Part 1 General

1.1 REGULATORY REQUIREMENTS

.1 An investigation into the presence of designated substances for the Cliff Street Park and Escarpment Rehabilitation Project in Ottawa, Ontario was performed in order to meet the requirements of the Canada Labour Code under Part II, Section 124 that every employer shall ensure that the health and safety at work of every person employed by the employer is protected. Furthermore, Section 125(1) (z.14) of the Canada Labour Code stipulates that the employer, to the extent that he controls the activity, will take all reasonable care to ensure that all persons granted access to the work place, other than the employer's employees, are informed of every known or foreseeable health and safety hazard to which they are likely to be exposed in the work place. In addition, it was performed to meet the requirements of Section 30 of the Ontario Occupational Health and Safety Act, Revised Statutes of Ontario, 1990, Chapter 0.1. By having a Designated Substances Report (DSR) conducted, the Departmental Representative will be able to inform his or her employees, contractors, and tenants of any designated substances that may be present and possibly disturbed throughout the duration of the project. The informed Departmental Representative will then be able to impose appropriate health and safety precautions for all applicable personnel as required.

.2 The designated substances identified in the Occupational Health and Safety Act and its corresponding regulations are:

- .1 **Acrylonitrile**: “Designated Substances” O. Reg 490/09 (as amended)
- .2 **Arsenic**: “Designated Substances” O. Reg 490/09 (as amended)
- .3 **Asbestos:**
  - .1 “Designated Substances” O. Reg 490/09 (as amended)
  - .2 “General – Waste Management” O. Reg 347/90 (as amended)
  - .3 “Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations” O.Reg 278/05 (as amended)
  - .4 PWGSC Departmental Policy DP 057 – “Asbestos Management”
- .4 **Benzene:** “Designated Substances” O. Reg 490/09 (as amended)
- .5 **Coke Oven Emissions:** “Designated Substances” O. Reg 490/09 (as amended)
- .6 **Ethylene Oxide:** “Designated Substances” O. Reg 490/09 (as amended)
- .7 **Isocyanates:** “Designated Substances” O. Reg 490/09 (as amended)
- .8 **Lead:**
  - .1 “Designated Substances” O. Reg 490/09 (as amended)
  - .2 “General – Waste Management” O. Reg 347/90 (as amended)
  - .3 Canada Consumer Product Act’s Surface Coating Materials Regulations SOR/2005-109 (as amended)
- .9 **Mercury:**
  - .1 “Designated Substances” O. Reg 490/09 (as amended)
  - .2 “General – Waste Management” O. Reg 347/90 (as amended)

.10 **Silica:** "Designated Substances" O. Reg 490/09 (as amended)

.11 **Vinyl Chloride:** "Designated Substances" O. Reg 490/09 (as amended)

.3 All contractors requesting tenders from subcontractors shall furnish this report to subcontractors. **This report must be read in its entirety, including text and tables.**

1.2 VALIDITY DATE

.1 El Houcine Faouzi, Environmental Analyst of the Environmental Services Directorate of the Real Property Branch, PWGSC, conducted the on-site survey for this report on 2014/01/21.

.2 Applicable sampling and analytical results contained in the previous Designated Substances Report completed for the Cliff Park Rehabilitation Project in June, 2009 have been referenced in this report.

.3 The project area is located at the Supreme Court of Canada, 301 Wellington Street, Ottawa, Ontario. The scope of work is to address the invasive vegetation, the drainage, and the lighting issues of Cliff Park, as well as the scaling and stabilization of the rocky escarpment directly adjacent.

.1 The scope of work for this report involved a visual inspection of construction materials and contents for the presence of suspected designated substances within the project areas. In addition, the survey refers to Polychlorinated Biphenyls (PCBs) and Halocarbons.

.2 The survey was limited to those areas that could be accessed by non-destructive means. The inspection was limited to readily accessible areas.

.3 No other areas outside the defined work boundaries have been assessed.

.4 Prior to beginning work, it must be confirmed with the Departmental Representative that no additional designated substances have been brought to the project area.

.5 There is a possibility that materials that could not be reasonably identified within the scope of this assessment or which were not apparent during previous site visits may exist. Should any designated substance be encountered in the course of demolition or renovation, work must be stopped, preventative measures taken, and the Departmental Representative must be notified immediately. **Do not proceed until written instructions have been received**.

PART 2 Designated Substances

2.1 SURVEY RESULTS

.1 **ACRYLONITRILE:** Not Identified

.2 **ARSENIC:** Not Identified

.3 **ASBESTOS:** Not Identified

.4 **BENZENE:** Not Identified

.5 **COKE OVEN EMISSIONS:** Not Identified

.6 **ETHYLENE OXIDE:** Not Identified

.7 **ISOCYANATES:** Not Identified

.8 **LEAD: Identified**

Lead is a naturally occurring metal. It was used primarily in paint prior to the 1980's to increase the drying process. Lead in paint becomes a danger when it is old or damaged, as it creates lead dust and chips. Lead can also be found in soldered joints installed on piping up to the mid 1990s and in older cast iron bell and spigot joints.

.1 According to the Canada Consumer Product Act's Surface Coating Materials Regulations SOR/2005-109 (as amended) allowable concentration of lead in surface coatings is 0.009 percent by weight (weight of lead to weight of paint), i.e. 90 parts per million (ppm).

.2 Analytical results from the sampling completed in June 2009 indicate that the black paint on the fencing of the Cliff Street Park has a lead content higher than the 90ppm threshold outlined in the Canada Consumer Product Act's Surface Coating Materials Regulations SOR/2005-109 (as amended). The results are shown in Table 1 below.

Table 1: Lead Sample Results

Sample ID	Description	Location	Lead Content (ppm)
***Cliffp-Pb-1**	**Black paint**	**On the metal fence of the Cliff Park**	**1680**

n/d = none detected

Bold items exceed the 90 ppm limit for lead, as per Canada Consumer Product Act's Surface Coating Materials Regulations SOR/2005-109 (as amended).

*Referenced in 'Designated Substances Report completed for the Cliff Park Rehabilitation Project, June 2009.

.9 **MERCURY: Suspected**

Mercury is assumed present in vapour form and in the high intensity discharge (HID) lamps located in the Cliff Park.

.10 SILICA: Identified

Free crystalline silica is assumed present in the concrete, rocks, the shotcrete (gunite) that was applied to the escarpment face for its stabilization, and the masonry within the project area.

.11 **VINYL CHLORIDE MONOMER:** Not Identified

.12 **POLYCHLORINATED BIPHENYLS (PCBs): Suspected**

HID lights in the Cliff Park are suspected to contain PCB ballasts or capacitors, until proven otherwise.

.13 **HALOCARBONS:** Not Identified

.14 **OTHER HAZARDOUS MATERIALS: Suspected**

Although not considered a designated substance, it should be noted that accumulations of avian fecal matter may be present within birdfeeders located in the Cliff Street Park.

2.2 RECOMMENDATIONS

.1 LEAD

If lead-containing materials are disturbed (i.e. during dry sanding, grinding, polishing and sawing operations), then proper precautions, as outlined under “Designated Substances - Lead” O.Reg 490/09 (as amended), of the Occupational Health and Safety Act, must be followed.

Under Ontario Regulation 490/09 (as amended) of the Occupational Health and Safety Act, regulatory limits have been established for occupational exposure limits to airborne lead that may be present in a workplace. The Time Weighted Average Exposure Values to airborne lead dust or fumes should not exceed the Ministry of Labour’s 0.05 milligram per cubic metre (mg/m^3) limit during the removal of paints and products containing any concentration of lead. The TWAEV represents the time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse health effects.

Contractors performing work that requires disturbance of lead-containing materials are responsible to ensure that the workers are not exposed to airborne lead dust levels in excess of the time-weighted average and Maximum Exposure Concentration for lead-containing paints. It should be noted that the use of mechanically-powered tools or torches on lead-containing materials increases the concentration of airborne lead dust or fumes and thereby requiring more stringent respiratory protection and controlled work procedures.

.1 Ontario Ministry of Labour (MoL) has published the document entitled “Guideline: Lead on Construction Projects”. This document classifies all disturbances of lead-containing materials as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, based on presumed airborne concentrations of lead generated during the work each of which will have defined work practices. Although this document is not a regulation, Ministry of Labour Inspectors use it as guidance during site inspections.

.2 The disposal of construction waste containing lead is controlled by “General – Waste Management” O.Reg 347/90, as amended, under the Ontario Environmental Protection Act. The classification of the waste is dependent upon the result(s) of leachate test(s). The waste can be classified as "hazardous", "non-hazardous" or of the leachate test.

Prior to disposal, the concentration of leachable lead must be determined for waste materials with elevated lead contents following the Toxicity Characteristic Leaching Procedure (TCLP) (O.Reg 347/90, as amended).

.2 MERCURY

.1 Mercury is governed by “Designated Substance – Mercury” O.Reg 490/09 (as amended) under the Occupational Health and Safety Act. The regulation provides requirements for allowable exposure levels.

.2 In addition, mercury waste is considered a hazardous waste under “General – Waste Management” O.Reg 347/90 (as amended) of the Ontario Environmental Protection Act. Fluorescent lamp tubes are considered hazardous material and should be recycled if removed from service. For information regarding the collection of fluorescent lamp tubes, please consult the Departmental Representative.

.3 SILICA

.1 Silica occurs as crystalline material in cement. Crystalline silica is regulated under "Designated Substance – Silica" O.Reg 490/09 (as amended) of the Occupational Health and Safety Act as a Designated Substance.

.2 Silica dust can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material. Since silica is present in the concrete, rocks, the shotcrete (gunite) that was applied to the escarpment face for its stabilization and the masonry within the project area, appropriate respiratory protection and ventilation must be donned during the demolition and modifications of these structures.

.3 The Occupational Health and Safety Branch of the MoL has published the document entitled "Guideline: Silica on Construction Projects". This document classifies the disturbance of materials containing silica as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. These work procedures should be followed when performing work involving the disturbance of silica-containing materials.

.4 POLYCHLORINATED BIPHENYLS (PCBs)

(NOT RECOGNIZED AS A DESIGNATED SUBSTANCE)

.1 PCBs are not recognized as Designated Substances. However, a survey of the project area was completed for this substance due to its risks to both human health and environment. It was not feasible during the survey to determine whether light fixtures or HID lamp ballasts in the project area were free of PCBs. Therefore, if any fluorescent light ballasts are removed during this project, please refer to the Environment Canada, Identification of Lamp Ballasts Containing PCBs, August 1991 report in order to identify the ballast type.

.2 If any fluorescent light ballasts are removed during any future works, they must be sorted by a competent person.

PCB-containing equipment must be disposed of in accordance with:

- Canadian Environmental Protection Act's (CEPA) PCB Regulations
- Canadian Council of Ministers of the Environment's "Guidelines for the Management of Wastes Containing Polychlorinated Biphenyls
- Ontario Environmental Protection Act's O. Reg 362/90 "Waste Management – PCB's" as amended (O. Reg 33/07)

All PCB-containing equipment that is removed from the site or placed into storage shall be appropriately reported in accordance with the requirements of the CEPA PCB Regulations.

.5 AVIAN FECAL MATTER

(NOT RECOGNIZED AS A DESIGNATED SUBSTANCE)

Due to the health threats associated with mycotic organisms inhabiting avian fecal matter, it is recommended that prior to disturbance, avian fecal matter be cleaned and removed following the appropriate work procedures given in Appendix B of the document titled EACO Mould Abatement Guidelines, 2nd edition (2010) published by the Environmental Abatement Council of Ontario. Following clean-up, packaging and disposal of all avian fecal matter impacted waste should be performed in such a manner as to avoid cross-contamination of unaffected areas. Disposal of waste should be performed in accordance with local, municipal, provincial, and/or federal jurisdictions having authority.

.6 CONTRACTORS DUTIES

The contractor must review the designated substance report and take the necessary precautions to protect the health and safety of the workers and the environment. As per Section 30(4) of the Ontario Occupational Health and Safety Act, the party hiring the contractor (i.e. Departmental Representative) shall ensure that the contractor and subcontractor (if any) for the project has received a copy of the designated substance report prior to entering a binding contract for the supply of work on the project. As per Section 27(2) (a, b, and c) of the Ontario Occupational Health and Safety Act, while onsite, the contractor shall exercise every reasonable precaution for the protection of a worker. If you have any questions about the designated substance report, please contact the Departmental Representative.

END OF SECTION