

CHEM SOLV

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20848 Dalton Rd. Sutton, Ont. L0E 1R0 P.O. Box 608

Tel: 905-722-6035

DESIGNATED SUBSTANCES SURVEY

OF

PICKERING FIRE STATION #2

LOCATED AT

553 KINGSTON ROAD

PICKERING, ONTARIO



SITE ASSESSMENT DATE: JANUARY 9, 2018

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EXECUTIVE SUMMARY

A site survey evaluation and physical sampling assessment for Designated Substances and hazardous materials was completed on January 9, 2018 at the Pickering Fire Station #2 building located at 553 Kingston Road, Pickering.

The most significant finding with respect to the above scope of work was that no asbestos containing building materials were identified in any of the candidate building materials of the Pickering Fire Station #2 building located at 553 Kingston Road.

The Ontario *Occupational Health and Safety Act* and specifically the Designated Substances Regulation covering asbestos, under Ontario Regulation 278/05 define asbestos containing material as 0.5 % or higher asbestos containing material. All samples were non detect for asbestos.*(Laboratory Analysis Tables Attached)

The accessible wall paint in the Pickering Fire Station #2 building areas were determined to have comparatively very low lead content in the applied paint, ranging from 8 ug/g to a maximum of 260 ug/g.

There was no mercury containing thermostats pressure gauges, electrical relays switches or gauges noted to be present within the subject structural building located at 553 Kingston Road, Pickering, Ontario.

No other "Designated Substances", of significance including acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, silica or vinyl chloride were noted to be present in the identified subject building areas.

There were several 5 gallon containers of liquid fire retardant materials stored at the site. These liquid fire retardant materials are used for support of the on-site fire fighting equipment and were noted to be in labelled secure designed storage containers. The 5 gallon containers are portable and are staged in a storage room area that was noted to be free of any spills and surface stains.

There were no indications of significant historical observable water ingress, stains, pronounced odours or associated mould growths in the Pickering Fire Station #2 building room areas located at 553 Kingston Road. Although beyond the scope of this assessment, the main floor HVAC duct was noted to be very dusty and is recommended to be cleaned. (See HVAC - Duct Photo)

SCOPE

The Designated Substances Building Assessment completed on January 9, 2018 specifically included the interior of the Pickering Fire Station #2 building located at 553 Kingston Road, Pickering, Ontario.

The scope of the sampling conducted on January 9, 2018 was determined following a site inspection and discussions with City of Pickering personnel, review of the site construction and usage, and specifically included the listed building areas, as noted in the following site photos and attached laboratory sampling report.

Eleven substances have been “designated” in Ontario - acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica and vinyl chloride.

Only four of these eleven substances are commonly encountered in constructed building assessment surveys and may typically include:

- asbestos in building materials;
- lead in paint applications and in solder used in wiring and joints of copper pipe;
- mercury in thermometers, pressure gauges, electrical switches and relays, and as a preservative in some paints; and
- silica in concrete, masonry, stone and boiler refractory.

The Ontario *Occupational Health and Safety Act* (Sec. 30) requires that a list of all designated substances at a project site be provided to all bidders at the tendering stage. This information allows contractors involved in demolition or renovation activities to take appropriate steps to control exposure of workers and the general public to the designated substances present.

Within the scope of Chem Solv’s services, the Designated Substance Survey (DSS) was completed to identify if designated substances present, and their locations and concentrations. This served as a baseline investigation of the subject building.

Chem Solv provided the following services for the facility assessment and/or remediation of designated substances including:

- site inspection to establish the likely presence of designated substances;
- collection of representative suspect building samples for laboratory and direct analysis;
- a determination of the type and percentage in materials if any designated substances present.

Chem Solv completed the OHSA Section 30 assessments by:

- Conducting a Designated Substance Assessment to determine if any designated substances, specifically acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica and vinyl chloride are present at the constructed building site, and preparing the designated substance list.

SUMMARY OF PHYSICAL SITE EVALUATION ASSESSMENT FINDINGS:

ASBESTOS

The most significant finding with respect to the above scope of work was that no asbestos containing building materials were identified in any of the candidate building materials of the Pickering Fire Station #2 building located at 553 Kingston Road.

The Ontario *Occupational Health and Safety Act* and specifically the Designated Substances Regulation covering asbestos, under Ontario Regulation 278/05 and under Ont. Reg 148/12 define asbestos containing material as 0.5 % or higher asbestos containing material.

Definitions ;

1. (1) In this Regulation,
“asbestos” means any of the fibrous silicates listed in subsection (2);
“asbestos-containing material” means material that contains 0.5 per cent or more asbestos by dry weight; ($\geq 0.5\%$).

Thirty (30) multiphase candidate asbestos samples were collected in the scope of this site designated substances asbestos assessment.

All samples were non detect for asbestos

A photos summary of the site sampling locations is provided. The Laboratory Analysis are also Attached.

It was noted that the main floor lounge, kitchen, washroom and sleeping quarter's areas are scheduled for renovations and reconstructions.

SITE PHOTOS

JANUARY 9, 2018

FIRE STATION #2 – 553 KINGSTON ROAD



Apparatus Bay - Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Apparatus Bay - Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Apparatus Bay - Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Apparatus Bay - Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Hose Room - Piping Elbows and Piping T & End Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Hose Room - Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Basement - Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Basement Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Basement Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



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Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Basement Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Basement Water Meter Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Basement Mechanical Room Piping Elbows and Piping T Joints
Canvas Wrapped Applied White, Cementitious Insulations
Not Asbestos Containing



Main Floor Kitchen/Lounge/Sleeping Areas - T-Bar 2'X3' Ceiling Tiles
White with Fibrous Glass Material
Not Asbestos Containing



Main Floor Kitchen/Lounge/Sleeping Areas - T-Bar 2'X3' Ceiling Tiles
White with Fibrous Glass Material
Not Asbestos Containing



Main Floor Kitchen/Lounge/Sleeping Areas – 12” x 12” Vinyl Floor Tiles
Beige White Flecked and Black Mastic Material
Not Asbestos Containing



Main Floor Kitchen/Lounge/Sleeping Areas – 12” x 12” Vinyl Floor Tiles
Beige White Flecked and Black Mastic Material
Not Asbestos Containing

(Note; HVAC Duct Dust Accumulation)

LEAD

The accessible wall paint in the Pickering Fire Station #2 building areas were determined to have comparatively very low lead content in the applied paint, ranging from 8 ug/g to a maximum of 260 ug/g.

The facility applied accessible surface paints were generally in good repair with no significant loss of adhesion, peeling, flaking or crazing or deteriorations noted.

Applied paint was measured using a DELTA Lead Paint Handheld XRF Analyzer with candidate samples submitted for subsequent laboratory analysis. All direct reading samples were below detection of the XRF at less than < 50 ug/g.

Lead solder used in wiring and joints of copper pipe, was noted to be present in the subject building. This is not considered a significant lead concentration for the prescribed demolition activities proposed and remediation is also not generally recommended to be completed as per the promulgated regulations or issued guidelines covering lead as a designated substance for these materials.

As a note, in general, the presence of lead base paints (LBP's) in buildings represents the most significant hazard for lead containing products where persons, notably small children, may ingest peeling or flaking LBP's. The generation of airborne lead containing dust as may be created during renovations, demolition, or construction activities, (ie. during sanding or grinding) or similar activities on deteriorated paint surfaces also represents a potential health concern.

Lead, being a common component in paint, particularly in older buildings where lead concentrations may be very high, can be a significant issue, especially in residential or institutional facilities. Paints, enamels and other liquid coating materials for use on the interior and exterior surfaces of buildings are classified as "restricted products" under the Federal *Hazardous Products Act* if they contain more than 0.5 percent weight-to-weight (5,000 ppm or ug/g) of lead.

In 1976, the Federal Government passed the Hazardous Products (Liquid Coating Materials) regulations under the Hazardous Products Act limiting the amount of lead for interior paints to 0.5%. Exterior and commercial paint could still contain lead. In 1991 members of the Canadian Paint and Coatings Association agreed to voluntarily eliminate all added lead from their products. In April 2005, under the Canadian Hazardous Products Act, the federal Government issued the Surface Coatings Materials Regulations SOR/2005-109, which limits the amount of lead permissible in paints and other surface coating materials to 0.009% lead by dry weight, (90 milligrams/kilogram – 90 ug/g).



Main Floor – Painted Block Wall – White and Yellow

8 ug/g to 260 ug/g Lead

From the Surface Coatings Materials Regulations SOR/2005-109;

The concentration of total lead present in a surface coating material must not be more than 90 mg/kg (0.009% or 90 ug/g) when a dried sample of it is tested in accordance with a method that conforms to good laboratory practices.

Exceptions;

Subsection (1 above) does not apply to a surface coating material that is used

(a) as an anti-corrosive or an anti-weathering coating applied on the interior or exterior surface of any building or equipment that is used for an agricultural or industrial purpose;

(b) as an anti-corrosive or an anti-weathering coating applied on any structure, other than a building, that is used for an agricultural, industrial or public purpose;

If the concentration of total lead present in a surface coating material that is used for a purpose described is more than 90 mg/kg, the example display panel must contain the following information or its equivalent:

DANGER

CONTAINS LEAD / CONTIENT DU PLOMB

DO NOT APPLY TO SURFACES ACCESSIBLE TO CHILDREN OR PREGNANT WOMEN

The Surface Coatings Materials Regulations SOR/2005-109, made under the hazardous Materials Act, which limits the amount of lead permissible in paints and other surface coating materials to 0.009% lead by dry weight, (90 milligrams/kilogram), suggest that applied paint that is at or above this criteria be considered as lead containing.

It should be noted that there are presently no existing governmental regulations covering the control of lead based paints on construction or renovation projects, although a Guideline addressing lead on construction projects has been issued by the Ontario Ministry of Labour. (Guideline Attached)

MERCURY

There was no mercury containing thermostats pressure gauges, electrical relays switches or gauges noted to be present in the Pickering Fire Station #2 building located at the 553 Kingston Road.

The use of mercury may be present as a preservative in some paints, but this issue was not specifically covered in the scope of this assessment and is not considered significant with respect to the scheduled facility demolition works.

The facility is in compliance with the promulgated regulations covering mercury in Buildings and Demolition Projects – made under the Ontario Occupational Health and Safety Act, specifically mercury as a designated substance (R.R.O. 1990, Reg. 844), with consolidating Regulation 490/09 as amended by 148/12.

SILICA

Silica in the concrete, masonry and fill stone at the site may be present as a concrete formulation component. There was no silica containing refractory material or loose crystalline silica noted to be present at this subject site.

The Ministry of Labour has published a draft guideline for control of exposure to silica on construction projects. The procedures defined in the guideline are similar to those in the Lead guideline.

The facility is in compliance with the promulgated regulations covering silica in Buildings and Demolition Projects – made under the Ontario Occupational Health and Safety Act, specifically silica as a designated substance (R.R.O. 1990, Reg. 845), with consolidating Regulation 490/09 as amended by 148/12.

ACRYLONITRILE, ARSENIC, BENZENE, COKE OVEN EMISSIONS, ETHYLENE OXIDE, ISOCYANATES, SILICA OR VINYL CHLORIDE

No other substances listed as “designated” in Ontario, including acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates or vinyl chloride were noted to be present at the Pickering Fire Station #2 building site in any observable or significant quantities.

HAZARDOUS MATERIALS ASSESSEMENT

There were no significant hazardous materials noted to be present in the Pickering Fire Station #2 building facility other than comparatively small quantities of janitorial cleaning supplies and some paint materials used for regular building maintenance.



There were several 5 gallon containers of liquid fire retardant materials stored at the site. (Photo Above) These liquid fire retardant materials are used for support of the on-site fire fighting equipment and were noted to be in labelled secure designed storage containers. The 5 gallon containers are portable and are staged in a storage room area that was noted to be free of any spills and surface stains.

There were no indications of significant historical observable water ingress, stains, pronounced odours or associated mould growths in the Pickering Fire Station #2 building room areas located at 553 Kingston Road.

OZONE DEPLETING SUBSTANCES

There were no noted ozone depleting substances noted to be present Pickering Fire Station #2 building located at 553 Kingston Road, Pickering, Ontario.

No samples of refrigerants were taken as part of this investigation. Based on the age of the kitchen refrigeration equipment CFC's are likely to be present in minor quantities as coolants in the refrigeration unit.

PCB CONTAINING MATERIAL

Newer T8 fluorescent light fixtures were identified in the Pickering Fire Station #2 building located at 553 Kingston Road, Pickering, Ontario, and these internal ballasts are not suspected to contain PCB's.

No suspect leakage was observed on the exterior casing of the inspected ballasts.

No bulk sampling of suspected PCB-containing materials was performed during this assessment.

Fluorescent light ballasts designated for removal should have serial numbers and date stamps accessed to determine if ballasts are PCB containing. For all Canadian General Electric ballasts ending in T the ballast capacitor may contain PCB's. The date code stamped on the back of the ballast housing or on the name plate may help to more accurately determine whether the ballast contains PCBs. Ballasts manufactured before March 1978 could potentially contain PCB capacitors.

SUMMARY OF FINDINGS AND CONCLUSIONS

A site survey evaluation and physical sampling assessment for Designated Substances and hazardous materials was completed on January 9, 2018 at the Pickering Fire Station #2 building located at 553 Kingston Road, Pickering.

The most significant finding with respect to the above scope of work was that no asbestos containing building materials were identified in any of the candidate building materials of the Pickering Fire Station #2 building located at 553 Kingston Road.

The Ontario *Occupational Health and Safety Act* and specifically the Designated Substances Regulation covering asbestos, under Ontario Regulation 278/05 define asbestos containing material as 0.5 % or higher asbestos containing material. All samples were non detect for asbestos.*(Laboratory Analysis Tables Attached)

The accessible wall paint in the Pickering Fire Station #2 building areas were determined to have comparatively very low lead content in the applied paint, ranging from 8 ug/g to a maximum of 260 ug/g.

There was no mercury containing thermostats pressure gauges, electrical relays switches or gauges noted to be present within the subject structural building located at 553 Kingston Road, Pickering, Ontario.

No other "Designated Substances", of significance including acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, silica or vinyl chloride were noted to be present in the identified subject building areas.

There were several 5 gallon containers of liquid fire retardant materials stored at the site. These liquid fire retardant materials are used for support of the on-site fire fighting equipment and were noted to be in labelled secure designed storage containers. The 5 gallon containers are portable and are staged in a storage room area that was noted to be free of any spills and surface stains.

There were no indications of significant historical observable water ingress, stains, pronounced odours or associated mould growths in the Pickering Fire Station #2 building room areas located at 553 Kingston Road. Although beyond the scope of this assessment, the main floor HVAC duct was noted to be very dusty and is recommended to be cleaned. (See HVAC - Duct Photo)

RECOMMENDATIONS

With respect to the January 9, 2018 site assessment findings, no further recommendations are provided other than to file and have the Designated Substances Summary report available for review and communication to occupants and for any proposed building renovations and constructions.

CLOSURE AND LIMITATIONS

Although every professional effort is made to ensure a representative and accurate site assessment, an environmental site characterization is a limited sampling of a site. The conclusions provided within this report are based on information collected at specific site locations and can only be extrapolated to the defined limited area associated with the listed locations. The extent of the limited area can depend on the site conditions as well as site history reflecting natural and other site activities. In addition, analysis has been carried out for the specific representative listed parameters, and it is not inferred that other specific chemicals or species are not present.

Owing to the age of construction the building, and inaccessibility of some areas, it is possible that additional, unidentified, designated substance containing building materials may be present at the building facilities.

Additionally, there may be some areas that could not be sampled owing to inaccessibility or that sampling may cause significant damage to the building, materials or devices. These areas may include but are not limited to;

- components or wiring within motors or lights
- high voltage wiring
- mechanical packing, ropes or gaskets
- exterior cladding, soffit or fascia boards at elevated heights
- door cores, (fire doors and soundproof doors)
- window caulking
- demountable fire resistant metal clad walls or panels
- roofing, roofing felt and building paper
- mastics, adhesives and tars
- vermiculite above solid ceilings, or inside wall block or masonry
- molded plastic or composite components such as laboratory bench tops/chairs
- underground services or piping
- paper products used under flooring or under fixed roofing
- concrete beveling compounds (under floors)
- refractory brick or boiler and chimney construction components

Reasonable care should be exercised if other suspect designated or specific asbestos containing building materials are encountered during any service or scheduled demolition/repair works.

Report prepared by;



Peter Robertson, B.Sc., CET, CEI

Summary report date: January 29, 2018

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SAMPLING BULK MATERIAL SAMPLES

O. Reg. 278/05, s. 26.

Table 1
Bulk material samples
Subsection 3 (3)

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as a coustical plaster on ceilings and fireproofing materials on structural members	Less than 90 square metres	3
		90 or more square metres, but less than 450 square metres	5
		450 or more square metres	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
4.	Other material	Any size	3

O. Reg. 278/05, Table 1.

CERTIFICATES OF LABORATORY ANALYSIS

Laboratory Analysis Report

To:

Peter Robertson
 Chem Solv
 20848 Dalton Road, Box 608
 Sutton, Ontario
 L0E 1R0

EMC LAB REPORT NUMBER: A36674

Job/Project Name: Pickering Fire Station #2

Analysis Method: Polarized Light Microscopy – EPA 600

Date Received: Jan 19/18 **Date Analyzed:** Jan 26/18

Analyst: Chengming Li, Analyst

Reviewed By: Fajun Chen, Ph.D., Laboratory Director

Job No:

Number of Samples: 30

Date Reported: Jan 26/18



Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
1	A36674-1	Apparatus bay rain leader elbow	Grey, cementitious material with fibres	ND	20	80
2	A36674-2	Apparatus bay rain leader elbow	Grey, cementitious material with fibres	ND	20	80
3	A36674-3	Apparatus bay rain leader elbow	Grey, cementitious material with fibres	ND	20	80
4	A36674-4	Apparatus room rain roof collar	Grey, cementitious material with fibres	ND	20	80
5	A36674-5	Room hose rain leader pipe elbow	Grey, cementitious material with fibres	ND	20	80
6	A36674-6	Hose room rain leader pipe elbow	Grey, cementitious material with fibres	ND	20	80
7	A36674-7	2'x3' ceiling tile lunch room	White, drywall	ND	1	99
8	A36674-8	2'x3' ceiling tile lunch room	White, drywall	ND	1	99
9	A36674-9	2'x3' ceiling tile lunch room	White, drywall	ND	1	99
10	A36674-10	Lunch room 12"12" beige flecked floor tile mastic	2 Phases: a) Beige, vinyl floor tile b) Black, mastic	ND ND		100 100
11	A36674-11	Lunch room 12"12" beige flecked floor tile	2 Phases: a) Beige, vinyl floor tile b) Yellow, mastic	ND ND		100 100
12	A36674-12	Lunch room 12"12" beige flecked floor tile mastic	2 Phases: a) Beige, vinyl floor tile	ND		100

EMC Scientific Inc. 5800 Ambler Drive • Suite 100 • Mississauga • Ontario • L4W 4J4 • T. 905 629 9247 • F. 905 629 2607
 EMC Scientific Inc. is Accredited by NVLAP (NVLAP Code 201020-0) for Bulk Asbestos Analysis

EMC LAB REPORT NUMBER: A36674
 Client's Job/Project Name/No.: Pickering Fire Station #2
 Analyst: Chengming Li, Analyst

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
13	A36674-13	Grey flecked 12"x12" floor tile sleeping area	b) Black, mastic 2 Phases: a) Grey, vinyl floor tile b) Brown and black, mastic	ND		100
14	A36674-14	Grey flecked 12"x12" floor tile sleeping room	2 Phases: a) Grey, vinyl floor tile b) Brown and black, mastic	ND		100
15	A36674-15	Grey flecked 12"x12" floor tile sleeping room	2 Phases: a) Grey, vinyl floor tile b) Brown and black, mastic	ND		100
16	A36674-16	Basement fitness room 1/2" pipe hot elbow	Grey, cementitious material with fibres	ND	20	80
17	A36674-17	Basement fitness room 1/2" pipe elbow	Grey, cementitious material with fibres	ND	20	80
18	A36674-18	Basement fitness room 1/2" pipe elbow	Grey, cementitious material with fibres	ND	20	80
19	A36674-19	Basement inlet water pipe elbow	Grey, cementitious material with fibres	ND	20	80
20	A36674-20	Basement inlet water pipe elbow	Grey, cementitious material with fibres	ND	20	80
21	A36674-21	Basement inlet water pipe elbow	Grey, cementitious material with fibres	ND	20	80
22	A36674-22	Basement rain leader pipe elbow	Grey, cementitious material with fibres	ND	20	80
23	A36674-23	Basement rain leader pipe elbow	Grey, cementitious material with fibres	ND	20	80
24	A36674-24	Basement rain leader pipe elbow	Grey, cementitious material with fibres	ND	20	80

EMC LAB REPORT NUMBER: A36674
 Client's Job/Project Name/No.: Pickering Fire Station #2
 Analyst: Chengming Li, Analyst

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)		
				Asbestos Fibres	Non-asbestos Fibres	Non-fibrous Material
25	A36674-25	Basement furnace room pipe end insulation	Grey, cementitious material with fibres	ND	20	80
26	A36674-26	Basement furnace room pipe end insulation	Grey, cementitious material with fibres	ND	20	80
27	A36674-27	Basement furnace room pipe end insulation	Grey, cementitious material with fibres	ND	20	80
28	A36674-28	Captains office drywall seam	Grey, drywall	ND	1	99
29	A36674-29	Captains office drywall seam	White, joint compound	ND		100
30	A36674-30 ⁵	Captains office drywall seam	Off-white, joint compound	ND		100

Note:

1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method. The results are only related to the samples analyzed. ND = None Detected (no asbestos fibres were observed), NA = Not Analyzed (analysis stopped due to a previous positive result).
2. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
3. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.
4. This sample is small in size.
5. Vinyl floor tiles may contain very fine asbestos fibres which the PLM method cannot detect. TEM analysis may be necessary to confirm the absence of asbestos.
6. Vinyl floor tiles may contain very fine asbestos fibres which the PLM method cannot detect. TEM analysis may be necessary to confirm the absence of asbestos.

C.O.C.: ---

REPORT No. B18-01954

Report To:

EMC Scientific Inc.
 5800 Ambler Dr. #100,
 Mississauga ON L4W 4J4 Canada
Attention: Alister Haddad

Caduceon Environmental Laboratories
 2378 Holly Lane
 Ottawa Ontario K1V 7P1
 Tel: 613-526-0123
 Fax: 613-526-1244

DATE RECEIVED: 22-Jan-18

JOB/PROJECT NO.: Pickering Fire Station #2

DATE REPORTED: 22-Jan-18

P.O. NUMBER:

SAMPLE MATRIX: Paint Chips

WATERWORKS NO.

Parameter	Lead				
Units	µg/g				
R.L.	5				
Reference Method	EPA 6010				
Date Analyzed/Site	22-Jan-18/O				
Client I.D.	Sample I.D.	Date Collected			
31 - Apparatus Bay White	B18-01954-1	19-Jan-18	8		
32 - Living Quarters White	B18-01954-2	19-Jan-18	260		



Greg Clarkin, BSc., C. Chem
 Lab Manager - Ottawa District

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill, B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

CHEM SOLV

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Tel: 905-722-6035

LABORATORY ANALYSIS REPORT

Sample Date: January 9, 2018

Sample Location: Pickering Fire Station #2– 553 Kingston Road, Pickering, Ontario

Sample Locations – Painted Wall Surfaces

SAMPLE PARAMETERS Lead Analysis	Sample Results (ug/g)
MAIN FLOOR WALL PAINT WHITE LAB SAMPLE 1	260
MAIN FLOOR WALL PAINT YELLOW LAB SAMPLE 2	8
MAIN FLOOR - HALLWAY WALL PAINT YELLOW FLIR SAMPLE A	< 0.05 %
MAIN FLOOR – APPARATUS BAY WALL PAINT YELLOW FLIR SAMPLE B	< 0.05 %
MAIN FLOOR - HALLWAY WALL PAINT WHITE FLIR SAMPLE C	< 0.05 %
MAIN FLOOR – LOUNGE/KITCHEN WALL PAINT WHITE FLIR SAMPLE D	< 0.05 %
MAIN FLOOR – ENTRANCE FOYER WALL PAINT WHITE/YELLOW FLIR SAMPLE E	< 0.05 %

Lead may also be a component of pipes or in solder on pipe fittings, and glazing on some ceramic tile surfaces.

The Surface Coatings Materials Regulations SOR/2005-109, made under the hazardous Materials Act, which limits the amount of lead permissible in paints and other surface coating materials to 0.009% lead by dry weight, (90 milligrams/kilogram), suggest that applied paint that is at or above this criteria be considered as lead containing. It should be noted that there are presently no existing governmental regulations covering the control of lead based paints on construction or renovation projects, although a Guideline addressing lead on construction projects has been issued by the Ontario Ministry of Labour. (Guideline Attached)

EXCERPTS

Occupational Health and Safety Act Loi sur la santé et la sécurité au travail ONTARIO REGULATION 278/05

No Amendments

Designated Substance — asbestos on construction projects and in buildings and repair operations

Notice of Currency:* This document is up to date.

*This notice is usually current to within two business days of accessing this document. For more current amendment information, see the Table of Regulations – Legislative History Overview.

This Regulation is made in English only.

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Definitions

1. (1) In this Regulation,
- “asbestos” means any of the fibrous silicates listed in subsection (2);
- “asbestos-containing material” means material that contains 0.5 per cent or more asbestos by dry weight;
- “building” means any structure, vault, chamber or tunnel including, without limitation, the electrical, plumbing, heating and air handling equipment (including rigid duct work) of the structure, vault, chamber or tunnel;
- “competent worker”, in relation to specific work, means a worker who,
- is qualified because of knowledge, training and experience to perform the work,
 - is familiar with the Act and with the provisions of the regulations that apply to the work, and
 - has knowledge of all potential or actual danger to health or safety in the work;
- “demolition” includes dismantling and breaking up;
- “examine”, when used with reference to material, means to carry out procedures in accordance with section 3 to establish its asbestos content and to establish the type of asbestos, and “examination” has a corresponding meaning;
- “friable material” means material that,
- when dry, can be crumbled, pulverized or powdered by hand pressure, or
 - is crumbled, pulverized or powdered;
- “HEPA filter” means a high efficiency particulate aerosol filter that is at least 99.97 per cent efficient in collecting a 0.3 micrometre aerosol;
- “homogeneous material” means material that is uniform in colour and texture;
- “joint health and safety committee” means,
- a joint health and safety committee established under section 9 of the Act,
 - a similar committee described in subsection 9 (4) of the Act, or
 - the workers or their representatives who participate in an arrangement, program or system described in subsection 9 (4) of the Act;
- “occupier” has the same meaning as in the Occupiers’ Liability Act;
- “Type 1 operation” means an operation described in subsection 12 (2);
- “Type 2 operation” means an operation described in subsection 12 (3);
- “Type 3 operation” means an operation described in subsection 12 (4). O. Reg. 278/05, s. 1 (1).

(2) The fibrous silicates referred to in the definition of “asbestos” in subsection (1) are:

- Actinolite.
- Amosite.
- Anthophyllite.
- Chrysotile.
- Crocidolite.
- Tremolite. O. Reg. 278/05, s. 1 (2).

Application

2. (1) This Regulation applies to,
- every project, its owner, and every constructor, employer and worker engaged in or on the project;
 - the repair, alteration or maintenance of a building, the owner of the building, and every employer and worker engaged in the repair, alteration or maintenance;
 - every building in which material that may be asbestos-containing material has been used, and the owner of the building;
 - the demolition of machinery, equipment, aircraft, ships, locomotives, railway cars and vehicles, and every employer and worker engaged in the demolition; and
 - subject to subsection (3),
 - work described in subsection (2) in which asbestos-containing material is likely to be handled, dealt with, disturbed or removed, and
 - every employer and worker engaged in the work. O. Reg. 278/05, s. 2 (1).
- (2) Clause (1) (e) applies to,
- the repair, alteration or maintenance of machinery, equipment, aircraft, ships, locomotives, railway cars and vehicles; and
 - work on a building that is necessarily incidental to the repair, alteration or maintenance of machinery or equipment. O. Reg. 278/05, s. 2 (2).
- (3) This Regulation does not apply to an employer to whom Regulation 837 of the Revised Regulations of Ontario, 1990 (Designated Substance — Asbestos) applies in respect of those workers employed by the employer and engaged in the

activities described in clause (1) (e) if the employer has on or before December 16, 1985 put into effect and maintained measures and procedures to control the exposure of workers to asbestos and has incorporated the same in an asbestos control program in accordance with Regulation 837 of the Revised Regulations of Ontario, 1990. O. Reg. 278/05, s. 2 (3).

(4) This Regulation does not apply to an owner of a private residence occupied by the owner or the owner's family or to an owner of a residential building that contains not more than four dwelling units, one of which is occupied by the registered owner or family of the registered owner. O. Reg. 278/05, s. 2 (4).

Adoption of standard

3. (1) For the purposes of this Regulation, the method and procedures for establishing whether material is asbestos-containing material and for establishing its asbestos content and the type of asbestos shall be in accordance with the following standard:

1. U.S. Environmental Protection Agency. Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials. June 1993. O. Reg. 278/05, s. 3 (1).

(2) The procedures required by subsection (1) shall be carried out on bulk material samples that are randomly collected by a competent worker and are representative of each area of homogeneous material. O. Reg. 278/05, s. 3 (2).

(3) The minimum number of bulk material samples to be collected from an area of homogeneous material is set out in Table 1. O. Reg. 278/05, s. 3 (3).

(4) If analysis establishes that a bulk material sample contains 0.5 per cent or more asbestos by dry weight,

(a) it is not necessary to analyze other bulk material samples taken from the same area of homogeneous material; and

(b) the entire area of homogeneous material from which the bulk material sample was taken is deemed to be asbestos-containing material. O. Reg. 278/05, s. 3 (4).

Restrictions re sprayed material, insulation, sealants

4. (1) No person shall apply or install or cause to be applied or installed, by spraying, material containing 0.1 per cent or more asbestos by dry weight that can become friable. O. Reg. 278/05, s. 4 (1).

(2) No person shall apply or install or cause to be applied or installed, as thermal insulation, material containing 0.1 per cent or more asbestos by dry weight that can become friable. O. Reg. 278/05, s. 4 (2).

(3) A liquid sealant shall not be applied to friable asbestos-containing material if,

(a) the material has visibly deteriorated; or

(b) the material's strength and its adhesion to the underlying materials and surfaces are insufficient to support its weight and the weight of the sealant. O. Reg. 278/05, s. 4 (3).

Information for workers

5. (1) This section applies whenever a worker is to do work that,

(a) involves material that,

(i) is asbestos-containing material,

(ii) is being treated as if it were asbestos-containing material,

(iii) is the subject of advice under section 9 or a notice under subsection 10 (8); or

(b) is to be carried on in close proximity to material described in clause (a) and may disturb it. O. Reg. 278/05, s. 5 (1).

(2) The constructor or employer shall advise the worker and provide him or her with the following information:

1. The location of all material described in clause (1) (a).

2. For each location, whether the material is friable or non-friable.

3. In the case of sprayed-on friable material, for each location,

i. if the material is known to be asbestos-containing material, the type of asbestos, if known, or

ii. in any other case, a statement that the material will be treated as though it contained a type of asbestos

other than chrysotile. O. Reg. 278/05, s. 5 (2).

Demolition

6. (1) The demolition of all or part of machinery, equipment, a building, aircraft, locomotive, railway car, vehicle or ship shall be carried out or continued only when any asbestos-containing material that may be disturbed during the work has been removed to the extent practicable. O. Reg. 278/05, s. 6 (1).

(2) Subsection (1) does not apply so as to prevent work necessary to gain access to the asbestos-containing material that is to be removed, if the workers doing the work are protected from the hazard. O. Reg. 278/05, s. 6 (2).

Ongoing asbestos management in buildings, two-year transitional period

7. (1) This section does not apply on or after November 1, 2007. O. Reg. 278/05, s. 7 (1).

(2) Subsection (3) applies if,

(a) the owner of a building treats friable material that has been used in the building for any purpose related to it, including insulation and fireproofing, as if it were asbestos-containing material;

(b) the owner of a building has been advised under section 9 of the discovery of friable material that may be asbestos-containing material;

(c) the owner of a building knows or ought reasonably to know that friable asbestos-containing material has been used in a building for any purpose related to the building, including insulation, and fireproofing;

(d) an examination under subsection (8) or section 10 establishes, or would have established if carried out as required, that friable asbestos-containing material has been used in a building for any purpose related to the building, including insulation and fireproofing; or

(e) a constructor or employer notifies the owner of a building, in accordance with subsection 10 (8), of the discovery of friable material that may be asbestos-containing material and that was not referred to in a report prepared under subsection 10 (4). O. Reg. 278/05, s. 7 (2).

(3) If this subsection applies, the owner shall,

(a) prepare and keep on the premises a record containing the information set out in subsection (4);

(b) give any other person who is an occupier of the building written notice of any information in the record that relates to the area occupied by the person;

(c) give any employer with whom the owner arranges or contracts for work that is not described in clause 10 (1) (a) written notice of the information in the record, if the work,

(i) may involve material mentioned in the record, or

(ii) may be carried on in close proximity to such material and may disturb it;

(d) advise the workers employed by the owner who work in the building of the information in the record, if the workers may do work that,

(i) involves material mentioned in the record, or

(ii) is to be carried on in close proximity to such material and may disturb it;

(e) establish and maintain, for the training and instruction of every worker employed by the owner who works in the building and may do work described in clause (d), a program dealing with,

(i) the hazards of asbestos exposure,

(ii) the use, care and disposal of protective equipment and clothing to be used and worn when doing the work,

(iii) personal hygiene to be observed when doing the work, and

(iv) the measures and procedures prescribed by this Regulation; and

(f) inspect the material mentioned in the record at reasonable intervals in order to determine its condition. O. Reg. 278/05, s. 7 (3).

(4) The record shall contain the following information:

1. The location of all material described in clauses (2) (a), (b), (c), (d) and (e).

2. In the case of sprayed-on material, for each location,

i. if the material is known to be asbestos-containing material, the type of asbestos, if known, or

ii. in any other case, a statement that the material will be treated as though it contained a type of asbestos other than chrysotile. O. Reg. 278/05, s. 7 (4).

(5) The owner shall update the record described in clause (3) (a),

(a) at least once in each 12-month period; and

(b) whenever the owner becomes aware of new information relating to the matters the record deals with. O. Reg. 278/05, s. 7 (5).

(6) If updating under subsection (5) results in any change to the record, clauses (3) (b), (c) and (d) apply with necessary modifications. O. Reg. 278/05, s. 7 (6).

(7) An occupier who receives a notice under clause (3) (b) is responsible for performing the duties set out in clauses (3) (d) and (e) with respect to the occupier's own workers. O. Reg. 278/05, s. 7 (7).

(8) If it is readily apparent that friable material used in a building as fireproofing or a coustical or thermal insulation has fallen and is being disturbed so that exposure to the material is likely to occur,

(a) the owner shall cause the material to be examined to establish whether it is asbestos-containing material; and

(b) until it has been established whether the material is a asbestos-containing material, no further work involving the material shall be done. O. Reg. 278/05, s. 7 (8).

(9) Subsection (8) does not apply if the work is carried out in accordance with this Regulation as though the material were a asbestos-containing material and, in the case of sprayed-on material, as though it contained a type of asbestos other than chrysotile. O. Reg. 278/05, s. 7 (9).

(10) If the examination mentioned in subsection (8) establishes that the material is a asbestos-containing material, or if the material is treated as though it were a asbestos-containing material as described in subsection (9),

- (a) the owner shall cause the fallen material to be cleaned up and removed; and
- (b) if it is readily apparent that material will continue to fall because of the deterioration of the fireproofing or insulation, the owner shall repair, seal, remove or permanently enclose the fireproofing or insulation. O. Reg. 278/05, s. 7 (10).

(11) Subsection (10) does not apply if the fallen material is confined to an area that is,

- (a) above a closed false ceiling; and
- (b) not part of a return air plenum. O. Reg. 278/05, s. 7 (11).

Ongoing asbestos management in buildings after transitional period

8. (1) This section applies on and after November 1, 2007. O. Reg. 278/05, s. 8 (1).

(2) Subsection (3) applies if,

(a) the owner of a building treats material that has been used in the building for any purpose related to it, including insulation, fireproofing and ceiling tiles, as if it were asbestos-containing material;

(b) the owner of a building has been advised under section 9 of the discovery of material that may be asbestos-containing material;

(c) the owner of a building knows or ought reasonably to know that asbestos-containing material has been used in a building for any purpose related to the building, including insulation, fireproofing and ceiling tiles;

(d) an examination under subsection (8) or section 10 establishes, or would have established if carried out as required, that asbestos-containing material has been used in a building for any purpose related to the building, including insulation, fireproofing and ceiling tiles; or

(e) a constructor or employer advises the owner of a building, in accordance with subsection 10(8), of the discovery of material that may be asbestos-containing material and that was not referred to in a report prepared under subsection 10

(4). O. Reg. 278/05, s. 8 (2).

O. Reg. 278/05, s. 26.

Table 1

Bulk material samples

Subsection 3 (3)

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as a coustical plaster on ceilings and fireproofing materials on structural members	Less than 90 square metres	3
		90 or more square metres, but less than 450 square metres	5
		450 or more square metres	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
4.	Other material	Any size	3

O. Reg. 278/05, Table 1.