REPORT

April 4, 2013

DESIGNATED SUBSTANCES UPDATE AND CONTROLLED PRODUCTS SURVEY

City Hall A Wing - 50 Centre Street South, Oshawa, Ontario

Submitted to:
Mr. John Turpin, Project Manager, Facilities Management
The Corporation of the City of Oshawa
50 Centre Street South
Oshawa, Ontario
L1H 3Z7

Report Number: 12-1187-0086 (1017)

Distribution:

1 Copy – The Corporation of the City of Oshawa

2 Copies – Golder Associates Ltd.

Golder Associates

Table of Contents

APPENDICES

1.0 INTRODUCTION

The Corporation of the City of Oshawa (the "City"), retained Golder Associates Ltd. ("Golder"), to conduct a non-intrusive Designated Substances Survey ("DSS") Update of the single-storey A Wing associated with the Oshawa City Hall located at 50 Centre Street South, Oshawa, Ontario (the "Site"). The survey was conducted on August 23, 2012 by Mr. Garrett MacDonald, of Golder's GTA Environmental Health and Safety Group.

The survey was performed with the objective of identifying designated substances, as required under the *Ontario Occupational Health and Safety Act* (the "*Act*"), and to provide recommendations to remove or manage these materials for environmental due diligence, and in accordance with provincial regulations and guidelines.

The designated substances surveyed included: asbestos-containing materials ("ACM"); lead; mercury; and silica. The remaining designated substances (acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride) were not expected to be present at the Site; however, if observed, their presence was noted. Select hazardous materials including polychlorinated biphenyls ("PCBs"), ozone depleting substances ("ODS"), and other chemicals stored and managed on-Site were also noted, where observed.

1.1 Historical Information

Previous designated substances survey projects have been conducted at the Site by Golder and T. Harris Environmental Management ("T. Harris"), and are detailed in the following documents:

- Golder Associates Ltd. report titled, Designated Substances Survey – Summary Report – A Wing, Council Chambers, B Wing (2nd Floor) & Rundle Tower (9th Floor), 50 Centre Street South, Oshawa, ON dated July 8, 2008 (the "2008 Golder Report").
- Golder report Designated Substance Survey "A" Wing & Council Chambers, Oshawa City Hall, Oshawa, Ontario, dated May 26, 2006;
- Golder report Asbestos Survey Report – "A" Wing Basement Level & Boiler Room, Oshawa City Hall, 50 Centre Street South, Oshawa, Ontario, dated June 7, 2006;
- T. Harris report Oshawa City Hall Asbestos Survey "A" Wing – City Hall, dated December 4, 1991;

Golder reviewed the above noted reports and where applicable, the findings of the 2008 Golder Report were referenced herein. This report should be read in conjunction with the 2008 Golder Report.

1.2 Description of Site Building

The Site is located on the south side of the Oshawa City Hall building complex and was originally a five-storey concrete structure occupying an area of approximately 23,000 sq.ft. The majority of the Site was demolished circa 2008-2009. Only a portion of the East Basement section is still present and was recently renovated circa 2008-2009. The Site building was constructed circa 1955 and consists of operational and storage rooms. The exterior of the Site building is comprised of concrete, with metal cladding.

The following is a brief description of the building systems observed:

Structural: the Site was observed to be constructed with a concrete foundation, a combination of concrete and concrete block supporting walls, and concrete decking system. The exterior of the Site building is finished with metal cladding.

Walls: consisted of various materials and material combinations including drywall and concrete.

Flooring: included vinyl floor tiles, ceramic tile and concrete.

Ceilings: where present consisted of drywall, and "lay-in" acoustic ceiling tiles.

Mechanical: The building is heated and cooled via HVAC units found in mechanical rooms associated with the C Wing roof. The mechanical ductwork was noted to be both un-insulated and insulated with fiberglass where observed. The mechanical pipe systems were either insulated with non asbestos-containing insulation or were not insulated. Illumination for building is provided by both fluorescent and incandescent light fixtures.

2.0 SCOPE OF WORK

The Scope of Work involved conducting a non-intrusive building materials survey within the Site to:

- identify designated substances and other selected hazardous materials present at the Site;
- note any controlled products and other hazardous chemicals stored and managed on-Site, and where present, make observations/recommendations on potential environmental management issues; and,
- provide a report detailing the findings and any recommendations with respect to removal or management of any identified designated substances on-Site, in accordance with applicable legislation.

The Scope of Work did not include the investigation for possible contamination in the soil or groundwater of the Site, or the presence of underground storage tanks or buried pipes. The Scope of Work was limited to readily accessible building materials that are part of the building envelope only, and are present above the floor slab. The roof matrix was not sampled during the investigation.

3.0 REGULATIONS, GUIDELINES, STANDARDS AND INVESTIGATION METHODOLOGY

The Regulations, Guidelines, and Standards referenced throughout this report are listed and defined in Appendix A. Similarly, the Investigation and Sampling Methodology are provided in Appendix B.

4.0 RESULTS AND DISCUSSION

4.1 Asbestos

ACM was previously identified at this Site, however due to the extensive demolition and renovations operations completed on the Site since the 2008 Golder Report, no ACM was visually observed during the investigation.

For information regarding the previous existence of ACM at this Site refer to the 2008 Golder Report.

Due to the nature of the investigation, asbestos-containing building materials may be present in areas that were inaccessible, given the limitations of Golder's investigative methodology noted above. Any materials found in these spaces that were not previously identified should be considered asbestos-containing until proven otherwise**.** Other components considered to be non-friable asbestos-suspected materials (i.e., the electrical system & components) identified herein were not sampled as the sampling process will damage the integrity of these items.

4.2 Lead

Lead-containing paint was previously identified at this Site, however due to recent renovations and demolition operations the original painted surfaces were not observed. Due the application of new paint on various new building materials, lead paint was not suspected to be present. No new paint samples were acquired during the investigation.

However, lead is suspected to be present in batteries, associated with emergency lighting and exit signs and as the solder on (copper) domestic water pipes. Although not observed, lead is suspected to be present within lead-based domestic water pipes, and in the packing material for “bell and spigot” water drainage pipe connections in concealed locations. Lead coating may be present on the steel beams and columns throughout the Site. Lead sheeting may also be concealed behind other finished surfaces throughout the Site (i.e. flashing, brick ties, plugs for weeping holes in brick, etc.), however these materials were not observed during Golder’s investigation.

4.3 Mercury

Approximately 75 fluorescent light tubes were observed throughout the Site which are suspected to contain small amounts of mercury vapour. Mercury is also likely present in concealed locations/equipment such as within thermostats thermometers electrical switches, etc. No samples of these materials were collected.

4.4 Silica

Silica is a naturally occurring mineral and may be found as common aggregates in concrete products, mortar, brick and ceiling tiles and is likely present in the Site. The health risk associated from exposure to silica is due primarily to the inhalation of respirable crystalline silica, particularly in the form of dust associated with the abrading or cutting of silica-containing materials. Silica is suspected to be present in concrete and concrete products (mortar, concrete, etc.) throughout the Site. No samples of these materials were collected.

4.5 Polychlorinated Biphenyls

The Site was visually assessed for the presence of PCBs in the fluorescent light ballasts. The presence of PCBs can be assessed by recording the manufacturers label located on the light ballast. Where necessary, label information from the ballasts such as the manufacturer, model numbers, serial numbers, and date codes can be collected and compared to the criteria found in the Environment Canada Report EPS 2/CC/2 (revised) August 1991, Identification of Lamp Ballasts Containing PCBs. Approximately 40 fluorescent light ballasts were observed throughout the Site. Due to the risk of electrocution the manufacturer, model and serial numbers were not reviewed for the ballasts. Based on the recent renovations which have been completed at the Site none of ballasts investigated are suspected to contain PCBs.

No other suspect PCB was observed during the investigation.

4.6 Ozone Depleting Substances

No suspect ODS were observed during the investigation.

4.7 Controlled Products and Hazardous Chemicals Inventory

During Golder’s investigation, no controlled products were reported or observed at the Site.

4.8 Mould

No mould contamination was noted during Golder's investigation.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Asbestos

Due to the recent renovation and abatement activities which have occurred, previously identified ACM were not observed during Golders investigation. However, it is possible that trace/residual remaining ACM may be present in concealed or buried locations associated with any remaining Basement/Foundation locations at the Site, that were remaining following the recent demolition and renovation operations.

Based on the Site observations and changes in previously identified ACM, the following recommendations are provided:

1) Certain building materials/systems such as the packing material within the "bell and spigot" cast-iron water drainage pipe connections (which may be located in concealed locations), and the electrical cable sheathing and various electrical components, could not be sampled at the time of the investigation. These materials are presumed to be asbestos-containing and should be removed following Type 1 asbestos procedures, in conjunction with future renovation/demolition operations. Alternatively, once the electrical system has been de-energized, and immediately prior to the demolition, the packing material within the bells and spigots, as well as the various electrical components can be sampled to confirm the presence of asbestos in these building materials/systems.

2) Although not observed, floor levelling compound may be present beneath existing flooring surfaces. If this material is encountered during the planned renovations, work should stop and the material sampled and analyzed by an accredited lab to determine asbestos content.

3) If suspected ACM not identified in this report are encountered during any future renovation/demolition activities, the work should stop immediately and the material tested to confirm the presence or absence of asbestos. Refer to the historic DSS/Asbestos reports noted above for additional information. This would be executed in order to provide recommendations on the applicable work procedures as prescribed under O. Reg. 278/05. Due to the age of this Site, as well as the numerous renovations completed, there is a possibility that additional concealed materials not identified or known may arise during future renovation or maintenance activities. Based on this, it is Golder's opinion that a contingency be carried for all renovation work to allow for the identification and abatement of previously unidentified materials. In addition, contractors retained to work on this project should be notified of this limitation and written procedures should be established in case additional materials are identified. The overall objective is to minimize exposure during any proposed renovations.

5.2 Lead

Lead-containing paint was previously identified at this Site, however due to recent renovations and demolition operations the original painted surfaces were not observed. Do the application of new paint on various new building materials, lead paint was not suspected to be present.

Suspected lead-containing solder is present on domestic water pipes throughout the Site. Although not observed, due to the original age of construction it is possible that lead-based domestic water pipes may be

present within concealed locations. During renovation or demolition activities, inaccessible lead-containing materials may be uncovered (i.e., lead sheeting, domestic water pipes, flashing or brick ties). All bulk lead-containing materials should be extracted and sent to a recycling facility. If recycling of the lead is not practicable then it must be disposed of in an approved landfill as lead waste.

5.3 Mercury

Mercury is suspected to be present within the approximately 75 fluorescent light bulbs observed throughout the Site. It is recommended that at the time of their disposal, mercury vapour bulbs may be recycled and possibly reused by qualified personnel or may be disposed of in accordance with procedures specified by federal and provincial regulations. It is recommended that at the time of their disposal, mercury bulbs are kept separate from all other waste to prevent damage to the glass bulb/fixture containing the mercury.

Prior to renovation or demolition operations mercury-containing components should be identified and labelled. Any components suspected to contain mercury should be presumed mercury-containing until proven otherwise. Staff who may work in the mediate vicinity of mercury-containing components should be trained in the safe handling of mercury.

5.4 Silica

Sampling for crystalline silica was not conducted during this assessment. However, silica is likely to be present in the aggregate-based materials used to construct the building. During any renovation activities, it is recommended that materials suspected to contain silica are routinely misted with water to control airborne dust levels, thereby preventing worker and public exposure to silica. Any work involving disturbances to silica must be completed in accordance with the Guideline - Silica on Construction Projects, dated September 2004 (updated April 2011).

5.5 Polychlorinated Biphenyls

Based on information collected from the Site and visual identification, the fluorescent light ballasts most likely do not contain PCBs. For confirmation purposes prior to disposing of light ballast, all light ballasts must be checked and compared to the Environment Canada's Report EPS 2/CC/2 (revised) August 1991, Identification of Lamp Ballasts Containing PCBs. Ballasts clearly identified as "Non-PCB" or "PCB-Free" can be recycled or disposed of as regular construction waste. All other ballasts must be identified by the markings, date code, model and serial number to confirm the presence of PCBs. If the ballast cannot be positively identified as non PCB-containing, then the ballast should be disposed of as PCB-containing. All PCB-containing materials should be handled, stored or disposed of in accordance with the PCB Regulations (SOR 2008/273) and General Waste Regulation (O. Reg. 347/90). If the ballasts are free of PCBs they can be disposed of as solid, non-hazardous waste as they do not exceed the small quantity exemption established by the MOE. No samples of this material were collected.

5.6 Ozone Depleting Substances

No suspect ODS were observed during the investigation.

5.7 Other Hazardous Materials

Based on the survey, the following materials were not identified in the investigated areas at the Site: acrylonitrile; benzene; coke oven emissions; ethylene oxide; isocyanates; and vinyl chloride.

5.8 Controlled Products and Hazardous Chemicals Inventory

Based on the information obtained as part of this investigation, no controlled products or other hazardous chemicals were reported or identified at the Site.

6.0 LIMITATIONS

This report was prepared for the exclusive use of The Corporation of the City of Oshawa. This report should be read in conjunction with, as well as attached to the 2008 Golder Report. This report is based on data and information collected during the Site visits conducted by Golder and is based solely on Site conditions encountered at the time of the survey, supplemented by historical information and data obtained by Golder as described in this report.

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 applicable and currently accepted occupational health and safety or environmental assessment standards and practices applicable to these locations 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.
- The findings, observations and conclusions expressed by Golder 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.
- It is our understanding that this DSS is not intended to be a Pre-Construction/Pre-Demolition Survey. Prior to starting any scheduled renovation/demolition work on the interior and/or exterior of the Site building, a more intrusive Project Specific Pre-Construction/Pre-Demolition Survey may also be required to adequately investigate, identify and report on concealed materials. The Building Owner, in conjunction with the Occupant and/or Contractor, must review the on-Site conditions to determine if additional investigation and/or sampling for Asbestos and other Designated Substances should be completed.
- Additional hazardous building materials not identified in this report may become evident during renovation activities. Should additional information become available, Golder requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.
- Golder 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.
- Golder's 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 and 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 and safety laws, rules, regulations or policies of federal, provincial, or local governmental agencies. Any use of this assessment report constitutes acceptance of the limits of Golder's liability. Golder's 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.

- The data reported and the findings and recommendations expressed in this report are limited by the Scope of Work. The Scope of Work is based on the request of the client, availability of access to the property and time constraints.
- In evaluating the Site conditions, Golder has relied in good faith on information provided by others. We accept no responsibility for any deficiency, mis-statements or inaccuracies contained in this report as a result of omissions, misinterpretations or fraudulent acts of the persons involved.
- The 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 "contractor" to confirm the exact quantities of designated substances to be removed, prior to their removal.
- This report is of a summary nature and is not intended to stand alone without reference to the instructions given to Golder by the Client, communications between Golder and the Client, and to any other reports prepared by Golder for the Client relative to the specific site described in the report. In order to properly understand the suggestions, recommendations and opinions expressed in this report, reference must be made to the whole of the report. Golder cannot be responsible for use of portions of the report without reference to the entire report.
- Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project. The extent and detail of investigations, including the number of locations investigated, necessary to determine all of the relevant conditions which may affect construction costs would normally be greater than has been carried out for design purposes. Contractors bidding on, or undertaking the work, should rely on their own investigations, as well as their own interpretations of the factual data presented in the report, as to how concealed conditions may affect their work, including but not limited to proposed construction techniques, schedule, safety and equipment capabilities.
- Special risks occur whenever engineering or related disciplines are applied to identify Site conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain Site conditions. The conditions that Golder interprets to exist between and beyond investigation and sampling points may differ from those that actually exist.
- Details of future renovation are not known at the time of submission of Golder's report. Golder should be retained to review any design, project plans and documents prior to construction, to confirm that they are consistent with the intent of Golder's report. During construction, Golder should be retained to perform sufficient and timely observations of encountered conditions to confirm and document that the subsurface conditions do not materially differ from those interpreted conditions considered in the preparation of Golder's report and to confirm and document that construction activities do not adversely affect the suggestions, recommendations and opinions contained in Golder's report. Adequate field review, observation and testing during construction are necessary for Golder to be able to provide letters of assurance, in accordance with the requirements of many regulatory authorities. In cases where this

recommendation is not followed, Golder's responsibility is limited to interpreting accurately the information encountered at the locations investigated, at the time of their initial determination or measurement during the preparation of the Report.

7.0 CLOSURE

If you have any questions or require any further information, please feel free to contact the undersigned at (905) 723-2727. Thank you for the opportunity to be of service. We look forward to working with you again.

Report Signature Page

GOLDER ASSOCIATES LTD.

Garrett MacDonald, B.Sc.
Environmental Health and Safety Specialist
Environmental Health & Safety Group

Robert Stoyanoff, BTech MBA CChem CIH.
Senior Industrial Hygienist
Environmental Health & Safety Group

GM/RS:kc

\\golder.gds\gal\mississauga\active\2012\1187-ehs\12-1187-0086-city of oshawa-dss portfolio-oshawa\sites\1017 - city hall a wing\reports\12-1187-0086 (1017) - cofo - city hall a wing - 50 centre street south-04apr13-final.docx

APPENDIX A

Regulations, Guidelines, and Standards

REGULATIONS, GUIDELINES AND STANDARDS

Occupational Health and Safety Act

The Occupational Health and Safety Act (the "*Act")* prescribes designated substances that may be present within buildings. The intent of the *Act* is to identify the presence of building materials and products that may contain designated substances. Section 30 of the *Act* requires that, prior to beginning a construction project (including building renovation or demolition); a document summarizing the presence of these materials must be available to contractors and subcontractors requesting tenders.

Ontario Regulation 490/09 - Designated Substances, as amended ("O. Reg. 490/09"), regulates all designated substances in Ontario, with the exception of asbestos in building materials, which is prescribed under Ontario Regulation 278/05 - Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, as amended ("O. Reg. 278/05").

Asbestos-Containing Materials

O. Reg. 278/05 prescribes specific procedures for the identification of ACM and protocols for their removal. Under this regulation, if ACM are suspected to be present or ought reasonably to be suspected, locations of the materials must be documented. Prior to a renovation project, a document detailing the presence of all ACM must be available to contractors and subcontractors requesting tenders. All ACM must be removed or managed appropriately prior to any disturbance caused by the renovation process in accordance with provincial regulations.

Ontario Regulation 347/90 - General Waste Management, as amended ("O. Reg. 347/90"), made under the *Environmental Protection Act*, prescribes requirements for general waste management including ACM. The regulation defines "asbestos waste" as "solid or liquid waste that results from the removal of asbestos-containing construction or insulation materials or from the manufacture of asbestos-containing products and contains asbestos in more than a trivial amount or proportion". This regulation requires the disposal of asbestos waste in a double sealed container, properly labelled and free of cuts, tears or punctures. The waste must be disposed of in a licensed waste facility which has been properly notified of the presence of asbestos waste.

Lead

Lead was used as a pigment and drying agent in alkyd oil-based paint. 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. 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.

O. Reg. 490/09 prescribes requirements relating to protocols for lead-containing materials in the workplace, where lead is present, produced, used, handled or stored and at which the worker is likely to inhale, ingest, or absorb lead. However, O. Reg. 490/09 does not apply to construction projects. Nevertheless, the constructor and employers on construction projects have a duty to take all reasonable precautions to ensure that no worker is unacceptably exposed to airborne lead.

If operations that will likely produce airborne lead dust or fumes (e.g. during welding, torch cutting, sanding and sand blasting) are to occur during building renovation or construction, it is recommended that the disturbance of lead paint be carried out in accordance with procedures outlined in the Ontario Ministry of Labour ("MOL") Guideline Lead on Construction Projects dated September 2004 (updated April 2011).

The MOL currently does not include criteria for classification of lead-containing paint, and allows for no minimum concentrations of lead in paint to be acceptable as non-lead containing. Therefore in these circumstances, Golder considers all paints with any detectable presence of lead as lead-containing. The accepted laboratory testing methods for determination of lead in paint is either flame atomic absorption spectroscopy ("FAAS") or inductively coupled argon plasma-atomic emission spectroscopy ("ICAP-AES").

Mercury

Mercury is regulated under O. Reg. 490/09., which prescribes occupational exposure limits ("OELs") and other requirements for engineering controls, work practices and hygiene practices and facilities for workers who may become exposed to mercury.

Silica

Silica is a naturally occurring mineral and may be found in common aggregates in concrete mortar, brick and ceiling tiles. Silica is likely present in the concrete and mortar used to construct the Site. The health risks associated with exposure to silica is due primarily to the inhalation of respirable crystalline silica, particularly in the form of dust associated with the abrading or cutting of silica containing materials.

Silica is regulated under O. Reg. 490/09. This regulation prescribes OELs and requirements surrounding engineering controls, work practices and hygiene practices and facilities to protect workers who may be potentially exposed to crystalline silica. As prescribed under O. Reg. 490/09, an employer shall take all reasonable precautions to prevent worker exposure to silica. Procedures for workers involved in construction/demolition activities occurring on a Site where silica is disturbed are outlined in the MOL Guideline - Silica on Construction Projects dated September 2004 (updated April 2011).

Polychlorinated Biphenyls

PCBs were used as a dielectric fluid in electrical equipment such as transformers, light ballasts and capacitors. The use of PCBs in fluorescent lamp ballast capacitors was common up to 1980. The PCB Regulations ("SOR/2008-273") prohibits and restricts the use of PCBs pertaining to the manufacture, export, import, sale and or processing of PCBs and PCB-containing products.

SOR/2008-273 prescribes requirements pertaining to the handling, storage and disposal of PCBs and PCB-containing equipment. Recent revisions to the federal regulation have provided end-of-use deadlines for liquids containing PCBs, as well as PCBs in specified equipment. The first such deadline was December 31, 2009, by which time all equipment containing PCBs at concentrations greater than 500 mg/kg, and equipment within 100 metres of specified sensitive locations and containing PCBs at concentrations greater than 50 mg/kg, must have been phased out of use. These deadlines exclude PCB-containing light ballasts, and pole-mounted transformers.

Ozone-Depleting Substances

The Federal Halocarbon Regulations ("SOR/2003-289"), was enacted to ensure uniformity with respect to the release, recovery and recycling of ODS and their halocarbon alternatives in refrigeration and air conditioning systems. The regulation also requires that permits be obtained to import or export used, recovered, recycled and reclaimed ODS. Equipment containing ODS should be removed by a licensed contractor and handled in accordance with the *Code of Practice for the Reduction of CFC Emissions from Refrigeration and Air Conditioning Systems*, updated in 2008, and Ontario Regulation 463/10 - Ozone Depleting Substances and other Halocarbons ("O. Reg. 463/10"). ODS are often present in refrigerators and freezers, vending machines (refrigerated) and in water fountains/water coolers as well air conditioning systems.

Controlled Products and Hazardous Chemicals

In the province of Ontario, controlled products and chemicals are regulated under the Workplace Hazardous Materials Information System Regulation ("O. Reg. 860/90"), made under the Act. This regulation sets out the prescriptive requirements surrounding: designation of a hazardous material/controlled product, assessment of biological or chemical agents, exemptions, worker education, label requirements, and Material Safety Data Sheets ("MSDS").

Identification and Transportation of Hazardous Waste

O. Reg. 347/90 prescribes waste characterization, handling and disposal requirements for generators of hazardous waste. The transportation of hazardous wastes is governed under the *Transportation of Dangerous Goods Act* (and Regulations) which prescribe requirements for storage, handling, and transportation of such waste.

Mould

Although indoor air quality in public buildings or other non-industrial establishments are currently not regulated in Canada, various organizations and agencies have established recommended guidelines for evaluating the air quality for non-industrial environments. These guidelines recommend maximum concentrations and exposure times for specific airborne pollutants in indoor and outdoor environments.

APPENDIX B

Methodology

METHODOLOGY

The surveyor visually investigated the Site for suspected friable and non-friable ACM, lead-containing paint, mercury in thermostats and pressure sensing devices, PCBs in light ballasts, and ODS in refrigerants (i.e. air-conditioning units, water coolers, etc.). The remaining designated substances were not expected to be present at this Site due to the use of the building and were not noted as part of the survey.

Asbestos-Containing Materials

Readily available information was gathered regarding the building including age, type of structure, historical documents including previous reports, presence of renovated areas or additions, and any details regarding the building mechanical systems. No suspect ACM was observed on Site.

Lead

Although lead-based paints were confirmed to be present in previous surveys, the Site was assessed to be free of LPB. An inventory was made of the other known or suspected lead-containing materials (i.e. batteries for emergency lights, solder on pipes, lead pipes, etc.) based on visual observations.

Mercury

A review of potential mercury-containing equipment installed at the Site was completed as part of the survey, such that any mercury-containing switches, thermostats (switch bulbs) and pressure-sensing devices were noted, if observed.

Elemental mercury may be present in thermostats and trace amounts of mercury vapour may be present in metal halide light bulbs and fluorescent light tubes. If elemental mercury from a thermostat is spilled, the beads and droplets can accumulate and emit colourless and odourless vapours. These vapours may present a health risk to building occupants. Light bulbs and tubes, if broken, may pose an occupational hazard to unprotected workers.

Silica

Silica is presumed to be present in building materials constructed from raw aggregates such as concrete mortar, brick, plaster and ceiling tiles. Silica is likely present in the concrete and aggregate used to construct the Site. As such, no sampling was conducted to confirm the presence of silica in such building materials.

Polychlorinated Biphenyls

The Site was visually assessed for the presence of PCBs in fluorescent light ballasts. No other equipment suspected of containing PCBs was observed during the investigation. The presence of PCBs in the ballasts was assessed based on the manufacturer's label located on the light ballast. Where necessary, label information from the ballasts such as the manufacturer, model numbers, serial numbers, and date codes can be collected and compared to the criteria found in the Environment Canada Report EPS 2/CC/2 (revised) August 1991 - Identification of Lamp Ballasts Containing PCBs. No PCB sampling was conducted during the Site visit.

Ozone-depleting Substances

A review of thermostats, refrigeration and air conditioning units was completed to verify the presence of ozone depleting substances such as refrigerants R-11, R-12 and R-22, where observed. The presence of CFCs is

determined by gathering label information such as the manufacturer, model numbers, serial numbers and date codes.

Controlled Products and Chemical Inventory

Through visual identification, on-Site records review (where provided to Golder during the investigation, i.e., WHMIS/MSDS information, etc.), and interviews with on-Site personnel, Golder noted no chemicals stored or managed at the Site.

Mould

The assessment was conducted in general accordance with Health Canada and American Conference of Governmental Industrial Hygienists (ACGIH) protocols for microbiological assessment and control. Destructive testing or intrusive investigation techniques not were used by Golder as part of this investigation.

Through visual identification only, suspected mould contamination at the Site was not noted during Golder's investigation. The visual assessment included a review of readily accessible areas at the Site, which included floors, walls, and ceilings for evidence for obvious or suspect mould growth on building materials.

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Ltd.
100, Scotia Court
Whitby, Ontario, L1N 8Y6
Canada
T: +1 (905) 723 2727

Golder Associates