

APPENDIX A

APPENDIX A

October 22, 2020



TESSERACT
ENVIRONMENTAL CONSULTING INC.

Designated Substances Survey



303 Main Street,
Winnipeg, Manitoba

Submitted to:

**Mr. Travis Cooke
1x1 Architecture Inc.
103-120 Fort Street
Winnipeg, Manitoba
R3C 1C7**

DESIGNATED SUBSTANCES



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Appendix A – Laboratory Certificate of Analysis – Asbestos

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1.0 EXECUTIVE SUMMARY

A limited investigation for hazardous materials has been undertaken to provide a complete understanding of pre-renovation remedial actions that may be required during the Regional Office Fit-Up Project at 303 Main Street in Winnipeg, Manitoba (the Site). Before any work can take place, it is required under Manitoba Regulation 217/2006, Parts 36 and 37 that all hazardous materials that will be affected by these activities be removed or managed in a manner that does not create a risk to the health and safety of any person.

Asbestos-containing drywall joint compound is present on walls throughout the work area.

Asbestos containing black mastic is located on insulated ducting in the ceiling space, and on mechanical lines inside wall mounted heater units within each office space.

All air samples collected for airborne fungal spores were found to be similar in concentration and genera when compared with the outdoor reference sample. There does not appear to be an airborne fungal issue at this time.

Where assessed, no visible mould growth was observed.

None of the paint in the intended renovation area is considered lead containing.

2.0 INTRODUCTION

Tesseract Environmental Consulting Inc. (TEC) was retained by 1x1 Architecture Inc (the Client) to complete a Designated Substances Survey (DSS) within the intended renovation area in room 303 of 303 Main Street, in Winnipeg, Manitoba. The assessment was conducted on September 29, 2020, by Mr. Trevor Bage of TEC.

The Site assessment was performed with the objective of identifying hazardous materials that may require abatement prior to renovations on Site. TEC understands that the Client will provide this report to contractors or staff who will be performing any maintenance, demolition, renovations, or alterations at the Site.

This report has been compiled to assist the Client in meeting the requirements of Section 4 – Duties of Employers, of Chapter W210 10/02 The Workplace Safety and Health Act as amended, Manitoba Regulation 217/2006 Part 37, and the Manitoba documents, entitled *The Guide for Asbestos Management (May 2017)*.

3.0 SCOPE OF WORK

The Scope of Work for this project was limited to the following:

- ❑ Conduct a room-by-room visual assessment of the Site to determine the location and condition of potentially asbestos-containing materials, suspect lead-containing paints, mercury, polychlorinated biphenyls, and other noted hazardous materials present at the Site.
- ❑ Conduct representative bulk sampling of materials suspected to contain lead or asbestos to supplement observations at the Site.
- ❑ Submit the bulk samples collected to an accredited lab, under chain of custody protocol, for analysis.
- ❑ Provide a report outlining our findings and provide recommendations regarding the removal of the identified substances in accordance with planned remediation activities at the Site building.

4.0 REGULATIONS AND GUIDELINES

4.1 Asbestos

The regulations, guidelines and standards relevant to hazardous building materials include the Manitoba Workplace Health and Safety Regulation (M.R. 217/2006), the Manitoba guidance document entitled *The Guide for Asbestos Management* (May 2017), and the Manitoba Dangerous Goods Handling and Transportation Act.

Part 36 of M.R. 217/2006 prescribes airborne occupational exposure limits to chemical and biological substances based on Threshold Limit Values (TLV's) established by the American Conference of Governmental Industrial Hygienists (ACGIH). The TLVs for a contaminant represents conditions to which it is believed that nearly all workers may be exposed, day after day, over a working lifetime, without adverse health effects.

Part 37 of M.R. 217/2006 prescribes the overall requirements of a building owner or operator with respect to asbestos-containing materials in the workplace, as well as responsibilities prior to renovation or demolition of all or part of a workplace.

4.2 Lead

Lead is regulated under M.R. 217/2006, Parts 36 and 33, among others. Generally, removal of lead-containing paint is not required unless work performed on lead-containing materials is likely to produce airborne lead dust or fumes (e.g. during welding, torch cutting, sanding and sandblasting). If these operations are likely to occur during building renovation or alteration, it is recommended that the removal of lead-containing paint be carried out in accordance with M.R. 217/2006; Section 33.3, which states:

An employer must ensure that the demolition work is ... conducted in such a way as to ensure that, so far as is reasonably practicable, workers and other persons are not exposed to risks to their safety and health in connection with the demolition work.

Lead was used as a pigment and drying agent in alkyd oil-based paints. The Surface Coating Materials Regulations (SOR/2005-109) made under the Canada Consumer Product Safety Act restricts the lead content of paints and other liquid coatings on new furniture, household products, children's products, industrial surfaces and exterior and interior surfaces to 90 mg/kg by weight. A common exception to this regulation is the application of anti-corrosion coatings, primarily to equipment and exterior metal finishes. The Canadian Paint and Coatings Association (CPCA), the national trade association for Canada's paint manufacturers recommended that the Canadian paint industry voluntarily stop using any lead compounds in consumer paints by the end of 1990. Over the years, the amount of lead in paint has continued to decrease, due to the co-operative efforts of government and industry.

M.R.217/2006 currently does not prescribe a defining threshold for a quantitative classification of lead-based paint. As such, TEC considers any paint with a detectable presence over 90 mg/kg of lead, whether interior or exterior finishes, to be lead-containing paint.

4.3 Mould

Currently, no numerical regulatory exposure standards exist for airborne fungal matter. Thus, indoor bioaerosol levels must be compared to outdoor levels or to an asymptomatic reference area. Results of sampling for airborne fungal spores should be evaluated for potential toxigenic microorganism or microorganisms which emit volatile organic compounds. The presence of certain indicator species, regardless of their concentrations, and especially if not also detected in the outdoor ambient sample(s), may indicate the presence of an interior fungal amplification Site which may require further investigation and/or remediation.

The persistent presence, demonstrated on repeated sampling, of significant numbers of potentially toxigenic fungi (i.e. *Stachybotrys*, *Aspergillus*, *Penicillium*, and *Fusarium* genera) indicates that remediation should be considered in the areas of concern. The Manitoba Workplace Safety and Health document, titled *Investigation, Assessment, & Remediation of Mould in Workplaces*, outlines the technical procedures to be used for remediation of visible mould growth.

5.0 METHODOLOGY

The surveyor investigated the Site for suspected lead-containing materials, ozone depleting substances, mercury in thermostats and pressure sensing devices, and crystalline silica.

5.1 Asbestos

The surveyor investigated the Site for suspected asbestos-containing materials. The survey was conducted in such a fashion as to limit damage where possible. As such, the surveyor performed non-intrusive inspection and testing, and assessment of materials in concealed locations (i.e. ceiling spaces or wall cavities) was conducted only where access was readily available.

The building visually inspected to confirm the locations of suspect ACM. Where necessary, bulk samples were collected of materials suspected of containing asbestos for confirmation purposes.

Homogeneous materials sampling was utilized during the investigation. Specifically, bulk material sampling was completed on homogeneous materials that are uniform in colour, texture, and installation or construction date.

Representative samples of suspected ACM were submitted to Crisp Analytical Laboratories, LLC in Carrollton, Texas, USA for analysis to determine asbestos type and percentage content by polarized light microscopy (PLM), in accordance with U.S. Environmental Protection Act (USEPA) Method EPA/600/R-93/116.

5.2 Lead

Systematic sampling and visual identification of the most commonly applied colours of suspected lead-containing painted was completed as part of the survey. A visual review for other suspect lead-containing building materials was undertaken and noted if observed.

Samples of suspected lead-containing paints were submitted to ALS Environmental in Winnipeg, Manitoba for CALA Accredited analysis to determine the lead content by Inductively Coupled Plasma Mass Spectrometry (ICP-MS), in accordance with the Method EPA 200.2/6020A.

5.3 Mould

A visual investigation for fungal growth, and any indicators of fungal contamination as well as air sampling was completed during the survey.



Samples of total airborne mould spores were collected using Air-o-Cell cassettes and a pre-calibrated high-flow pump. Samples were collected for ten minutes in duration at a flow-rate of 15 liters per minute (L/min) with a total sampling volume of 150 litres (L) of air. Sampling for airborne fungal spores was conducted in various locations throughout the renovation area. One indoor reference sample was collected from the adjacent previously renovated area, and one outdoor ambient air sample was also collected and used for comparison purposes. The samples were sent for analysis, under chain of custody protocols, to Crisp Analytical Laboratories, LLC in Carrollton, Texas, USA an AIHA-accredited laboratory participating in the AIHA Environmental Microbiology Proficiency Analytical Testing program

6.0 ENVIRONMENTAL SERVICES

TEC collected two (2) suspect lead-containing paints from various locations around the Site building.

TEC also collected thirteen (13) suspect asbestos-containing materials, including but not limited to plaster, drywall joint compound, and ceiling tiles.

A limited fungal assessment was conducted in an effort to assess remediation efforts within the art storage room. The assessment included collection of five (5) air samples for airborne fungal spores, and a visual assessment of the building materials in the area.

7.0 RESULTS AND OBSERVATIONS

7.1 Asbestos

Results of the analysis for suspected asbestos-containing materials are provided below in Table 1: Analytical Results of Confirmed Asbestos-Containing Materials. Select photographs have been included in **Appendix D – Photo Index**. Full laboratory analytical results for all samples have been included in **Appendix A – Laboratory Certificate of Analysis – Asbestos**.

TABLE 1: Analytical Results of Suspected Asbestos Containing Materials

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DESCRIPTION	ASBESTOS CONTENT
303-1	Central Area - Wall	Smooth Plaster	None Detected
303-2	2 nd Office from the North East Corner - Column	Smooth Plaster	None Detected
303-3	North Corner Office - Column	Smooth Plaster	None Detected
303-4	North East Corner Office – Wall	Drywall Joint Compound	2% Chrysotile
303-5	West Corner Office – Wall	Drywall Joint Compound	2% Chrysotile
303-6	North Corner Office – Wall	Drywall Joint Compound	2% Chrysotile



SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DESCRIPTION	ASBESTOS CONTENT
303-7	Inside Heater – On Mechanical Line	Black Mastic	4% Chrysotile
303-8	Inside Heater– On Mechanical Line	Black Mastic	4% Chrysotile
303-9	Inside Heater – On Mechanical Line	Black Mastic	4% Chrysotile
303-10	Ceiling Space – Insulated Ducting	Black Mastic	4% Chrysotile
303-11	Ceiling	18"x48" Pin Style Ceiling Tile	None Detected
303-12	Ceiling	18"x48" Pin Style Ceiling Tile	None Detected
303-13	Ceiling	18"x48" Pin Style Ceiling Tile	None Detected

Based on the analytical results presented in the above table and Appendix A, as well as visual assessments during the Site visit, the following observations can be made with regards to the ACMs found within the Site area:

WALL & CEILING FINISHES

The south wall in the central area of room 303 was observed to be smooth plaster, and smooth plaster was observed on columns throughout the area. Samples of the smooth plaster (samples 303-1, 303-2 and 303-3) were found to contain no detectable levels of asbestos.

Non-suspect panelling was observed on walls throughout the area, with drywall beneath the panelling. Drywall was also observed within the heater units, and as the partition wall linking the panel/drywall partition to the exterior wall in each room. Samples of the joint compound (samples 303-4, 303-5 and 303-6) **were found to contain 2% Chrysotile asbestos.**

Throughout the assessed area, a visually similar pin style of ceiling tile was observed and (samples 303-11, 303-12 and 303-13) was found to contain no detectable levels of asbestos. Non-suspect concrete deck was observed above the ceiling tiles.

FLOORING

Flooring throughout room 303 was observed to be non-suspect carpet, and where assessed, was applied directly to the concrete subfloor.

MECHANICAL INSULATION

Within the heater units, fiberglass insulation with black mastic was observed on mechanical lines. Black mastic was also observed on foil wrapped fiberglass insulated ducting found within the ceiling space of the area. Samples of the black mastic **were found to contain 4% Chrysotile asbestos.**



7.2 Lead

Results of the analysis for suspected lead-containing paints are provided below in Table 2: Analytical Results of Suspected Lead-Containing Paints. Select photographs have been included in **Appendix D – Photo Index**. Full laboratory analytical results for all samples have been included in **Appendix B – Laboratory Certificate of Analysis – Lead**.

TABLE 2: Analytical Results of Suspected Lead-Containing Paints

SAMPLE NUMBER	SAMPLE IDENTIFICATION	LEAD IN PAINT (mg/kg)	TREAT AS LEAD CONTAINING?
303-LP-1	White Paint	71.1	NO
303-LP-2	Green Paint	19.3	NO

As outlined in section 4.2 above, TEC considers any paint with a detectable presence over 90 mg/kg of lead to be lead-containing paint. From these results, no additional precautions are required for impact to painted surfaces.

7.3 Mould

Results of the analysis for fungal spores in air samples taken are summarized below in Table 3, and located in **Appendix C: Laboratory Certificate of Analysis – Mould**.

Table 3: Summary of observed indoor species - Numbers expressed in counts per cubic meter

Species Observed	Central Area	North East Office	West Office	Previously Renovated Area (Indoor Reference)	Outdoor Reference
Alternaria	24	24	-	24	48
Ascospores	-	-	-	-	696
Basidiospores	-	24	-	-	192
Cladosporium	72	48	24	-	648
Dreschlera/Bipolaris	24	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	72

In comparison with the outdoor reference sample, all air samples collected were generally found to be similar in genera and concentration as the outdoor reference sample. A small number of Dreschlera/Bipolaris spores were found in the central area, these species are common plant moulds, and are not indicative of a fungal contamination issue.

The renovation area was also visually assessed for the presence of fungal growth, or any indications of fungal contamination. Visually, TEC did not observe any signs of water staining, or fungal growth on walls or inside heater units. TEC was advised that in a previous renovation, in an adjacent space, fungal growth was encountered on



partition walls, near the heater units. TEC was unable to remove the wall panels on the partition walls without damaging the underlying drywall, as such intrusive investigation was unable to be completed.

Although the air quality within the area has not been impacted, given the similarity of the work areas, it would be reasonable to presume that areas near the heaters in Room 303 would likely show some fungal growth.

8.0 RECOMMENDATIONS

8.1 Asbestos

Non-friable, asbestos containing black mastic was observed on mechanical lines inside heater units, as well as on insulated ducting in the ceiling space. This material may be safely removed following Type 1 precautions, or may be removed within any larger Type 2 or Type 3 work area.

Friable, asbestos containing drywall joint compound was found throughout the renovation area. Disturbance to less than one square metre of drywall joint compound may be completed under **Type 2 precautions**. If greater than one square metre, or for removal requiring greater than 3 hours of work, these precautions must be raised to **Type 3**.

8.2 Lead

None of the paint encountered in the work area was found to be lead containing, and no additional precautions are required for impact to painted materials, aside from any applicable asbestos precautions.

8.3 Mould

Indoor air samples collected from within the renovation area were found to be similar in genera and concentration when compared with the outdoor reference. Based on these results, there does not appear to be adverse air quality within the renovation area at this time.

The Client informed TEC that fungal growth had been observed on partition walls beneath the panelling, and on drywall within the heater units during the previous phase of renovations. TEC assessed the inside of the heater units as far as practicable and did not observe any evidence of fungal growth or water staining.

TEC was unable to assess beneath the wall panels without damaging the underlying drywall. As such, intrusive investigation could not be completed. However, current demolition drawings provided, the panel walls, and partition walls are scheduled for full demolition, and any impact must be conducted following the applicable asbestos abatement precautions.

9.0 LIMITATIONS

This report was prepared for the exclusive use of 1x1 Architecture Inc. (the "Client"). This report is based on data and information collected during site visit conducted by Tesseract Environmental Consulting (TEC) and is based solely on site conditions encountered at the time of the site visit. Any use which a third party makes of this report, or any reliance on or discussion to be made based on it, are the sole responsibility of the third party.



The conclusions and recommendations contained in this report are based upon professional opinions with regard to the subject matter. These opinions are in accordance with currently accepted environmental assessment standards and practices applicable to this location and are subject to the following inherent limitations:

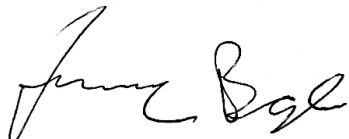
- The data and findings presented in this report are valid as of the date of the investigation. The passage of time, manifestation of latent conditions or occurrence of future events may warrant further exploration at the properties, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in this report.
- Additional hazardous building materials not identified in this report may become evident during renovation or demolition activities. Should additional information become available, TEC requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.
- The findings, observations and conclusions expressed by TEC in this report are not, and should not be considered, an opinion concerning compliance of any past or present owner or operator of the Site with any federal, provincial or local laws or regulations.
- TEC will not be responsible for any real or perceived decrease in a property value, its saleability or ability to gain financing through the reporting of information in this report.
- TEC report presents professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental and occupational health & safety laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental and occupational health & safety laws, rules, regulations or policies of federal, provincial, or local government agencies. Any use of this assessment report constitutes acceptance of the limits of TEC liability. TEC liability extends only to its client and not to other parties who may obtain this assessment report. Issues raised by the report should be reviewed by appropriate legal counsel.
- In evaluating the Site conditions, TEC has relied in good faith on information provided by others. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of the persons involved.
- Any quantities of identified designated substances noted herein are estimated quantities for reporting purposes, and this report is limited in that regard. In the event that designated substances are scheduled to be removed in the future, it is solely the responsibility of the "abatement contractor" to confirm the exact quantities of designated substances to be removed, prior to their removal.

10.0 CLOSURE

If you have any questions regarding the information presented in this report, or require further assistance with environmental health and safety issues related to this, or any other Site, please feel free to contact the undersigned at (204) 250-0125. Thank you for the opportunity to offer our services.

TESSERACT ENVIRONMENTAL CONSULTING INC.

Prepared By:



Trevor Bage
Health and Safety Field Technician

Reviewed By:



Ann McEachern, BSc.
OCCUPATIONAL HYGIENE CONSULTANT

Attachments:

Appendix A – Laboratory Certificates of Analysis – Asbestos

Appendix B – Laboratory Certificates of Analysis – Lead

Appendix C – Laboratory Certificates of Analysis – Mould

Appendix D – Photo Index



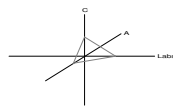
TESSERACT
ENVIRONMENTAL CONSULTING INC.

APPENDIX A

Laboratory Certificate of Analysis – Asbestos

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
1929 Old Denton Road
Carrollton, TX 75006
Phone 972-242-2754
Fax 972-242-2798



CA Labs, L.L.C.
12232 Industripex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tesseract Environmental Consulting

179 McDermot Avenue Suite 111
Winnipeg, Mb R3B 0S1

Customer Project: 20-1x1-0013 SPT-8000 303 Main - 3rd Fl
Reference #: CAL20107355RL Date: 10/09/20

Analysis and Method

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are performed. Calibrated liquid refractive oils are used as liquid mounting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjunction with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". **In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.**

Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

Overview of Project Sample Material Containing Asbestos

Customer Project:			20-1x1-0013 SPT-8000 303 Main - 3rd Floor Reno	CA Labs Project #: CAL20107355RL	
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
85937	303-4	4-1	DJC/ brown surfaced tan compound	2% Chrysotile	brown surfaced tan compound tan compound (beneath tape)
85938	303-5	5-1	DJC/ brown surfaced tan compound	2% Chrysotile	black mastic with foil black mastic on mesh tan compound
85938		5-2	tan compound (beneath tape)	2% Chrysotile	
85939	303-6	6-1	DJC/ tan compound	2% Chrysotile	
85939		6-2	tan compound (beneath tape)	2% Chrysotile	
85940	303-7	7-1	Mastic/ black mastic with foil	4% Chrysotile	
85941	303-8	8-1	Mastic/ black mastic with foil	4% Chrysotile	
85942	303-9	9-1	Mastic/ black mastic with foil	4% Chrysotile	
Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235					
AIHA LAP, LLC Laboratory #102929					

Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate	pe - perlite	fg - fiberglass	pa - palygorskite (clay)
gypsum - gypsum	qu - quartz	mw - mineral wool	
bi - binder		wo - wollastinite	
or - organic		ta - talc	
ma - matrix		sy - synthetic	
mi - mica		ce - cellulose	
ve - vermiculite		br - brucite	
ot - other		ka - kaolin (clay)	

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Overview of Project Sample Material Containing Asbestos

Customer Project:			20-1x1-0013 SPT-8000 303 Main - 3rd Floor Reno	CA Labs Project #: CAL20107355RL	
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
85943	303-10	10-1	Mastic/ black mastic on mesh	4% Chrysotile	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate	pe - perlite	fg - fiberglass	pa - palygorskite (clay)
gypsum - gypsum	qu - quartz	mw - mineral wool	
bi - binder		wo - wollastinite	
or - organic		ta - talc	
ma - matrix		sy - synthetic	
mi - mica		ce - cellulose	
ve - vermiculite		br - brucite	
ot - other		ka - kaolin (clay)	

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Polarized Light Asbestiform Materials Characterization

Customer Info:
Tesseract Environmental Consulting
179 McDermot Avenue Suite 111
Winnipeg, Mb R3B 0S1

Attn:

Customer Project:
20-1x1-0013 SPT-8000 303
Main - 3rd Floor Reno
Turnaround Time:
5 Days

CA Labs Project #:
CAL20107355RL

Date: 10/9/2020

Samples Rec'd: 10/5/20 10:30am

Date Of Sampling: 9/29/2020

Purchase Order #: 20-1x1-0013 SPT-8000

Phone # 204-801-9358
Fax # 204-480-4348

Laboratory Sample ID	Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homo-geneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
85934	303-1		1-1	Plaster/ off-white surfaced white finishing plaster	n	None Detected		100% qu,bi,ca
85934			1-2	gray plaster	y	None Detected		100% qu,ca
85935	303-2		2-1	Plaster/ off-white surfaced white finishing plaster	n	None Detected		100% qu,bi,ca
85935			2-2	gray plaster	y	None Detected		100% qu,ca
85936	303-3		3-1	Plaster/ off-white surfaced white finishing plaster	n	None Detected		100% qu,bi,ca
85936			3-2	gray plaster	y	None Detected		100% qu,ca
85937	303-4		4-1	DJC/ brown surfaced tan compound	n	2% Chrysotile		98% qu,mi,bi,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

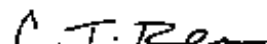
ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:



Stanley Massett
Analyst

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze



Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

Polarized Light Asbestiform Materials Characterization

Customer Info:
Tesseract Environmental Consulting
179 McDermot Avenue Suite 111
Winnipeg, Mb R3B 0S1

Attn:

Customer Project:
20-1x1-0013 SPT-8000 303
Main - 3rd Floor Reno
Turnaround Time:
5 Days

CA Labs Project #:
CAL20107355RL

Date: 10/9/2020

Samples Rec'd: 10/5/20 10:30am

Date Of Sampling: 9/29/2020

Purchase Order #: 20-1x1-0013 SPT-8000

Phone # 204-801-9358
Fax # 204-480-4348

Laboratory Sample ID	Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homo-geneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
85938	303-5		5-1	DJC/ brown surfaced tan compound	n	2% Chrysotile	98% qu,mi,bi,ca	
85938			5-2	tan compound (beneath tape)	y	2% Chrysotile	98% qu,mi,ca	
85939	303-6		6-1	DJC/ tan compound	y	2% Chrysotile	98% qu,mi,ca	
85939			6-2	tan compound (beneath tape)	y	2% Chrysotile	98% qu,mi,ca	
85940	303-7		7-1	Mastic/ black mastic with foil	n	4% Chrysotile	96% qu,ot,bi	
85940			7-2	yellow insulation	y	None Detected	100% fg	
85941	303-8		8-1	Mastic/ black mastic with foil	n	4% Chrysotile	96% qu,bi	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

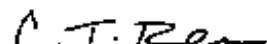
ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:



Stanley Massett
Analyst

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Julio Robles

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Polarized Light Asbestiform Materials Characterization

Customer Info:
Tesseract Environmental Consulting
179 McDermot Avenue Suite 111
Winnipeg, Mb R3B 0S1

Attn:

Customer Project:
20-1x1-0013 SPT-8000 303
Main - 3rd Floor Reno
Turnaround Time:
5 Days

CA Labs Project #:
CAL20107355RL

Date: 10/9/2020

Samples Rec'd: 10/5/20 10:30am

Date Of Sampling: 9/29/2020

Purchase Order #: 20-1x1-0013 SPT-8000

Laboratory Sample ID	Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homo-geneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
85941			8-2	yellow insulation	y	None Detected	100% fg	
85942	303-9		9-1	Mastic/ black mastic with foil	n	4% Chrysotile		96% qu,bi
85942			9-2	yellow insulation	y	None Detected	100% fg	
85943	303-10		10-1	Mastic/ black mastic on mesh	y	4% Chrysotile	6% fg	90% qu,bi
85944	303-11		11-1	Ceiling tile/ white surfacing	y	None Detected		100% qu,bi
85944			11-2	tan ceiling tile	y	None Detected	10% fg 40% ce	50% qu,pe,ma
85945	303-12		12-1	Ceiling tile/ white surfacing	y	None Detected		100% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

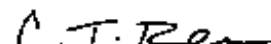
ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:



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Analyst

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Tanner Rasmussen

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Julio Robles

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Polarized Light Asbestiform Materials Characterization

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Attn:
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179 McDermot Avenue Suite 111
Winnipeg, Mb R3B 0S1

Customer Project:
20-1x1-0013 SPT-8000 303
Main - 3rd Floor Reno

CA Labs Project #:
CAL20107355RL

Turnaround Time:
5 Days

Date: 10/9/2020

Samples Rec'd: 10/5/20 10:30am

Date Of Sampling: 9/29/2020

Purchase Order #: 20-1x1-0013 SPT-8000

Laboratory Sample ID	Sample #	Comment	Layer #	Analysts	Physical Description of Subsample	Homo-geneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
85945			12-2		tan ceiling tile	y	None Detected	10% fg 40% ce	50% qu,pe,ma
85946	303-13		13-1		Ceiling tile/ white surfacing	y	None Detected		100% qu,bi
85946			13-2		tan ceiling tile	y	None Detected	10% fg 40% ce	50% qu,pe,ma

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted.

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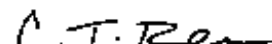
ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot - other	wo - wollastonite	ka - kaolin (clay)
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Approved Signatories:



Stanley Massett
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10. TEM analysis suggested

Senior Analyst
Julio Robles



TESSERACT
ENVIRONMENTAL CONSULTING INC.

APPENDIX B

Laboratory Certificate of Analysis – Lead



Tesseract Environmental Consulting Inc.
ATTN: L. ANN MCEACHERN
109 - 179 McDermot Avenue
Winnipeg MB R3B 0S1

Date Received: 06- OCT- 20
Report Date: 13- OCT- 20 10:09 (MT)
Version: FINAL

Client Phone: 204- 250- 0125

Certificate of Analysis

Lab Work Order #: L2512404

Project P.O. #: NOT SUBMITTED
Job Reference: 303 MAIN - ROOM 303
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-200.2-MS-WP	Soil	Metals	EPA 200.2/6020B (mod)
Soil/sediment is dried, disaggregated, and sieved (2 mm). Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.			
Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H ₂ S) may be excluded if lost during sampling, storage, or digestion.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



12 - 1329 Niakwa Rd. E.
Winnipeg, Manitoba R2J 3T4
Tel: (204) 255-9720
Fax: (204) 255-9721
Toll Free: 1 800 607 7555



L2512404-COFC

Statement of Custody / Analytical Request Form

WORK ORDER NO: 20-181-0013

FOR LABORATORY USE ONLY (SHADED AREAS)

Sample Condition Upon Receipt: ☒ ACCEPTABLE ☐ NON ACCEPTABLE
☐ Frozen ☐ Cold ☒ Ambient ☐ Broken ☐ Leaking ☐ Incorrect Sample Container
COMMENT: OCT 08 2020

LAB NO.:
DATE RECEIVED: OCT 06 2020
TIME RECEIVED: 8:10
BY: Dr TEMP: 21.0

Date Sampled: 2020-09-29 Time: _____ A.M. ☐ P.M. ☒ Date Required: _____

Location: 303 Main - Room 303
(Town, Community, City)

Submitter's Name Printed: Trevor Bagle
Sample Submitted By: Tesseract Environmental

Community Code Number: _____ Rural Municipality/LGC/UV: _____

SAMPLE TYPE

DRINKING WATER
☐ Untreated Well
☐ Treated Well
☐ Treated Municipal
☐ Non-Treated Municipal
☐ Water-Surface-Raw
☐ Water-Surface-Treated
PURPOSE OF TEST
☐ Private ☐ Real Estate ☐ Water Main

PLEASE PRINT & PRESS FIRMLY

NON-DRINKING WATER
☐ Sewage/Waste Water
☐ Lake/River
☐ Swimming Pool
☐ Whirl Pool
☐ Other: _____

NOTES & CONDITIONS

1. Quote number **MUST BE** provided to insure proper pricing.
2. Failure to properly complete all portions of this form may delay analysis.
3. ALS's liability limited to cost of analysis.

SERVICE REQUESTED

☒ REGULAR ☐ PRIORITY ☐ EMERGENCY ☐ SAME DAY
(50% SURCHARGE) (100% SURCHARGE) (200% SURCHARGE)

LAB NUMBER	SAMPLE IDENTIFICATION	ALS CUSTOMER #: <u>W10268</u> QUOTE #:
		REPORT TO BE SENT TO
	<u>303-LP-1 white</u>	NAME: <u>Ann McEachern</u>
	<u>303-LP-2 green</u>	COMPANY: <u>Tesseract Environmental Consulting</u>
		ADDRESS:
		CITY/TOWN: <u>Winnipeg</u> / PROV.: <u>MB</u>
		POSTAL CODE: <u>R3B 0S1</u>
		PHONE: <u>204-255-0125</u>
		BY: MAIL <input type="checkbox"/> FAX <input type="checkbox"/>
		E-MAIL <input checked="" type="checkbox"/> <u>info@tesseractenviro.com</u> (FAX NUMBER)
		(EMAIL ADDRESS)
		CC
		NAME:
		ADDRESS:
		CITY/TOWN: _____ / PROV.: _____
		POSTAL CODE: _____
		PHONE: _____
		BY: MAIL <input type="checkbox"/> FAX <input type="checkbox"/>
		E-MAIL <input type="checkbox"/> _____ (FAX NUMBER)
		(EMAIL ADDRESS)

Analyses required lead in paint

BILLING ADDRESS SAME AS REPORT TO ☒
NAME:
COMPANY:
ADDRESS:
CITY/TOWN: _____ / PROV.: _____
POSTAL CODE: _____

SAMPLING INSTRUCTIONS ON REVERSE SIDE ALS ENVIRONMENTAL

12 - 1329 Niakwa Rd. E., Winnipeg, MB Canada R2J 3T4
Phone: +1 204 255 9720 Fax: +1 204 255 9721 www.alsglobal.com
A Campbell Brothers Limited Company

SUBMITTER COPY

PAYMENT PARTICULARS (CASH NOT ACCEPTED)

☐ INVOICE NEEDED / CLIENT'S P.O. NO. _____
☐ INTERAC
☐ CHEQUE Subtotal \$ _____
☐ VISA G.S.T. \$ _____
☐ MASTERCARD Total \$ _____

* OUR POLICY IS NOT TO ACCEPT SAMPLES FROM THE PRIVATE CITIZEN WITHOUT PREPAYMENT

ENTERED IN LIMS BY: _____



TESSERACT
ENVIRONMENTAL CONSULTING INC.

APPENDIX C

Laboratory Certificate of Analysis – Mould

Crisp Analytical Labs, L.L.C / C.A. Labs, L.L.C.

Client: Tesseract Environmental Consulting Allergenic Particle Report
 Address: 179 McDermot Avenue Suite 111
 Winnipeg, MB R3B 0S1 Analysis: Light Microscopy identificaton of pollen/fungal spore (ASTM 7391-09)
 Attn: Sample media : Air-o-cell / Cyclex D (airborne)

CA Lab Project #: CAL20107354AG Date: 10/9/2020
 Project name: 20-1x1-0013 SPT-8000, 303 Main 3rd Floor Reno.

Client Sample #	1-30115106			2-30115105			3-30114108			4-30115114			5-30115171					
Laboratory Sample #	85929			85930			85931			85932			85933					
Location	Central Area			NE Office			West Office			Prev. Reno'd Area			Outdoor Reference					
Volume	150			150			150			150			150					
Condition	Acceptable			Acceptable			Acceptable			Acceptable			Acceptable					
Alternaria	4	24	20.0	4	24	25.0				4	24	100.0	7	48	2.7			
Ascospores													104	696	39.7			
Basidiospores				4	24	25.0							29	192	11.0			
Chaetomium																		
Cladosporium	11	72	60.0	7	48	50.0	4	24	100.0				97	648	37.0			
Curvularia																		
Dreschslera/Bipolaris-like	4	24	20.0															
Penicillium/Aspergillus-like													11	72	4.1			
Smuts/Myxo/Periconia													14	96	5.5			
Stachybotrys/Memnoniella																		
Ulocladium/Pithomyces																		
Epicoccum																		
unIdentifiable Spores																		
Skin Cells	Present- Medium			Present- Medium			Present- Medium			Present- Low								
Pollen																		
Hyphal fragments				4	24								11	72				
Particulate Rating (0-5)	2			2			2			1			3					
	18	120		14	96		4	24		4	24		263	1,752				
	Total	Cnts./	Per-	Total	Cnts./	Per-	Total	Cnts./	Per-	Total	Cnts./	Per-	Total	Cnts./	Per-	Total	Cnts./	Per-
	Cnts.	m3	cent	Cnts.	m3	cent	Cnts.	m3	cent	Cnts.	m3	cent	Cnts.	m3	cent	Cnts.	m3	cent

Crisp Analytical Labs, LLC 1929 Old Denton Rd. Carrollton, TX 75006

Stanley Massett
 Stanley Massett - Technical Manager
Carolyn Fox
 Carolyn Fox - Analyst

INDOOR AIR QUALITY ALLERGENIC PARTICLE LABORATORY ANALYSIS REPORT

Tesseract Environmental Consulting
179 McDermot Avenue Suite 111
Winnipeg, MB R3B 0S1
phone: 204-801-9358

Reference Number: CAL20107354AG
Turnaround Time: 5 days
PO #: 20-1x1-0013 SPT-8000

Date Analyzed: 10/9/2020
Date Received: 10/5/20 10:30AM
Date Sampled: 9/29/2020

Analytical Method:

The categorization and quantification methodology for airborne fungal structures presented in ASTM D7391-09 has been utilized for the enclosed analyses. Per the requirements of the methodology, as applied to linear slit impactors, greater than 20% of the trace (36.67%; 16 traverses) has been analyzed with all spore category enumeration conducted at 600x magnification (magnification/resolution 2). Under these counting conditions minimum reporting limits for all spore categories are as follows:

<u>Volume:</u>	<u>Minimum Reporting Limit:</u>
75 L	48 fs/m3
150 L	24 fs/m3

Bias:

Bias is present in all types of spore trap cassettes by particle size, capture, spread and counting procedure used. In particular, samples with a particulate/debris rating of 2-4 are subject to negative bias due to spores being obscured by other particles. Particulate/debris ratings of 5 will result in a sample being reported as "Overloaded."

Note:

This test report relates only to items tested. These results are submitted pursuant to CA Labs' current terms and condition of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. If there are concerns about health aspects of known allergens, consult a physician. Pollen and spore types identified are all naturally occurring and may grow anywhere in a natural environment where water is present. While it is normal for fungi to be present inside buildings from outside sources, growth occurs in humid conditions. Fungi cannot spread from building to building, as it is always present, but may not be growing. To control allergens in an area, drying and use of HEPA filters are recommended. Quantification is susceptible to a standard deviation of 100%, dependent on loading. Unless notified in writing to return samples covered by this report, CA Labs will store the samples for thirty (30) days before discarding. A shipping and handling fee may be assessed for the return of any samples. This method is not covered by the scope of NVLAP or AIHA LAP, LLC accreditations, and the report does not imply endorsement by any government agency. This report may not be reproduced except in full, without written permission from CA Labs.

Analysis performed at Crisp Analytical Labs 1929 Old Denton Rd. Carrollton, TX 75006. Phone (972) 242-2754 Fax (972) 242-2798: TDSHS mold analysis #LAB1038
This report is intended for the recipient, only. Please notify us if you have received this document in error. (we will advise you to destroy or return this document.)



TESSERACT
ENVIRONMENTAL CONSULTING INC.

APPENDIX D

Photo Index

Appendix D – Photo Index



Photo 1: North east section of the work area. Green and white paint throughout is non-lead containing. Propped door leads into the previously renovated area.



Photo 2: North section of the work area



Photo 3: Drywall, sealed with asbestos containing joint compound located inside the heater units. No fungal contamination was observed.



Photo 4: Asbestos containing black mastic found on insulated ducting in the ceiling space, and on mechanical lines within the heater units.



Photo 5: Wall panels were installed overtop of asbestos containing drywall materials.



Photo 6: Flooring throughout was observed to be non-suspect carpet applied ontop of concrete subfloor.