For dry paint on surfaces, it is generally recommended that all layers of paint are collected, as the lower levels are more likely to contain lead. As little as possible of the underlying material (e.g. wood, plaster, metal) is included, as this might give erroneous results. Within a house or building, several representative samples are collected from different areas with the location of each sample recorded. Surfaces from which paint samples have been collected are repaired to prevent future exposure in case the paint contains lead.

A minimum sample size of about 300 mg is usually required to conduct an analysis, although this depends on the concentration of lead, sample preparation, and the method of analysis. Results can be provided in weight percent if the weight of the sample is measured or in weight per unit surface area if the exact surface area of the sample can be determined.

Lead wipe sampling is completed using lead dust wipes to yield a measure of lead dust per square foot on building surfaces such as floors, windowsills, and window troughs. Wipe samples are required to be analyzed for lead dust loading by a laboratory using various techniques. While lead wipe sampling is the standard method, other methods such as the collection and evaluation of vacuum sampling poses a risk of hazard. Surfaces from which wipe samples have been collected must be properly remediated to prevent further exposure.

Lead soil sampling may be conducted in the case that a property has been recently abated or contaminated, is under current control treatment. Samples are typically collected adjacent to the foundation of the residence and common play areas on the property. Lead levels within soil can increase if proper abatement and precautions are not met. Paint chips should not be visible on the soil surrounding the foundation of the residence; however, paint chips embedded in the soil must be considered as a part of the soil. Sampled regions should be avoided to limit disturbance of the contaminated soil and prevent further exposure.

In the laboratory, the paint sample must be processed before being analyzed. For the measurement of total lead, the sample should undergo acid digestion. For the measurement of soluble lead (i.e. the lead likely to be available for absorption if a child mouths or swallows the paint), an acid extraction process is used. Whether total lead or soluble lead is measured depends on the reason for the analysis and on the relevant national regulations. The actual analysis can be conducted using different techniques, including flame atomic absorption spectrometry (FAAS), graphite furnace atomic absorption spectrometry (GFAAS) and inductively coupled plasma atomic emission spectrometry (ICP-AES).

6.0 GENERAL REMEDIATION PROCEDURES

Lead abatement activities are ruled and closely monitored by the EPA. A certified firm must notify EPA at least five business days prior to starting lead abatement activities.

How Building Components Need to Be Abatement

During the abatement on a building or any other commercial/residential project the following ideas can be followed:

- **Building Components** - Spray a light drizzle over the area that will be removed. Remove the piece carefully and vacuum if necessary. Wrap the component in 6-mil plastic sheeting and seal with duct tape.
- **Windows** - After carefully removing the affected area, make sure there is no friction that can generate additional dust from other components that were not removed and that could have lead-based paint. Preferably remove all window components.
- **Doors and Jambs** - After removing the lead-based paint affected the material, be sure to replace the jamb if possible. In some instances, this cannot be feasible

so be sure to remove the stop and replace it with new material after stripping the old jamb.

- Metal Components - Have them removed from the site and clean them off-site. It is extremely important to follow federal regulations and provide the proper PPE to workers dedicated to this work. Additional information: <https://www.health.ny.gov/publications/2502/>

Lead Abatement Safety

Lead abatement practices should be carried out by certified personnel with protective equipment. Workers must use proper personal protective equipment per state regulations. Full body covering (suits) with hood and shoe covering attached should be used to prevent lead dust contamination. Disposable coveralls that are used one time provide effective protection. Personal protective equipment that should be used includes at a minimum:

- Disposable coveralls
- Respirator
- Goggles
- Shoe covers
- Gloves

Lead Abatement Methods

The options for lead abatement methods include:

- Enclosure: This can be the easiest of all methods. The lead paint is covered with a wall covering. This is typically done for large surfaces such as walls.
- Replacement: This method involves completely removing the door, window or molding that is covered in lead paint and replacing it with a new one.
- Paint Removal: This method involves completely removing lead paint. This will create lead dust and should be performed by a certified professional.
- Encapsulation: This method not only covers but seals the affected area with a specific coating. This is less expensive but cannot be used on all surfaces.

Be Sure to avoid the following as they are or can be prohibited in most jurisdictions:

- Scraping dry paint
- Sanding the painted surface without HEPA local vacuum exhaust tool
- Using a heat gun or burning the surface with a torch (Open flame burning)
- Sandblasting the surface
- Chemically removing the paint
- Uncontained hydro blasting or high-pressure wash.

General Lead Remediation / Restoration Plan:

Remediation work to be followed by a EPA licensed lead remediator to remove/remediate all contaminated building materials and to restore the indoor air quality to an acceptable level are as follows:

- Wear Personal Protective Equipment (PPE) to all crew members conducting lead restoration/remediation.
- Seal off all openings, seams and penetrations to the work area including air vents, grills, and light fixtures in the containment areas.
- Create containment areas to isolate the bedrooms, the bathroom and the kitchen areas using 6 mil polyethylene plastic sheeting. Install a double flap and/or zipper access. Protective floor coverings should be used in the work areas for all means of egress. Create additional containments as necessary to create the adequate amount of negative pressure. Erect a decontamination chamber if no means of egress area available.
- Create negative pressure containment in the work areas by fans such as air scrubbers equipping HEPA filter. Air scrubbers can be placed in a window or a common area to exhaust air through a containment wall. This will prevent the dispersion of lead dusts during the remediation/removal process. The air exchange rate in the containment area should be at least 6 times per hour. Place additional air scrubbers outside of each containment area and on the first floor of the home.
- Inspect all personal belongings thoroughly for any signs of lead dusts. Water can be used to wipe with for hard surface and non-porous items, but it should be discarded for bulky porous items affect with visible and apparent lead dusts. Porous items such as fabrics can be laundered, larger porous can be HEPA filter vacuumed. Some items may need to be discarded.
- Remove all personal items from the areas or wrap in plastic sheeting prior to the removal of any building materials.
- Do two rounds of HEPA filter vacuuming and surfaces should be free of all visible dust.
- Run air scrubbers for no less than 2 days to continue to remove lead dusts from the air after the cleaning process has been completed.
- Place all removed materials in double sealed polyethylene bags. Bags are to be wiped with a cleaning solution prior to transport to the disposal areas.

7.0 SPECIFIC REMEDIATION PROTOCOLS

06-01-2020 Recommend to remediate lead paint dusts in the living space using General Lead Remediation / Restoration Plan described above in the Section 6.0 for the following areas:

- 1st floor entrance between the living room and the kitchen
- 2nd floor master bed and the playroom next to the master bedroom
- Rear staircase from the 2nd to 3rd floor
- Staircase to the basement and landing at the bottom area

06-02-2020 Recommend to remediate lead dust on personal belongings with the following procedures.

Hard surface and non-porous items, i.e. desk, dressers, cabinets,

purses, picture frames, shoes, laptops, etc.

1. Inspect all personal belongings thoroughly for any signs of dusts.
2. Do two rounds of HEPA filter vacuuming.
3. Damp wiping methods on all surfaces in the containment areas.
Surfaces should be free of all visible dust.

Porous items, i.e. fabrics, clothes, coats, some shoes, dresses, suit cases, etc.

1. Discard porous items affected with visible and apparent dusts.
2. Use dry cleaning for clothes.
3. Porous items such as fabrics can be laundered.
4. Larger porous items can be HEPA filter vacuumed.

Surface cleaning effectiveness test

1. If you need to confirm surface cleaning effectiveness for decontamination of non-porous or semi-porous materials, collect surface samples using tape, swabs, or wipes.
2. Surface sampling results should be at background levels.

- 06-03-2020 Recommend to abate lead-based paint in the exterior and interior surfaces using Lead Abatement Methods described above in the Section 6.0 for the following areas:
- 1st floor living room window trims
 - Exterior walls including windows

- 06-03-2020 Recommend to abate lead in soil near play areas and high-contact areas for children using Lead Abatement Methods described above in Section 6.0 for the following areas including flower garden in the front and backyard ground.

Possible abatement methods:

1. Replacement: 1-foot deep topsoil in the contaminated area can be removed and replaced with uncontaminated soil.
2. Enclosure: Provide a barrier between the contaminated soil and children by covering the contaminated bare surfaces with concrete or pavement.

8.0 LEAD ANALYSIS LABORATORY

Collected lead paint chip samples were submitted under chain of custody for standard turn around analysis to AIHA (American Industrial Hygiene Association) accredited lead analysis laboratory, SanAir Technologies Laboratory in Powhatan, Virginia.

9.0 GENERAL INFORMATION

Lead is a highly toxic metal that was used for many years in products, such as lead-based paint (LBP), found in and around homes and commercial buildings. LBP use was banned in 1978 and is regulated by the Environmental Protection Agency (EPA) and Housing and Urban Development (HUD) in the Residential Lead-Based Paint Hazard Reduction Act of 1992, including the Residential Lead-Based Paint Disclosure Program Section 1018, as well as the Residential Lead Hazard Standards in TSCA Section 403. In addition, the Occupational Safety and Health Administration (OSHA) regulates worker protection during renovation and/or demolition of structures with LBP.

The Lead in dust and paint chips is toxic if ingested or inhaled. The smallest lead dust particles cannot be seen, but if they get into the body, the lead can cause numerous health problems. Children and pregnant women are particularly susceptible to lead poisoning, which can cause reduce IQ and learning disabilities by affecting developing nervous systems, as well as causing slowed growth, hearing problems and behavior problems. Adults are also susceptible to lead, which can result in high blood pressure, headaches, digestive problems, memory and concentration problems, kidney damage, mood changes, nerve disorder, sleep disturbance, and muscle or joint pain.

A single, very high exposure to lead can cause lead poisoning. Lead-based paint that is in poor condition, or that is disturbed during renovation and remodeling projects, such as demolition, dry-sanding, scrapping, brushing, or burning surfaces with a layer of LBP, can produce dust with lead, which can be inhaled, or enter the body from hand-to-mouth contact. If renovation work is not conducted properly, lead dust can remain in a home or building long after the work is done.

10.0 PHOTOGRAPHS



Figure (1) – Dining room



Figure (2) – Living room



Figure (3) – Kitchen



Figure (4) – Front Entrance



Figure (5) – Staircase landing to 3rd floor



Figure (6) – Baby's room

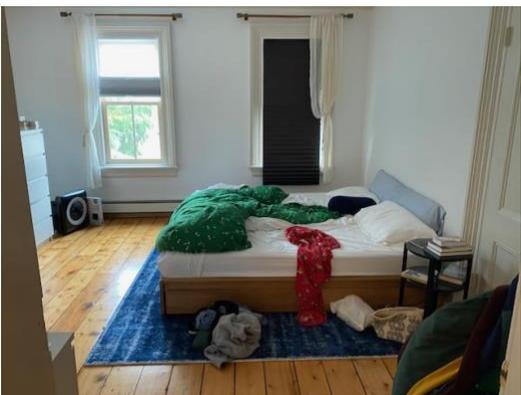


Figure (7) – Master bedroom



Figure (8) – 2nd floor playroom



Figure (9) – Laundry area



Figure (10) – Staircase landing to basement



Figure (11) – Dommer window frame



Figure (12) – 3rd fl apartment



Figure (13) – Backyard



Figure ()-Front flower bed



Figure (13) – Exterior window rear



Figure (13) – Exterior window front