



December 16, 2022
CO884.00

Ms. Jade Hawkins
595831 Ontario Inc.
650 Eagleson Road
Kanata, Ontario
K2M 1H4

Attention: Ms. Jade Hawkins

**Re: Designated Substances Survey
5650 Manotick Main Street, Ottawa, Ontario**

Dear Ms. Hawkins:

Further to your request, Terrapex Environmental Ltd. (Terrapex) completed a designated substances survey (DSS) of a residential dwelling at 5650 Manotick Main Street Ottawa, Ontario (the site). It is understood that the work program is required by 595831 Ontario Inc. (the Client) for municipal Site plan approval in anticipation of demolition of the structure for potential redevelopment of the Site.

The objectives of the DSS were to identify the presence, absence or potential for "Designated Substances" as defined in the Ontario *Occupational Health and Safety Act* (R.S.O. 1990, Chapter O.1) *Designated Substances* regulation (O. Reg. 490/09), and to identify and quantify potential asbestos-containing materials (ACM) as required by O. Reg. 278/05 *Designated Substance — Asbestos on Construction Projects and in Buildings and Repair Operations*. The survey also included identification of other hazardous materials such as polychlorinated biphenyls (PCBs), urea-formaldehyde foam insulation (UFFI), ozone-depleting substances (ODS), and mould.

BUILDING DESCRIPTION

The Site is located on the west side of Manotick Main Street, approximately 280 m south of Eastman Avenue and north of Mahogany Harbour Lane in Manotick, Ontario. The Site is irregular in shape and occupies a footprint of 1,523 m². It is understood that the original building was constructed in the 1940s. The property is occupied by a one-storey dwelling and two sheds.

A one-storey single family occupies the central portion of the property. The front yard of the property (located to the east of the residence) has a gravel surface cover while the backyard is largely landscape with grass cover. Two sheds are located in the backyard of the property. The property

is not fenced however a stand of trees are located between the Site and Mahogany Harbour Lane to the south.

The single-storey residence located at this property is square in shape and has an approximate footprint of 80 m². The residence had a concrete foundation with a basement. The exterior is finished with aluminum siding overlying transite board. There are two wooden sheds in the backyard of the property.

The interior of the residence appeared have to been renovated recently. Interior finishings of the interior of the residence composed of drywall and engineered wood flooring. The basement of the residence was partially finished. A sump was observed in the basement of the residence.

SCOPE OF WORK

The building was inspected by Greg Sabourin of Terrapex on April 21, 2022. All areas of the building were accessible and observed during the site inspection, except for the following:

- Due to the location of the hatch providing access to the attic was located in a stairwell, it was not accessible due to safety reasons.
- Samples of the roofing material were not able to be collected. Based on the fact that the roofing shingles appeared to be new they are not expected to be a concern.

Samples of potential asbestos-containing materials (ACM) and potential lead-containing paint were submitted for laboratory analysis to Paracel Laboratories Ltd. (Paracel). Paracel is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for analysis including but not limited to metals, organics mold and asbestos in various matrices and International Organization for Standardization's ISO/IEC 17025 - *General Requirements for the Competence of Testing and Calibration Laboratories* and the ISO 9000 series of Quality Management Standards.

The results of the survey are provided below.

DESIGNATED SUBSTANCES

Acrylonitrile: Acrylonitrile is a colourless to pale yellow liquid with an unpleasant odour. It is primarily used in the industrial production of synthetic fibres, resins, plastics, elastomers, and rubber. Historically, acrylonitrile has also been used in fumigants/pesticides. Because of its use in the manufacturing of many consumer goods, trace amounts of acrylonitrile may be present in materials or equipment in the building. However, O. Reg. 490/09 does not apply to situations where the exposure is limited to contact with manufactured goods.

Acrylonitrile was not observed or suspected to be present (in pure form), produced, used, processed, handled, or stored in the building. No concerns regarding the exposure of workers or the public to acrylonitrile are anticipated.

Arsenic: Arsenic is a naturally occurring element. Anthropogenic sources of arsenic include wood preservatives (inorganic arsenic compounds) and pesticides (organic arsenic compounds). O. Reg. 490/09 applies to workplaces where arsenic is produced, processed, used, handled, or stored, where a worker is likely to be exposed.

Arsenic was not observed or suspected to be produced, used, processed, handled or stored in the building. No concerns regarding the exposure of workers or the public to arsenic are anticipated.

Asbestos: O. Reg. 490/09 does not apply to asbestos exposure in a non-industrial setting. However, any material which contains greater than 0.5% asbestos fibre (by dry weight) is considered to be an asbestos-containing material with respect to the requirements of O. Reg. 278/05, *Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations*, and must be identified and managed in accordance with the regulation. ACMs commonly present in commercial buildings include mechanical/piping insulation, wall, floor and ceiling tiles, plaster and drywall compound, gaskets, siding, roofing paper and other materials. O. Reg. 278/05 defines “friable material” as material that when dry can be crumbled, pulverized or powdered by hand pressure, or is crumbled, pulverized or powdered. Friable asbestos is of greater concern with respect to exposure than non-friable asbestos. Disposal of asbestos waste in Ontario is governed by the *General - Waste Management* regulation (R.R.O. 1990, Reg. 347).

Based on the age of the building, ACM could be present. Fifteen samples of five potential ACM were collected and submitted for laboratory analysis to Paracel. Asbestos (bulk) analysis was conducted utilizing Polarized Light Microscopy (PLM) according to the EPA standard 600/R-93/116 and the test method NIOSH 9002. O. Reg. 278/05 requires between three and seven bulk material samples from each area of homogeneous potential asbestos-containing material, depending on the size of the area. In accordance with the “stop-positive” method of analysis, if one sample in a group of similar samples was determined to be ACM, the remaining samples in the group were not analyzed.

The locations of the potential ACM samples, material descriptions, approximate extent, and condition are summarized in Table 1 (attached). Laboratory Certificates of Analyses are attached.

The results of the analyses indicated that the following ACM is present in the building:

- Grey transite board located underneath the aluminum siding on the exterior of the dwelling (sample ACM-5A, non-friable, 20% Chrysotile asbestos, good condition). The entire area of the transite board could not be determined but it may represent an area of approximately 160 m².

All other samples are considered to be non-ACM. It should be noted that the attic of the building was not inspected and should be inspected before the demolition of the building to identify any potential ACM.

Benzene: Benzene is a highly flammable, colourless liquid with a sweet odour. Benzene is found

in petroleum products and cigarette smoke. Industrial uses of benzene include the manufacturing of rubbers, lubricants, dyes, detergents, drugs, and pesticides, as well as the manufacturing of other chemicals for the production of plastics, resins, and nylon and other synthetic fibres.

No benzene containing materials, were present at the site and are not suspected to have been present historically. Therefore, no concerns regarding, the exposure of workers or the public to benzene in the building are anticipated.

Coke oven emissions: Coke oven emissions are defined as the “benzene soluble fraction of total particulate matter of the substances emitted into the atmosphere from metallurgical coke ovens” (O. Reg. 490/09).

No coke ovens were present at the site, and are not suspected to have been present historically. Therefore, no concerns regarding the exposure of workers or the public to coke oven emissions in the building are anticipated.

Ethylene oxide: Ethylene oxide is a man-made chemical that is primarily used in the manufacturing of ethylene glycol (a chemical used in the production of antifreeze and polyester). Small amounts of ethylene oxide (less than 1%) may be used to control insects in some stored agricultural products, as well as during the sterilization of medical equipment and supplies.

Ethylene oxide was not observed or suspected to be present in the building. No concerns regarding the exposure of workers or the public to ethylene oxide in the building are anticipated.

Isocyanates: Isocyanates are compounds containing the isocyanate group (-NCO) and are typically used in the manufacturing of thermoplastic elastomers, spandex fibres, and polyurethane products (foams, paints, etc.). O. Reg. 490/09 applies to workplaces where isocyanates are produced, used, handled or stored, where a worker is likely to be exposed.

Isocyanates were not observed or suspected to be produced, used, handled or stored in the building, although they could be present in trace amounts in manufactured products. No concerns regarding the exposure of workers or the public to isocyanates are anticipated.

Lead: The *Surface Coating Materials Regulation* under the *Federal Hazardous Products Act* limits the amount of lead permissible in new interior paint to 0.009% or 90 ppm. While this limit does not apply to paints already applied, it generally accepted in Canada as the level over which a paint is considered to be “lead-containing”. In structures constructed prior to approximately 1980, lead may also be present in solder on water lines, or in lead drainage pipes.

Based upon the age of the building, lead may be present on painted surfaces and in piping. Three samples of paint (P-1 to P-3) from the building were collected and submitted for laboratory analysis of lead content. Lead in paint analysis was conducted using Inductively Coupled Plasma Mass Spectroscopy (ICP/MS) according to EPA standard 6010. The sample locations, paint

descriptions, approximate extent of the painted surfaces, and condition of the paint are summarized in Table 2 (attached). Laboratory Certificates of Analyses are attached.

The results of the analyses indicated that the following paint containing elevated levels of lead is present in the building:

- the white paint (P-1) located on the exterior of the shed in the backyard.

Paint on the drywall in the interior of the building and the white paint on the transite siding of the house were not considered lead containing.

Mercury: Mercury is a naturally occurring element that can occur in several forms. Metallic mercury is a shiny, silver-white coloured, odourless liquid. Metallic mercury is commonly found in thermometers, dental amalgams, batteries, fluorescent lamps, high intensity discharge (HID) lamps and related products.

Mercury may also be present in surface coatings such as paint. The current *Surface Coating Materials Regulation* limits the permissible mercury content in many surface coating materials, including interior paints, to 0.001% or 10 ppm. While this limit does not apply to paints already applied, it is generally accepted as the level over which a paint is considered “mercury-containing”.

Three samples of paint (P-1 to P-3) from the building were collected and submitted for laboratory analysis of mercury content. Mercury in paint analysis was conducted utilizing Cold Vapour Atomic Absorption Spectroscopy (CVAAS) according to EPA standard 7471B. The sample locations, paint descriptions, approximate extent of the painted surfaces, and condition of the paint are summarized in Table 2. Laboratory Certificates of Analysis are attached.

As shown on Table 2, the results of the analyses indicated none of the paint samples submitted contained elevated levels of mercury. Small volumes of mercury are likely present in thermostat controllers in the building, as well as the vapours within fluorescent light bulbs.

Silica: Silica, also called “silica sand” or “quartz sand”, refers to sands, gravels, and other soil and rock products with a high silicon dioxide (SiO₂) content. Designated substance requirements under the *Occupational Health and Safety Act* only apply to crystalline silica present in a respirable form.

Silica will be naturally present in soil and bedrock as well as many construction materials including cement, concrete, brick, and mortars.

Vinyl chloride: Vinyl chloride is a colourless gas with a mild, sweet odour that is primarily used in the manufacturing of polyvinyl chloride (PVC) plastic and vinyl products such as piping, wire, cable coatings, and packaging materials. As a result, trace amounts of vinyl chloride may be found in some building materials at the site. No concerns regarding the exposure of workers or the public to vinyl chloride are anticipated.

POLYCHLORINATED BIPHENYLS (PCBs)

Historically, PCBs have been used in electrical equipment such as transformers, fluorescent light ballasts and capacitors. The use of PCBs was banned in heat transfer and electrical equipment installed after 1977, and in transformers and capacitors installed after 1980. These bans did not initially apply to existing equipment, however, as of December 31, 2009, all equipment containing PCBs at a concentration equal to or greater than 500 mg/kg had to be removed, and as of December 31, 2025 (earlier for equipment close to sensitive locations), all equipment containing PCBs at a concentration less than 500 mg/kg (including light ballasts and pole-top transformers) must be removed under the Federal PCB regulations (SOR/2008 273).

No electrical equipment suspected to contain PCBs was observed in the building.

UREA-FORMALDEHYDE FOAM INSULATION (UFFI)

UFFI is an insulating foam plastic typically - but not exclusively - used to insulate existing wood-framed residential homes. Most installations occurred between 1977 and 1980, after which it was banned in Canada. UFFI is produced by mixing urea-formaldehyde resin, a foaming agent, and compressed air, and injecting it into installation areas (e.g. void spaces).

No evidence of UFFI, or of UFFI installation, was observed within the building.

OZONE-DEPLETING SUBSTANCES (ODS)

ODS include chlorofluorocarbons (CFCs), chlorofluorocarbons (HCFCs), halons, carbon tetrachloride, and methyl chloroform. Most ODS in industrial/commercial settings are found in refrigeration equipment (including air-conditioning units) and in older halon fire suppression systems for areas containing computers or other sensitive electronics.

Based on the age of the appliances that were present in the dwelling they are not suspected to contain ODS.

MOULD

Mould is a general term for microscopic fungi that are highly adapted to grow and reproduce rapidly, producing spores and mycelia. Mould may grow indoors when provided with moisture and nutrients. Under wet or damp conditions, mould may grow on building materials such as wallpaper, ceiling tiles, carpets, insulation material and drywall.

No mould was observed during the Site inspection.

OTHER DEMOLITION / WASTE MANAGEMENT CONCERNS

Hazardous Materials/Potentially Hazardous Materials: No hazardous materials were observed to be present on the Site.

Miscellaneous wastes: Other than typical residential waste no miscellaneous waste was observed at the Site.

CONCLUSIONS

The results of this DSS indicated the following designated or controlled substances associated with the site:

- ACM within the following building material:
 - White transite board located underneath the aluminum siding on the exterior of the dwelling (sample ACM-5A, non-friable, 20% Chrysotile asbestos, approximately 160 m² in area, good condition);
- At the time of the inspection the attic of the swelling was unable to be inspected. The attic should be inspection prior to demolition to confirm if asbestos containing material is indeed present.
- lead containing paint was present on the outdoor shed and was in poor condition with extensive flaking;
- silica in building materials.

RECOMMENDATIONS

As asbestos-containing materials have been identified in the facility, an Asbestos Management Plan is required under O. Reg. 278/05 if the building is to not be demolished. The owner of the facility is responsible for establishing and implementing the plan, which must consist of the following elements:

- preparing and maintaining on the premises a record containing the location of all the ACM, and, in the case of spray-on fireproofing, the type of ACM;
- At the time of demolition the attic of the building be inspected for any potential ACM and this DSS should be updated.
- providing 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;
- providing any employer with whom the owner arranges or contracts for work that may involve material mentioned in the record, or may be carried on in close proximity to such material and may disturb it, written notice of the information in the record, such as this report and any update reports;

- advising the workers employed by the owner who work in the building of the information in the record, if the workers may do work that involves material mentioned in the record, or is to be carried on in close proximity to such material and may disturb it;
- establishing and maintaining for the training and instruction of every worker employed by the owner who works in the building and may do work described above;
- inspecting the material mentioned in the record at reasonable intervals (at least once per year) in order to determine its condition.

If any demolition, alteration or repair work that may result in disturbing ACM or potential ACM areas, a qualified asbestos abatement contractor should be retained for asbestos removal prior to undertaking the work. O. Reg. 278/05 defines three types of asbestos removal operations, which require different levels of protection, isolation and decontamination. Type 1 operations involve the lowest level of risk and include the removal of non-friable materials where the material is not damaged, or can be wetted and cut without power tools. Type 3 operations involve the highest level of risk, including removal of most types of friable materials, and require full enclosure of the area and construction of a decontamination area for workers and equipment, among other things.

During any future renovation or demolition activities, it should be verified whether PCBs are present. Once de-energized, ballasts may be evaluated using the *Identification of Light Ballasts Containing PCBs*, Environment Canada, 1991 and the *Handbook on PCBs in Electrical Equipment*, Environment Canada, 1988. If date codes or PCB label information are not evident, sampling by a qualified contractor may be necessary, otherwise, equipment should be considered PCB-containing. Any PCB-containing equipment must be disposed in accordance with the requirements of the *Waste Management - PCBs* regulation (R.R.O. 1990, Reg. 362).

Care should be taken to avoid worker and public exposure to mercury during any renovation or demolition activities by removing and appropriately disposing of thermostat controls and fluorescent light bulbs prior to removal of building roofs, walls, supports, etc. by heavy equipment.

Demolition and renovation contractors should ensure the use of appropriate personal protective equipment and proper dust control measures to protect themselves and the public from potential exposure by inhalation of silica dust or paint dust or chips.

The presence of ODS in the refrigeration equipment is not considered a significant environmental concern (UNLESS THE ODS IS PHASED OUT), however disposal and/or servicing of ODS-containing devices must be completed by a licensed technician to ensure that these substances are managed in accordance with the requirements of R.R.O. 1990, Reg. 347, *Waste Management - General*, and O. Reg. 463/10, *Ozone Depleting Substances and Other Halocarbons*.

Disposal of hazardous materials, including asbestos, if required, should be completed in accordance with Reg. 347.

CLOSURE

This report has been completed in accordance with the terms of reference for this project as agreed upon by 595831 Ontario Inc. (the Client) and Terrapex Environmental Ltd. (Terrapex) and generally accepted engineering or environmental consulting practices in this area.

Terrapex has exercised due care, diligence, and judgement in the performance of this assessment, however, studies of this nature have inherent limitations. This report is intended to provide only a general assessment of substances of concern that may be present within the building(s) at the site. By necessity, the findings and observations regarding actual or potential presence of such substances are based solely on the extent of observations and information gathered during the assessment, and subsequent investigations of differing scope may reveal conflicting results. In particular, it should be noted that the assessment was limited to accessible areas; inspection and/or testing of materials behind walls, ceilings, etc., except where explicitly noted, was not completed as part of this work program. The assessment was also limited to a study of those materials specifically addressed in this report.

Terrapex has relied in good faith on information and representations obtained from the Client and third parties and, except where specifically identified, has made no attempt to verify such information. Terrapex accepts no responsibility for any deficiency or inaccuracy in this report as a result of any misstatement, omission, misrepresentation, or fraudulent act of those providing information. Terrapex shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time of the study.

This report has been prepared for the sole use of 595831 Ontario Inc.. Terrapex accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than 595831 Ontario Inc.

Sincerely,

TERRAPEX ENVIRONMENTAL LTD.



Greg Sabourin, P.Eng.
Project Manager



Rod Rose, P.Geo (Limited)
Senior Reviewer

Attach.

Table 1 Summary of Potential ACM and Results of Laboratory Analysis

Table 2 Summary of Paint Samples and Results of Laboratory Analysis

Photographs

Laboratory Certificates of Analysis

DRAFT

TABLE 1 SUMMARY OF POTENTIAL ACM AND RESULTS OF LABORATORY ANALYSIS
5650 Manotick Main, Ottawa, Ontario

Sample ID	Location	Description	Approximate Extent	Condition	Friable/Non-Friable	Laboratory Analysis Results
ACM-1A ACM-1B ACM-1C	Unpainted Shed at backyard of property	Roofing material	Representative of entire roof of shed	Poor	Non-friable	<0.5% <0.5% <0.5%
ACM-2A ACM-2B ACM-2C	White Shed at backyard of property	Roofing material	Representative of entire roof of shed	Poor	Non-friable	<0.5% <0.5% <0.5%
ACM-3A ACM-3B ACM-3C	Throughout main floor of house	Drywall joint compound	Throughout main floor and basement of house	Good	Friable	<0.5% <0.5% <0.5%
ACM-5A ACM-5B ACM-5C	Underneath aluminium siding on exterior of house	Transite board	Throughout exterior siding of the house	Fair	Non-friable	20% 20% 20%
ACM-6A ACM-6B ACM-6C	Underneath aluminium siding on exterior of house	Tar paper	Throughout exterior siding of the house	Fair	Non-friable	<0.5% <0.5% <0.5%

Ph Phase or layers

SP Stop Positive

BOLD Reported asbestos content exceeds 0.5%

DRAFT

TABLE 2 SUMMARY OF PAINT SAMPLES AND LABORATORY ANALYSES
5650 Manotick Main Street, Ottawa, Ontario

Sample ID	Area	Description	Approximate Extent	Condition	Lead Content (ppm)	Mercury Content (ppm)
P-1	Backyard shed	White exterior paint	Represents paint on the wooden shed at the back of the property	Poor (extensive flaking)	22,700	7
P-2	Side of house on old siding	White exterior paint	Represents all paint of old siding of house on stucco	Good	58	3
P-3	Paint inside the house	Off-White interior paint	White paint on front exterior of building	Good	<5	<2

BOLD Reported lead content exceeds 90 ppm, or mercury content exceeds 10 ppm.



PHOTOGRAPHIC LOG

Client: 595831 Ontario Inc.

Site Location:

5650 Manotick Main Street, Ottawa ON

Project No: CO884.00

Photo No: 1

Date: April 21, 2022

Viewing Direction:
West

Description:

A view of Site from the Manotick Main Street.



Photo No: 2

Date: April 21, 2022

Viewing Direction:
East

Description:

View of white shed located in the backyard of the property. Paint sample P-1 was collected from the Shed.





PHOTOGRAPHIC LOG

Client: 595831 Ontario Inc.

Site Location:

5650 Manotick Main Street, Ottawa ON

Project No: CO884.00

Photo No: 3

Date: April 21, 2022

Viewing Direction:
N/A

Description:

View of the transite cement board located underneath the tin siding. ACM-5 was collected from the white transite board.



Photo No: 4

Date: April 21, 2022

Viewing Direction:
N/A

Description:

View of the finished portion of the basement.





PHOTOGRAPHIC LOG

Client: 595831 Ontario Inc.

Site Location:

5650 Manotick Main Street, Ottawa ON

Project No: CO884.00

Photo No: 5

Date: April 21, 2022

Viewing Direction:
N/A

Description:

A view of the flooring located throughout the main floor of the house. It did not appear that any flooring was located underneath the engineered laminate flooring.



Photo No: 6

Date: March 16, 2022

Viewing Direction:
N/A

Description:

A view attic hatch in the stairwell of the residence.





PHOTOGRAPHIC LOG

Client: 595831 Ontario Inc.

Site Location:

5650 Manotick Main Street, Ottawa ON

Project No: CO884.00

Photo No: 7

Date: April 21, 2022

Viewing Direction:
N/A

Description:

A view of a hole through the drywall to check the insulation on the upper floor of the residence.

Pink fiberglass insulation was observed on the upper floor. This is not considered asbestos containing.

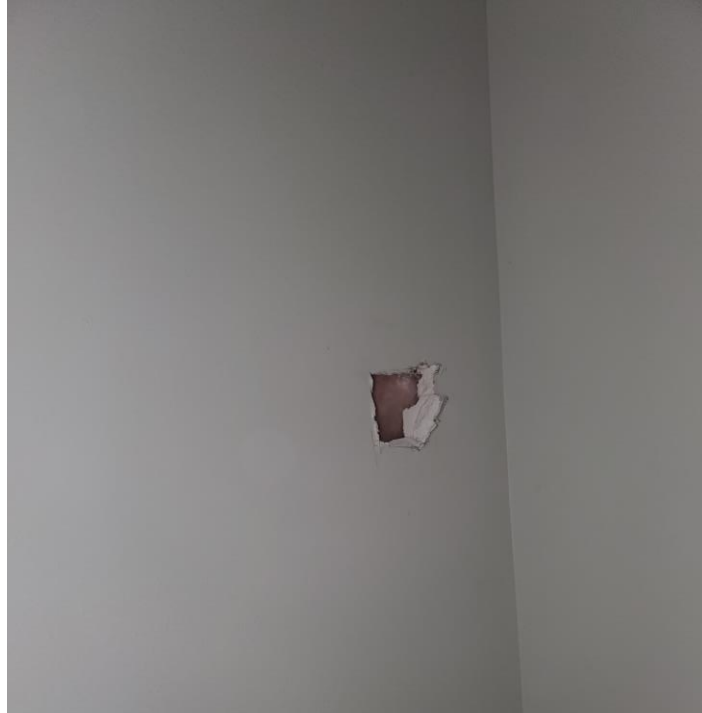


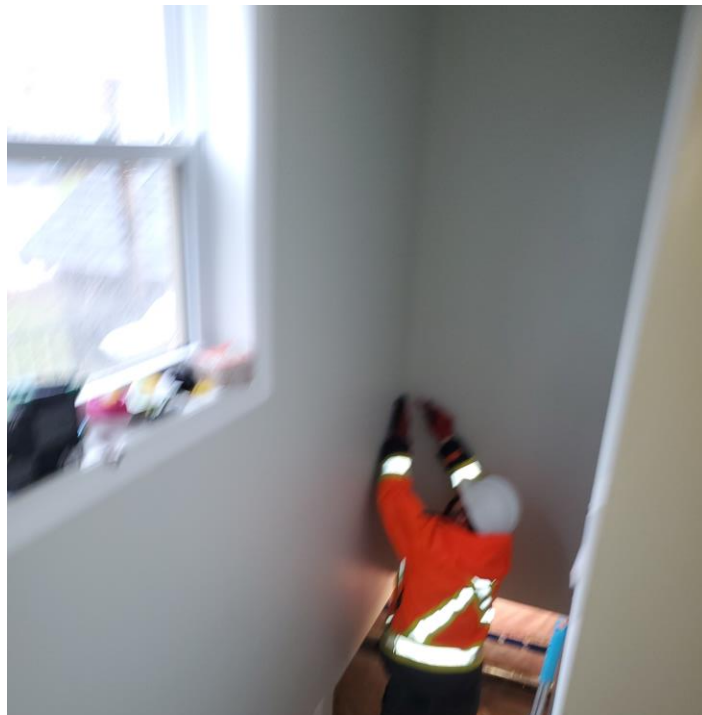
Photo No: 8

Date: April 21, 2022

Viewing Direction:
N/A

Description:

A view of the collection of a drywall joint compound sample.



Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)

20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO:
Project: C0884.00
Custody:

Report Date: 28-Apr-2022
Order Date: 22-Apr-2022

Order #: 2218023

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Parcel ID	Client ID
2218023-01	P-1
2218023-02	P-2
2218023-03	P-3

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: Terrapex Environmental Ltd. (Ottawa)

Client PO:

DRAFT

Report Date: 28-Apr-2022

Order Date: 22-Apr-2022

Project Description: C0884.00

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Mercury by CVAA	EPA 7471B - CVAA, digestion	28-Apr-22	28-Apr-22
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	27-Apr-22	27-Apr-22

Certificate of Analysis

DRAFT

Report Date: 28-Apr-2022

Client: Terrapex Environmental Ltd. (Ottawa)

Order Date: 22-Apr-2022

Client PO:

Project Description: C0884.00

Client ID:	P-1	P-2	P-3	-
Sample Date:	21-Apr-22 14:10	21-Apr-22 14:05	21-Apr-22 14:00	-
Sample ID:	2218023-01	2218023-02	2218023-03	-
MDL/Units	Paint	Paint	Paint	-

Metals

Lead	5 ug/g	22700	58	<5	-
Mercury	2 ug/g	7	3	<2	-

Certificate of Analysis

DRAFT

Report Date: 28-Apr-2022

Client: Terrapex Environmental Ltd. (Ottawa)

Order Date: 22-Apr-2022

Client PO:

Project Description: C0884.00

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Lead	ND	5	ug/g						
Mercury	ND	2	ug/g						

Certificate of Analysis
 Client: Terrapex Environmental Ltd. (Ottawa)
 Client PO:

DRAFT

Report Date: 28-Apr-2022
 Order Date: 22-Apr-2022
 Project Description: C0884.00

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Lead	5.6	5	ug/g	ND			NC	50	
Mercury	7	2	ug/g	7			1.6	30	

Certificate of Analysis
 Client: Terrapex Environmental Ltd. (Ottawa)
 Client PO:

DRAFT

Report Date: 28-Apr-2022

Order Date: 22-Apr-2022

Project Description: C0884.00

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Lead	53.8	5	ug/g	ND	107	70-130			
Mercury	22	2	ug/g	7	98.7	70-130			

Certificate of Analysis

Client: Terrapex Environmental Ltd. (Ottawa)

Client PO:

DRAFT

Report Date: 28-Apr-2022

Order Date: 22-Apr-2022

Project Description: C0884.00

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated



Client Name: <u>TERRAPEX Environmental Ltd</u>	Project Ref: <u>C0884.00</u>	Page <u>4</u> of <u>4</u>
Contact Name: <u>Greg Sabourin</u>	Quote #:	Turnaround Time <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular
Address: <u>80 Gurdwara Road Ottawa K2E8B8</u>	PO #: <u>Standard</u>	
Telephone: <u>613-558-7571</u>	E-mail: <u>G.Sabourin@TerraPex.com</u>	
Date Required: _____		

<input type="checkbox"/> REG 153/04 <input type="checkbox"/> REG 406/19 Other Regulation <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Med/Fine <input type="checkbox"/> REG 558 <input type="checkbox"/> PWQD <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> CCME <input type="checkbox"/> MISA <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> SU - Sani <input type="checkbox"/> SU - Storm <input type="checkbox"/> Table _____ For RSC: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other: _____		Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)		Required Analysis																
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	Hg, Pb							
				Date	Time															
1	P-1	P	-	1	April 21	2:10							X							
2	P-2	P	-	1	April 21	12:05							X							
3	P-3	P	-	1	April 21	12:00							X							
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Comments:		Method of Delivery: <u>WALK-IN</u>	
Relinquished By (Sign): <u>[Signature]</u>	Received By Driver/Depot:	Received at Lab: <u>[Signature]</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Greg Sabourin</u>	Date/Time:	Date/Time: <u>April 22, 2022 15:45</u>	Date/Time: <u>Apr 25/22 11:05a</u>
Date/Time: <u>April 22, 2022</u>	Temperature: _____ °C	Temperature: _____	pH Verified: <input type="checkbox"/> By: <u>N/A</u>

Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)

20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO: Standard
Project: C0884.00
Custody:


Report Date: 29-Apr-2022
Order Date: 22-Apr-2022

Order #: 2218070

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Parcel ID	Client ID
2218070-01	ACM-1A
2218070-02	ACM-1B
2218070-03	ACM-1C
2218070-04	ACM-2A
2218070-05	ACM-2B
2218070-06	ACM-2C
2218070-07	ACM-3A
2218070-08	ACM-3B
2218070-09	ACM-3C
2218070-10	ACM-5A
2218070-11	ACM-5B
2218070-12	ACM-5C
2218070-13	ACM-6A
2218070-14	ACM-6B
2218070-15	ACM-6C

Approved By:



Emma Diaz

Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis
 Client: Terrapex Environmental Ltd. (Ottawa)
 Client PO: Standard

DRAFT

Report Date: 29-Apr-2022

Order Date: 22-Apr-2022

Project Description: C0884.00

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2218070-01	21-Apr-22	Black	Roofing Material	No	Client ID: ACM-1A	[AS-PRE]
					Cellulose	10
					MMVF	11.72
					Non-Fibers	78.28
2218070-02	21-Apr-22	Black	Roofing Material	No	Client ID: ACM-1B	[AS-PRE]
					Cellulose	10
					MMVF	10.21
					Non-Fibers	79.79
2218070-03	21-Apr-22	Black	Roofing Material	No	Client ID: ACM-1C	[AS-PRE]
					Cellulose	10
					MMVF	11.3
					Non-Fibers	78.7
2218070-04	21-Apr-22	Black	Roofing Material	No	Client ID: ACM-2A	[AS-PRE]
					Cellulose	35
					Non-Fibers	65
2218070-05	21-Apr-22	Black	Roofing Material	No	Client ID: ACM-2B	[AS-PRE]
					Cellulose	35
					Non-Fibers	65
2218070-06	21-Apr-22	Black	Roofing Material	No	Client ID: ACM-2C	[AS-PRE]
					Cellulose	35
					Non-Fibers	65
2218070-07	21-Apr-22	White	Drywall Joint Compound	No	Client ID: ACM-3A	[AS-PRE]
					Non-Fibers	100
2218070-08	21-Apr-22	White	Drywall Joint Compound	No	Client ID: ACM-3B	[AS-PRE]
					Non-Fibers	100
2218070-09	21-Apr-22	White	Drywall Joint Compound	No	Client ID: ACM-3C	[AS-PRE]
					Non-Fibers	100

Certificate of Analysis
 Client: Terrapex Environmental Ltd. (Ottawa)
 Client PO: Standard

DRAFT

Report Date: 29-Apr-2022
 Order Date: 22-Apr-2022
 Project Description: C0884.00

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
2218070-10	21-Apr-22	Grey	Transite	Yes	Client ID: ACM-5A	
					Chrysotile	20
					Non-Fibers	80
2218070-11	21-Apr-22	Grey	Transite	Yes	Client ID: ACM-5B	
					Chrysotile	20
					Non-Fibers	80
2218070-12	21-Apr-22	Grey	Transite	Yes	Client ID: ACM-5C	
					Chrysotile	20
					Non-Fibers	80
2218070-13	21-Apr-22	Black	Tar Paper	No	Client ID: ACM-6A	[AS-PRE]
					Cellulose	65
					Non-Fibers	35
2218070-14	21-Apr-22	Black	Tar Paper	No	Client ID: ACM-6B	[AS-PRE]
					Cellulose	65
					Non-Fibers	35
2218070-15	21-Apr-22	Black	Tar Paper	No	Client ID: ACM-6C	[AS-PRE]
					Cellulose	65
					Non-Fibers	35

* MMVF: Man Made Vitreous Fibers: Fiberglass, Mineral Wool, Rockwool, Glasswool
 ** Analytes in bold indicate asbestos mineral content.

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	Lab Accreditation	Analysis Date
Asbestos, PLM Visual Estimation	AppE to SubE of 40CFR Part753 and EPA/600/R-93/116	2 - Ottawa West	CALA 1262	29-Apr-22

Ottawa West Lab: 25 Northside Rd, Unit C Nepean, Ontario K2H 8S1

Certificate of Analysis
Client: Terrapex Environmental Ltd. (Ottawa)
Client PO: Standard

DRAFT

Report Date: 29-Apr-2022
Order Date: 22-Apr-2022
Project Description: C0884.00

Qualifier Notes

Sample Qualifiers :

AS-PRE: Due to the difficult nature of the bulk sample (interfering fibers/binders), additional NOB preparation was required prior to analysis

Work Order Revisions | Comments

None



Client Name: TerraPex Environmental Ltd
 Contact Name: Greg Sabourin
 Address: 20 Guadalupe Road Ottawa ON
 Telephone: 613-558-7571

Project Reference: Co884.00
 Quote #:
 PO #: Standard
 Email Address: G.Sabourin@TerraPex.com

Turnaround Time:
 Immediate 1 Day
 4 Hour 2 Day
 8 Hour 3 Day
 Regular
 Date Required: _____

ASBESTOS & MOLD ANALYSIS

Matrix: Air Bulk Tape Lift Swab Other Regulatory Guideline: ON QC AB SK Other:

Analyses: Microscopic Mold Culturable Mold Bacteria GRAM PCM Asbestos PLM Asbestos Chatfield Asbestos TEM Asbestos

Parcel Order Number: 2218070

Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk	
				Identify Distinct Building Materials to Be Analyzed (if not specified, all materials identified will be analyzed) *	Positive Stop?
1 <u>ACM-1A</u>	<u>APR 21</u>	-	<u>PLM</u>	<u>Group</u> ↑ ↓	<input checked="" type="checkbox"/>
2 <u>ACM-1B</u>	<u>APR 21</u>	-	<u>PLM</u>		<input checked="" type="checkbox"/>
3 <u>ACM-1C</u>	<u>APR 21</u>	-	<u>PLM</u>		<input checked="" type="checkbox"/>
4 <u>ACM-2A</u>	<u>APR 21</u>	-	<u>PLM</u>	<u>Group</u> ↑ ↓	<input checked="" type="checkbox"/>
5 <u>ACM-2B</u>	<u>APR 21</u>	-	<u>PLM</u>		<input checked="" type="checkbox"/>
6 <u>ACM-2C</u>	<u>APR 21</u>	-	<u>PLM</u>		<input checked="" type="checkbox"/>
7 <u>ACM-3A</u>	<u>APR 21</u>	-	<u>PLM</u>	<u>Group</u> ↑ ↓	<input checked="" type="checkbox"/>
8 <u>ACM-3B</u>	<u>APR 21</u>	-	<u>PLM</u>		<input checked="" type="checkbox"/>
9 <u>ACM-3C</u>	<u>APR 21</u>	-	<u>PLM</u>		<input checked="" type="checkbox"/>
10 <u>ACM-5A</u>	<u>APR 21</u>	-	<u>PLM</u>	<u>Group</u> ↑ ↓	<input type="checkbox"/>
11 <u>ACM-5B</u>	<u>APR 21</u>	-	<u>PLM</u>		<input type="checkbox"/>
12 <u>ACM-5C</u>	<u>APR 21</u>	-	<u>PLM</u>		<input type="checkbox"/>

* If left blank, all distinct materials identified in the samples will be analyzed and reported separately as per EPA 600/R-93/116. Additional charges will apply.

Comments: _____

Method of Delivery: Walk-in

Relinquished By (Sign): <u>[Signature]</u>	Received at Depot: <u>[Signature]</u>	Received at Lab: <u>[Signature]</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Greg Sabourin</u>	Date/Time: <u>April 22, 2022 15:45</u>	Date/Time: <u>04/25/22 9:20am</u>	Date/Time: <u>04/25/22 2:11pm</u>



Client Name: TerraPex Environmental Ltd.
 Contact Name: Greg Sabourin
 Address: 20 Gurdwara Road Ottawa ON
 Telephone: 613-558-7571

Project Reference: C0884.00
 Quote #:
 PO #:
 Email Address: G.Sabourin@TerraPex.com

Turnaround Time:
 Immediate 1 Day
 4 Hour 2 Day
 8 Hour 3 Day
 Regular
 Date Required: _____

ASBESTOS & MOLD ANALYSIS

Matrix: Air Bulk Tape Lift Swab Other Regulatory Guideline: ON QC AB SK Other:

Analyses: Microscopic Mold Culturable Mold Bacteria GRAM PCM Asbestos PLM Asbestos Chatfield Asbestos TEM Asbestos

Paracel Order Number:

2218070

Sample ID	Sampling Date	Air Volume (L)	Analysis Required	Asbestos - Bulk	
				Identify Distinct Building Materials to Be Analyzed (if not specified, all materials identified will be analyzed) *	Positive Stop?
1	APR 21	-	PLY	GROUP ↑ ↓	<input type="checkbox"/>
2	APR 21	-	PLY		<input type="checkbox"/>
3	APR 21	-	PLY		<input type="checkbox"/>
4					<input type="checkbox"/>
5					<input type="checkbox"/>
6					<input type="checkbox"/>
7					<input type="checkbox"/>
8					<input type="checkbox"/>
9					<input type="checkbox"/>
10					<input type="checkbox"/>
11					<input type="checkbox"/>
12					<input type="checkbox"/>

* If left blank, all distinct materials identified in the samples will be analyzed and reported separately as per EPA 600/R-93/116. Additional charges will apply.

Comments: _____

Method of Delivery: Walk-in

Relinquished By (Sign): <u>[Signature]</u>	Received at Depot: <u>[Signature]</u>	Received at Lab: <u>[Signature]</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Greg Sabourin</u>	Date/Time: <u>April 23, 22 15:49</u>	Date/Time: <u>04/25/22 9:20am</u>	Date/Time: <u>04/25/22 2:16pm</u>