



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works and Government Services Canada
1650, 635 - 8 Ave SW
Calgary
Alberta
T2P 3M3
Bid Fax: (403) 292-5786

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Public Works and Government Services Canada
Northern Contaminated Site Program
ATB Place North Tower
10025 Jasper Avenue
Edmonton
Alberta
T5J 1S6

Title - Sujet Lead Dust Remediation	
Solicitation No. - N° de l'invitation ET022-161920/A	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client RCMP ET022-161920	Date 2016-01-15
GETS Reference No. - N° de référence de SEAG PW-\$NCS-129-10660	
File No. - N° de dossier NCS-5-38290 (129)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-01-21	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Izzotti, Diana	Buyer Id - Id de l'acheteur ncs129
Telephone No. - N° de téléphone (403) 680-6109 ()	FAX No. - N° de FAX (403) 292-5786
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Room 146 – Identification Garage

- a) The onsite contractor referred to the scope of work and indicated that all horizontal surfaces are to be cleaned.
- b) The RCMP will remove anything they do not want touched
- c) A top down approach for cleaning is to be used
- d) The floor is to be resealed (refer to specs for details)

Question 1

Are the ducts to be cleaned?

Answer 1

The drawings in the specs (Fig 3) indicate what is to be done in this room.

Question 2

Are the cabinets to be cleaned?

Answer 2

All the tops of the cabinets and loose material in the room is to be cleaned

Question 3

Can we take pictures (in this room)?

Answer 3

No

Room 147

One vent to be cleaned

Room 164 area (offices 165 & 166)

Diffusers to be cleaned

Room 161 – LAB Area

- a) Spoke about the hoods and where they vent out
- b) Ceiling tiles can be removed for cleaning
- c) This is a discharge hepafilter area - exhaust with hoods
- d) There is no salvage, part of the disposal component

Rooms 158, 157, 152, 153, 150, 149

- a) Horizontal surfaces are to be cleaned

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

b) Loose items to be cleaned and set aside (RCMP will dispose of items/clear items)

Question 4

Will the tools and solvents be gone?

Answer 4

To be wiped down, boxed and covered with poly

Question 5

Is there central vac?

Answer 5

The central Vac connections are to be cleaned out

Room 150

Ceiling doesn't have to be cleaned, just anything below

Room 149

- a) Cabinets do not need to be wiped down
- b) Lead can go for recycling (solid pieces)
- c) See specs for Misc. room content (in drawings)

Range

To be cleaned:

- a) Remove fabric panels
- b) Floors
- c) Stairs
- d) Trap at end
- e) Wood panels (remove to clean)
- f) Water sump to be cleaned (under concrete)
- g) The air circulation is independent of the rest of the building in the range (clean vents)

A plan is to be submitted on how to set up / clean (refer to specs)

Question 6

Can the Risk Assessment report be distributed (EGE Report, Hazmat testing rationale)?

Answer 6

Please see the attached Risk Assessment Report

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

The contractor is responsible for all waste disposal

Room 163 – (could not get access)

- a) Wood, carpeting, shelving and gun racks
- b) Vents to be cleaned
- c) 2 drywall walls and 3 blocks
- d) Furniture and hand tools will be removed

Basement – HVAC System

(Toured room and viewed 001 Crawl Space)

- a) Duct work from range (interior of duct to be cleaned)
 - b) The 5 vacuum canisters to be removed from the vacuum system (dispose of canisters)
 - c) Air handling unit showed
 - d) Clean exterior of ducts in certain area
 - e) Clean back end of all exhaust
 - f) Showed gun range exhaust fan
-

Question 7

Can we cut access panels to get in ducts?

Answer 7

Yes if you repair them afterwards

Question 8

Can we take pictures (in this room)?

Answer 8

Yes

Question 9

Where is the air to vent out in the basement? (Concern about backflow).

Answer 9

Vent into exhaust end (goes to concrete chamber). HEPA filtered air generated by work activities within the basement area can be vented into the existing exhaust ducting or alternatively through the basement relief vent located on the southeast wall of the crawlspace. The exhaust duct located within the crawlspace area shall also be capped following abatement activities to prevent air flow from the building main exhaust systems from entering the crawlspace.

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Question 10

Is on site testing ok?

Answer 10

All is to be vented outside. All HEPA filtered air generated by work activities in the West Block area is to be exhausted to exterior of the building through existing direct venting (fume hoods). There shall be no venting of HEPA filtered air back into the work area(s).

Question 11

Did you sample T-Bar Track, panels?

Answer 11

No

Question 12

Supplementary Conditions SC02 Insurance Terms: - Is it the intent of the contract for the successful general contractor to have lead abatement insurance? Lead abatement contractors carry general liability insurance with lead abatement included in their policies. Typical endorsement is for pollution and general liability. Why is this not detailed in the insurance requirements of this project? Does PWGSC not wish to have hazardous material insurance coverage for this project?

Answer 12

Please see attached amendment to the solicitation document – (Certificate of Insurance detailing G2040C - Environmental Impairment Liability Insurance)

Question 13.

Under Section 01 11 00 Summary of Work 1.1.2 list the EGE Engineering Ltd.'s report titled " Pre-Abatement Lead Assessment – Where can we obtain a copy of the report that is being referenced?

Answer 13

The spec package has drawings and figures that apply to the work required. Please see the additional tables for details regarding the sampling data for each room.

The entire report will not be released, however, the applicable information including the Risk Assessment and tables of the sampling completed are attached.

Question 14

Under Section 01 11 00 Summary of Work 1.1.3 Scope of Work – details experienced Lead Remediation Contractor – What criteria is being used to evaluate this condition? How will this be used to evaluate the bidders?

Answer 14

This will be assessed by demonstrating that the Contractor has or does not have recent experience in the last two years completing hazardous material remediation and Lead Abatement associated training. See Table attached.

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Question 15

Under 'Section 01 11 00 3.2 Lead Abatement .1 – air handling system(s)'

Who is responsible to shut down the mechanical supply and return air systems to the various work areas?

Answer 15

RCMP will isolate the mechanical and electrical systems associated with the unit in advance of the work being completed. Isolation activities to be coordinated with RCMP personnel.

Question 16

Under Section 01 11 00 3.2 Lead Abatement - ...regarding "electrical isolation" only – Who is going to isolate the electrical systems in the area required to be cleaning and / or demolished?

Answer 16

Where possible, RCMP will isolate the mechanical and electrical systems associated with the area(s) in advance of the work being completed. Isolation activities to be coordinated with RCMP personnel.

Question 17

Under Section 01 11 00 Section 3.5 Waste Storage, Transport and Disposal – For pricing purposes we need analytical data on the surfaces to be cleaned for both disposal and to help us define the level of effort to clean the residual lead grime from the surfaces to be cleaned. Further the concentration of lead if any in the materials being cleaned will be necessary to help define the probable success of cleaning the contaminated surfaces along with the likelihood encapsulation of materials. Where can we find this lead data on the level of contamination and lead content in materials to be cleaned?

Answer 17

Please see the attached data tables for sample data.

Question 18

On porous surfaces – concrete, plywood, carpet, mechanical insulated ducting etc. The cleaning process may not be successful after completing the defined level of effort detailed in Section 01 11 00 - 3.2 Lead Abatement section 10. This section and clause seems to anticipate this event and thus defines that the exposed concrete floors are to be sealed using a concrete sealant which is also defined under the scope of work section 01 11 00 clause 1.1.1 within the various room work descriptions. What type of concrete sealant should we consider applying? Please consider that the type of sealants vary greatly in durability, cost and application preparations and methods.

Answer 18

An example of concrete sealant is provided in the specifications – Section 2.1.1. The type of sealant intended to be used by the successful Contractor must be identified in their proposal.

Question 19

RE: 'Section 01 11 00 Scope of Work clause 1.1.1' - Why were the porous plywood floors not listed for sealing in Room 149 scope of work? How should this be valued if it is found they are not cleanable?

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Answer 19

The wood floors are to be cleaned and sealed in this room. The filing cabinets will remain in place.

Question 20

The Concrete floors in Room 152 are not listed to be sealed. Why?

Answer 20

The Room 152 floors are to be sealed also. This room is listed on Figure 3 to be sealed in the general comments.

Question 21

Room 163 was not available to view during the site meeting. It is being cleaned from the top down, however; no direction has been given regarding the floor surface. What is to be done with the floor surface since it is a horizontal surface listed to be cleaned? What type of floor surface is in the room?

Answer 21

The floor surface is carpet. The floor does not need to be cleaned. All other horizontal surfaces to be cleaned. The floor surface will need to be protected while cleaning is completed.

Question 22 Some rooms listed do not define the floor surfaces as being contaminated yet list surfaces above as being lead contaminated (example rooms 154-157 plus others).

Are contractors to assume:

- a) these floor surfaces are clean
- b) these surfaces should be protected from contamination prior to work commencing in the area
- c) there are existing surface samples confirming this conclusion

Answer 22

- a) Yes, floor surfaces are clean.
 - b) Yes, all clean surfaces must be protected.
 - c) Yes, tables of sample data is attached.
-

Question 23

Section 01 11 00 Contractor Use of Premises 1.9.3 – this clause lists rooms to remain operational on a DAILY basis during remediation activities. With the work being performed under personnel protective equipment, negative air systems, along with room 146 being our primary access point – How will these rooms remain operational during their cleaning and surface sealing work activities? What is the clients proposed schedule for this work to occur?

Answer 23

Cleaning Rooms 146 and 148 will require coordination with RCMP personnel. Rooms 146 and 148 are to remain operational. A separate hard surface access enclosure will be required in Room 146.

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Question 24

Section 01 11 00 1.20 Surface Clearance Sampling section .3 details re-cleaning of failed surfaces and then the potential sealing and / or the replacement of these materials. How should this be priced? Please consider that some surfaces observed on site will not be cleanable to the Surface Clearance Sampling criteria defined in the specifications.

Answer 24

We may have some materials that are "not cleanable", such as mechanical insulation within the ducting leading to/from the range. In such cases, a change in scope would be required, but only after 2x washing and testing still demonstrates it cannot be cleaned to acceptable levels. No materials require replacement.

This Amendment is also raised to amend the Solicitation as follows:

A)

On the front page of the ITT under:

1) **RETURN BIDS TO:**

DELETE: Bid Fax: (403) 680-6109

INSERT: Bid Fax: (403) 292-5786

2) **Closing Date :**

DELETE: at - à 02:00 PM on - le 2016-01-19

INSERT: at - à 02:00 PM on - le 2016-01-21

B) On Page 10: **BID AND ACCEPTANCE FORM**

DELETE

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work within two (2) weeks from the date of notification of acceptance of the offer. The work on site shall commence on February 22nd 2016.

INSERT

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work within three (3) weeks from the date of notification of acceptance of the offer. The work on site shall commence on February 22nd 2016.

C)

As per Section SI02 - BID DOCUMENTS, clause 1, item g: Any amendment issued prior to solicitation closing:

INSERT:

Bidders **must** have experience and qualified staff onsite, and shall complete the following declarations prior to award:

1) As per point 1.1.3 of the Scope of Work: *The work is to be completed by an experienced Lead Remediation Contractor.* Do you have experience in the last two years completing hazardous Material remediation?

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Yes:

2) As per point 1.6.1 of the Scope of Work: *Workers used for handling, abatement and packaging for disposal of lead waste, shall have been trained in the hazards associated with lead, acceptable to the Saskatchewan Occupational Health and Safety Division.*

Do you have staff trained in the remediation of hazardous materials; including lead, that will be available to complete the work onsite?

Yes:

D)

DELETE: **ANNEX A - CERTIFICATE OF INSURANCE** (Not required at solicitation closing)

INSERT: **ANNEX A - CERTIFICATE OF INSURANCE** (attached)

CERTIFICATE OF INSURANCE
Page 1 of 2



Description and Location of Work Lead Dust Remediation, RCMP Former Shooting Range. Regina, Saskatchewan	Contract No. ET022-161920
	Project No.

Name of Insurer, Broker or Agent Code	Address (No., Street)	City	Province	Postal
Name of Insured (Contractor) Code	Address (No., Street)	City	Province	Postal
Additional Insured Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services				

Type of Insurance	Insurer Name and Policy Number	Inception Date D / M / Y	Expiry Date D / M / Y	Limits of Liability		
				Per Occurrence	Annual General Aggregate	Completed Operations Aggregate
Commercial General Liability				\$	\$	\$
Umbrella/Excess Liability				\$	\$	\$
Environmental Impairment Liability				\$ <input type="checkbox"/> Per Incident <input type="checkbox"/> Per Occurrence		Aggregate \$

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

"Contractors Pollution Liability"					
"Contractors Professional Liability"					
Automobile Liability Insurance (\$1M)				\$ <input type="checkbox"/> Per Incident <input type="checkbox"/> Per Occurrence	Aggregate \$
<p>I certify that the above policies were issued by insurers in the course of their Insurance business in Canada, are currently in force and include the applicable insurance coverage's stated on page 2 of this Certificate of Insurance, including advance notice of cancellation / reduction in coverage.</p>					
<input type="text"/>				<input type="text"/>	
Name of person authorized to sign on behalf of Insurer(s) (Officer, Agent, Broker) Telephone number					
				<input type="text"/>	
_____ Signature Date D / M / Y					

CERTIFICATE OF INSURANCE Page 2 of 2

General

The insurance policies required on page 1 of the Certificate of Insurance must be in force and must include the insurance coverage listed under the corresponding type of insurance on this page.

The policies must insure the Contractor and must include Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services as an additional Insured.

The insurance policies must be endorsed to provide Canada with not less than thirty (30) days notice in writing in advance of a cancellation of insurance or any reduction in coverage.

Without increasing the limit of liability, the policies must protect all insured parties to the full extent of coverage provided. Further, the policies must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

Commercial General Liability

The insurance coverage provided must not be substantially less than that provided by the latest edition of IBC Form 2100.

The policy must either include or be endorsed to include coverage for the following exposures or hazards if the Work is subject thereto:

- (a) Blasting.
- (b) Pile driving and caisson work.
- (c) Underpinning.
- (d) Removal or weakening of support of any structure or land whether such support be natural or otherwise if the work is performed by the insured contractor.

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

The policy must have the following minimum limits:

- (a) **\$5,000,000** Each Occurrence Limit;
- (b) **\$10,000,000** General Aggregate Limit per policy year if the policy contains a General Aggregate; and
- (c) **\$5,000,000** Products/Completed Operations Aggregate Limit.

Umbrella or excess liability insurance may be used to achieve the required limits.

Environmental Impairment Liability

- 1- The Contractor must obtain "Contractor Pollution Liability" and "Contractors Professional Liability" insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$1,000,000.00 per accident or occurrence and in the annual aggregate.
- 2- If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
- 3- The 'Contractor Pollution Liability' and "Contractors Professional Liability" policy must include the following:
 - a- Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
 - b- Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - c- Separation of Insureds: The policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - d- Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - e- Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which the Contractor is legally liable is performing or has performed the operations described in the contract.
 - f- Asbestos, Lead and Mould Abatement: The policy must extend coverage to activities related to the removal and disposal of asbestos-containing materials, of lead and lead containing materials, of mould and mould containing materials, and of minor amounts of miscellaneous other hazardous materials.
 - g- Storage Tank Third-Party Liability - The policy must extend to off-site third party bodily injury and property damage due to releases from storage tanks (above and below ground). Coverage must include corrective action and clean-up due to releases from storage tanks.
 - h- Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

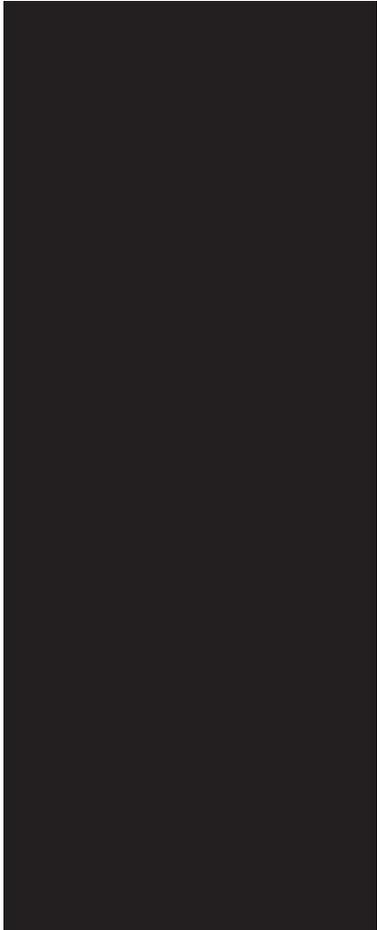
For other provinces and territories, send to:

Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

This Amendment No. 2 to Solicitation #ET022-161920/A is raised to provide the questions and answers identified at the mandatory site visit held January 5, 2016:

Automobile Liability Insurance

1. The Contractor must obtain Automobile Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence.
2. The policy must include the following:
 - a. Third Party Liability - \$2,000,000 Minimum Limit per Accident or Occurrence
 - b. Accident Benefits - all jurisdictional statutes
 - c. Uninsured Motorist Protection
 - d. Notice of Cancellation: The Insurer will endeavor to provide the Contracting Authority thirty (30) days written notice of cancellation.



[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

**RE: Development of Screening Guidelines for Lead in Dust – RCMP
Lab Building, 6101 Dewdney Avenue, Regina, SK**

INTRODUCTION

In response to your request, [Redacted] has developed screening guidelines for lead in dust for the RCMP Lab Building in Regina, Saskatchewan. The purpose of these guidelines is to provide a scientific basis for the management and remediation of lead dust arising from historical operations in the building.

BACKGROUND

The RCMP Lab Building historically included a single-lane indoor firing range used for ballistic testing. These activities resulted in lead dust within the building. [Redacted] collected 123 surface wipe samples in August 2015 and 298 surface wipe samples in September 2015 for lead analysis. Several samples had concentrations exceeding 100 µg/ft², established as a decontamination target for floors, walls and ceilings by the Department of National Defence (DND, 2003).

The objective of this report is to establish risk-based screening guidelines for lead dust on exposed surfaces within the building using methods consistent with risk assessment guidance published by Health Canada.

Based on the locations where [REDACTED] identified lead dust, 3 potential exposure scenarios were identified:

1. Settled dust on surfaces that staff may contact on a daily basis (floors, walls, other horizontal surfaces);
2. Settled dust on surfaces that maintenance personnel may be periodically exposed to (above suspended ceilings, exposed ducting, HVAC system external components);
3. Settled dust on surfaces internal to the HVAC system where exposure would not normally occur.

METHODOLOGY

The settled dust guidelines were calculated using methodologies consistent with published Health Canada risk assessment guidance (Health Canada, 2010, updated 2012) as well as guidance on indoor settled dust currently in development. Dust exposure estimates are based on the assumption that exposure is primarily a result of settled dust adhering to skin and being ingested during hand to mouth contact events. Exposure by lead passing directly through the skin is assumed to be negligible since the lead is bound to particles and has low ability to cross the skin even when disassociated from particles. Dust ingestion exposure is estimated using a mechanistic model developed by Wilson et al. (2013). This model estimates exposure on a mass per day (mg/d) basis, which is appropriate when dust concentrations are available on a mass basis (e.g. mg/kg). A recent follow-up study (Wilson et al., in press) expanded the model to estimate dust exposure on a surface area basis (m²/day) for use with dust concentrations measured on an area basis (e.g. µg/m² or µg/ft²). For lead dust, measurement on an area basis has been found to be a better predictor of blood lead concentrations for dust from hard surfaces, while measurement on a mass basis is a better predictor for soft surfaces (Yiin et al., 2000). The details of the calculations are provided in Appendix A.

Airborne dust was also considered using inhalation exposure calculations consistent with Health Canada (2010, updated 2012) guidance; equations are provided in Appendix A.

The toxicity of lead was evaluated using a tolerable daily intake (TDI) to represent the maximum acceptable oral exposure, and a tolerable concentration (TC) to represent the maximum acceptable inhalation exposure. The toxicity assessment for lead is summarized in Appendix B.

To allow for background exposure to lead, the target hazard quotient was set at 0.2 (i.e. 20% of the total allowable exposure could come from lead dust in the building, while the remaining 80% is allocated to background exposure).

Based on the building use, it was assumed that only adults would be exposed on a regular basis.

Model input parameters are summarized in Table 1 below.

Table 1 Model Inputs				
Parameter	Daily Contact Hard Surfaces	Daily Contact Soft Surfaces	Periodic Exposure Hard Surfaces	Periodic Exposure Soft Surfaces
Surface area of hand (m ²) ^a	0.0445	0.0445	0.0445	0.0445
Fraction of surface area that is partial front fingers ^a	0.05	0.05	0.05	0.05
Frequency of hand to mouth events (events/h) ^a	1	1	1	1
Saliva extraction factor ^a	0.5	0.5	0.5	0.5
Fraction transferred to hands ^a	0.4		0.4	
Tolerable daily intake (mg/kg-bw/d) ^b	0.0005	0.0005	0.0005	0.0005
Tolerable Concentration (mg/m ³) ^b	0.00015	0.00015	0.00015	0.00015
Body weight (kg) ^c	70.7	70.7	70.7	70.7
Relative absorption factor (gastrointestinal) ^c	1	1	1	1
Exposure time (h/d)	10 ^c	10 ^c	2 ^d	2 ^d
Days/week at site ^c	5	5	5	5
Weeks/year at site ^c	48	48	48	48

a – based on Wilson et al., in press

b – see Appendix B

c – default value for occupationally exposed adult (Health Canada 2010, updated 2012)

d - assumed

RESULTS

Calculated lead guidelines are summarized in Table 2 below.

Table 2 Lead Guidelines				
Parameter	Daily Contact Hard Surfaces	Daily Contact Soft Surfaces	Periodic Exposure Hard Surfaces	Periodic Exposure Soft Surfaces
Settled Dust (mg/m ²)	2.4	12	12	60
Settled Dust (µg/ft ²)	220	1100	1100	5600
Indoor Air (µg/m ³)	0.11			

CLOSURE

This report has been prepared for the Public Works and Government Services Canada on behalf of the Royal Canadian Mounted Police and [REDACTED], and pertains solely to lead dust measured in the RCMP Lab Building in Regina, Saskatchewan. The risk assessment was based on site data collected by others, and was limited to a study of those contaminants specifically addressed in these reports. Data presented in the reports completed by others are assumed to be accurate, but have not been independently verified by [REDACTED].

Human health risk assessments involve a number of uncertainties and limitations. As a consequence, the use of the results presented herein to develop site management strategies may either be overly protective or may not necessarily provide complete protection to human receptors or prevent damage of property in all circumstances. The results of the risk assessment as presented herein were determined in accordance with generally accepted protocols and the reported site conditions. Given the assumptions used herein, the risk assessment provides a conservative estimate of the risks involved. The services performed in the preparation of this report were conducted in a manner consistent with the level of skill and care ordinarily exercised by professional engineers and scientists practising under similar conditions.

Appendix A – Equations

The dust ingestion rate is calculated as per Wilson et al. (in press):

$$DIG = SA_{Hand} \times FSA_{Fingers} \times FQ \times SE \times ET \times FTSS \quad (\text{Equation 1})$$

Where:

DIG = dust ingestion rate (m²/d)

SA_{Hand} = surface area of one hand (m²)

FSA_{Fingers} = fraction of surface area of hands that are partial front fingers (dimensionless)

FQ = frequency of hand-to-mouth events (events/h)

SE = saliva extraction factor (dimensionless)

ET = exposure time in contact with indoor surfaces (h/d)

FTSS = fraction transferred from indoor surfaces to hands

The site-specific management objective (i.e. dust guideline) can then be calculated as:

$$SSMO = [(TDI \times THQ \times BW \times RAF_{GIT} \times DAF)] / (DIG_{Total} \times ET) \quad (\text{Equation 2})$$

Where:

SSMO = site-specific management objective (mg/m²)

TDI = tolerable daily intake (mg/kg-bw/d)

THQ = target hazard quotient (dimensionless)

BW = body weight (kg)

RAF_{GIT} = relative absorption factor for the gastrointestinal tract

DAF = dust allocation factor (dimensionless)

DIG_{Total} = dust ingestion rate (m²/d)

ET = exposure term (days/week x weeks/year)

Allowable indoor airborne dust concentrations are calculated as:

$$AIG = TC \times DAF / ET \quad (\text{Equation 3})$$

Where:

AIG = air inhalation guideline (mg/m³)

TC = tolerable concentration (mg/m³)

DAF = dust allocation factor

ET = exposure term (hours/day x days/week x weeks/year)

APPENDIX B – TOXICITY ASSESSMENT

LEAD

1.1 Inhalation Exposure Limits

1.1.1 Acute Inhalation

AGENCY	ESRD	OMOE	ATSDR	OEHHA	TCEQ	WHO
Exposure Limit Type	AAQO	24 hr standard 30 d standard	-	-	-	-
Exposure Limit Value ($\mu\text{g}/\text{m}^3$)	1.5	0.5 0.2	-	-	-	-
Critical Organ or Effect	-	Neurological	-	-	-	-
Species	-	Human Children	-	-	-	-
Study	-	Cal EPA 2001	-	-	-	-
Source	Alberta Government 2013	OMOE 2007	-	-	-	-

- not available

Bold – Exposure Limit selected for HHRA.

The OMOE (2007) has a 30-day standard of $0.2 \mu\text{g}/\text{m}^3$ for lead and lead compounds based on neurological effects in children. The 30-day standard was derived using a model developed by the California Environmental Protection Agency (Cal EPA) to determine the air lead concentration associated with a 5% probability of children in a reference population exceeding a blood lead level of concern of $10 \mu\text{g}/\text{dL}$. This LOC is considered to be out of date with respect to the state of science surrounding blood lead concentrations and potential adverse effects. The OMOE 24 hour value is derived from the 30-day standard.

The Alberta Government (2013) provides an AAQO of 1.5 µg/m³ for a 1-hour averaging period, which was adopted from the Texas Natural Resource Conservation Commission, but no specific basis is provided.

Due to the lack of defensible acute inhalation exposure limits, lead was not assessed on an acute basis.

1.1.2 Chronic Inhalation

AGENCY	ESRD	ATSDR	Health Canada	OEHHA	RIVM	TCEQ	US EPA	WHO
Exposure Limit Type	-	-	TC	RsC	-	-	NAAQS*	AQG
Exposure Limit Value (µg/m ³)	-	-	0.1	0.8	-	-	0.15	0.5
Critical Organ or Effect	-	-	-	Kidneys	-	-	-	-
Species	-	-	-	Rats	-	-	-	-
Study	-	-	Oral toxicity conversion	Azar 1973	-	-	-	-
Source	-	-	Health Canada (2015)	OEHHA 2009	-	-	US EPA 2008	WHO 2000

- not available

Bold – Exposure Limit selected for HHRA.

* NAAQS – National Ambient Air Quality Standard.

Lead and inorganic lead compounds are classified as probably carcinogenic to humans (Group 2A) by IARC, as reasonably anticipated to be human carcinogens (Group K) by NTP and as confirmed animal carcinogens with unknown relevance to humans (Group A3) by ACGIH (OSU, 2010). However, the data for establishing an RSD was considered weak (US EPA 2004), and potential neurological effects has been identified as a more sensitive end point than carcinogenicity (Health Canada, pers comm. 2015). For this reason, lead was treated as a non-carcinogen by inhalation for this risk assessment and an RsD was calculated.

The WHO (2000) inhalation guideline of 0.5 µg/m³ is based on the recommendation that the annual average air concentration of lead not exceed 0.5 µg/m³. This guideline was based on the assumption that the upper limit of non-anthropogenic blood lead levels is 30 µg/L. Recent

scientific evidence indicates that this assumption may not be protective against potential neurological effects (Health Canada 2013).

The OEHHA (2009) has derived an inhalation unit risk estimate of 1.2×10^{-5} ($\mu\text{g}/\text{m}^3$)⁻¹ (equivalent to an RsC of about $0.8 \mu\text{g}/\text{m}^3$). This cancer-based value was derived from an oral rat study, where male and female rats were administered lead acetate in the diet for a duration of 2 years (Azar *et al.*, 1973). Significant incidences of kidney tumours were observed in the animals. A linearized multistage model was used to fit the male tumour incidence data, and human equivalent doses were calculated. This value was not selected as it was not considered to be protective against potential neurological effects (Health Canada 2013).

The US EPA has not reported an RsC due to insufficient data (US EPA, 2004). An estimate of carcinogenic risk was not derived by the US EPA from the oral exposure studies by Azar *et al.* (1973).

Based on the *Clean Air Act*, which indicates a primary standard is to be set at the maximum permissible ambient air level which will protect the health of any [sensitive] group of the population, the US EPA revised the primary national ambient air quality standards (NAAQS) for lead to $0.15 \mu\text{g}/\text{m}^3$ (US EPA, 2008). This limit is set to be protective of air emission and multi-exposure pathways. The NAAQS was set to provide increased protection for children and other at-risk populations against an array of adverse effects in children, including neurocognitive and neurobehavioral effects. The averaging time for the primary NAAQS was revised to a rolling 3-month period with a maximum (not-to-be-exceeded) form, evaluated over a 3-year period. The NAAQS was derived from a blood lead level of $10 \mu\text{g}/\text{dL}$ ($100 \mu\text{g}/\text{L}$) in consideration of studies assessing potential adverse health effects in association with measured blood lead concentrations. The US EPA primary standard was intended to include an adequate margin of safety to address uncertainties associated with inconclusive scientific and technical information available at the time of standard setting. It was also intended to provide a reasonable degree of protection against hazards that research has not yet identified. As this limit is currently the lowest limit defined for inhalation of lead and data indicating blood lead concentrations are most sensitive to oral exposure rather than inhalation of air (OEHHA 2007), the US EPA NAAQS was selected for the current assessment.

A chronic inhalation TC of $0.1 \mu\text{g}/\text{m}^3$ was calculated from the oral exposure limit of $0.0005 \text{ mg}/\text{kg bw}/\text{day}$ recommended by Health Canada (pers. comm. 2015). Discussion of the basis for the oral exposure limit is provided below. The calculated TC is slightly lower than the US EPA NAAQS; however, it was not selected for the current assessment, as it is an estimation of an inhalation TRV from oral exposure data. The US EPA NAAQS is derived from inhalation exposure data.

The calculation of the chronic inhalation exposure for the toddler age group (generally the most sensitive life stages) is as follows:

$$TC = \frac{\text{oral exposure limit}}{IR} \times BW$$

TC = Tolerable concentration ($\mu\text{g}/\text{m}^3$)
 IR = Inhalation rate (m^3/d)
 BW = Body weight (kg)

$$TC = \frac{0.0005\text{mg}/\text{kg}/\text{d}}{8.3\text{ m}^3/\text{d}} \times 16.5\text{kg} \times \frac{1000\mu\text{g}}{\text{mg}} = 1\mu\text{g}/\text{m}^3$$

1.2 Oral Exposure Limits

1.2.1 Chronic Oral

Table B.22-3 Chronic Oral Exposure Limits for Lead						
AGENCY	ATSDR	Health Canada	OEHHA	RIVM	US EPA	WHO
Exposure Limit Type	-	BMDL₀₁	RsD	TDI	-	-
Exposure Limit Value (mg/kg bw/day)	-	0.0005	0.0012	0.0036	-	-
Critical Organ or Effect	-	Neurotoxicity	Kidney tumors		-	-
Species	-	Human children	Male rats		-	-
Study	-	-	-		-	-
Source	-	Health Canada, pers comm. 2015	OEHHA 2009	RIVM 2001	-	-

- not available

Bold – Exposure Limit selected for HHRA.

Lead and inorganic lead compounds are classified as probably carcinogenic to humans (Group 2A) by IARC, as reasonably anticipated to be human carcinogens (Group K) by NTP and as confirmed animal carcinogens with unknown relevance to humans (Group A3) by ACGIH (OSU, 2010). However, potential neurological effects has been identified as a more sensitive

end point than carcinogenicity (Health Canada, pers comm. 2015; US EPA, 2004, 2008). For this reason, lead was treated as a non-carcinogen by ingestion for this risk assessment.

Health Canada (2013) has concluded that their previous provisional tolerable weekly intake of 0.025 mg/kg bw/day for lead could no longer be considered protective of human health since there is no evidence of a threshold for critical lead-induced health effects. Health Canada recommends the use of the BMDL₀₁ of 0.0005 mg/kg bw/d derived by the European Food Safety Authority (EFSA 2010) from a blood lead level of 12 µg/L for developmental neurotoxicity in children (Health Canada, pers comm. 2015). This value was used for the assessment.

The RIVM (2001) provides an oral exposure limit of 0.0036 mg/kg bw/d based on the TDI established by the WHO (2003).

The WHO (2003) derived a TDI of 0.0036 mg/kg bw/d developed from the provisional tolerable weekly intake (PTWI) of 0.025 mg/kg bw/d. This PTWI has been recently withdrawn, based on scientific evidence that it is no longer considered protective (JECFA/FAO 2011; EFSA 2010). Because the dose–response analyses do not provide any indication of a threshold for the key effects of lead, JECFA concluded that it was not possible to establish a new PTWI that would be considered to be health protective.

The OEHHA (2009) derived a chronic oral slope factor of 8.5×10^{-3} (mg/kg/d)⁻¹ (equivalent to an RsD of 0.0012 mg/kg bw/d) based on the incidence of kidney tumours in male rats.

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Table 1 - Summary of Lead Results in Surface Dust
Pre-Abatement Lead Assessment - RCMP Lab Building - Regina, SK

Sample Number	Date Sampled (yyyy/mm/dd)	Location Description	Surface Sampled	Lead on Wipe (ug)	Surface Area Sampled (m ²)	Lead Concentration (ug/0.09 m ² = ug/ft ²)	Lead Abatement Guideline ⁽³⁾ (ug/0.09 m ² = ug/ft ²)
Room 102/105							
102-F-1	2015/09/14	W Central - carpet	Floor	3.2	0.09	3.2	220
102-C-1	2015/09/15	E Central - painted metal	Ceiling	<2.0	0.09	<2.0	220
102-W-1	2015/09/14	N wall - painted drywall	Wall	5.2	0.09	5.2	220
102-W-2	2015/09/14	W wall - glass	Wall	4.0	0.09	4.0	220
102-W-3	2015/09/14	S wall - painted drywall	Wall	2.4	0.09	2.4	220
102-W-4	2015/09/14	E wall - painted drywall	Wall	<2.0	0.09	<2.0	220
102-S-1	2015/09/14	Top - table, NE	Horizontal	5.0	0.09	5.0	220
102-WIN-1	2015/09/14	Window sill, N	Window Sill	2.1	0.0475	4.0	220
105-TC-1	2015/09/17	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, NW	Ceiling (above)	10.8	0.09	10.8	1,100
105-TD-1	2015/09/17	Ceiling chase - top of unpainted metal supply air duct - SV.120, NW	Duct (above ceiling)	137	0.09	137	1,100
102-ED-1	2015/09/14	Exterior painted metal supply air grating, SE	HVAC - Supply	<2.0	0.09	<2.0	220
102-ED-2	2015/09/14	Exterior unpainted metal exhaust air grating, SW	HVAC - Exhaust	10.8	0.09	10.8	220
102-ID-1	2015/09/14	Interior unpainted metal exhaust air duct above grating, SW	HVAC - Exhaust	6.5	0.08	7.3	1,100
Room 120							
120-F-1	2015/09/14	W - carpet	Floor	< 2.0	0.09	< 2.0	1,100
120-C-1	2015/09/15	W - lay-in 2x4' acoustical ceiling tile	Ceiling	4.5	0.09	4.5	220
120-W-1	2015/09/14	W wall - painted drywall	Wall	2.7	0.09	2.7	220
120-W-2	2015/09/14	S wall - painted drywall	Wall	<2.0	0.09	<2.0	220
120-S-1	2015/09/14	Top - workstation, S	Horizontal	2.5	0.09	2.5	220
120-TC-1	2015/09/17	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, SW	Ceiling (above)	10.6	0.09	10.6	1,100
120-TD-1	2015/09/17	Ceiling chase - top of unpainted metal supply air duct, SW	Duct (above ceiling)	87.3	0.09	87.3	1,100
120-ED-1	2015/09/16	Exterior painted metal exhaust air grating, SW	HVAC - Exhaust	9.4	0.09	9.4	220
120-ED-2	2015/09/16	Exterior of supply air vent - light fixture, SW	HVAC - Supply	10.6	0.04	23.9	220
120-ID-1	2015/09/16	Interior unpainted metal exhaust air duct above grating, SW	HVAC - Exhaust	30.1	0.05	54.2	1,100
120-ID-2	2015/09/16	Interior unpainted metal supply air diffuser at light fixture, SW	HVAC - Supply	16.1	0.04	36.2	1,100
120-CV-1	2015/09/16	Interior central vacuum wall connection, N	Central Vac	57.6	0.008	648	1,100
Room 141							
141-F-1	2015/09/14	W - linoleum	Floor	21.2	0.09	21.2	220
141-F-2	2015/09/14	E - linoleum	Floor	12.2	0.09	12.2	220
141-C-1	2015/09/15	W - lay-in 2x4' acoustical ceiling tile	Ceiling	11.7	0.09	11.7	220
141-C-2	2015/09/15	E - lay-in 2x4' acoustical ceiling tile	Ceiling	54.7	0.09	54.7	220
141-W-1	2015/09/14	N wall - painted drywall	Wall	4.1	0.09	4.1	220
141-W-2	2015/09/14	W wall - painted drywall	Wall	<2.0	0.09	<2.0	220
141-W-3	2015/09/14	S wall - painted drywall	Wall	6.8	0.09	6.8	220
141-W-4	2015/09/14	E wall - painted concrete block	Wall	3.6	0.09	3.6	220
141-S-1	2015/09/14	Top - table, W	Horizontal	8.4	0.09	8.4	220
141-S-2	2015/09/14	Top - shelving, E	Horizontal	32.4	0.09	32.4	220
141-TC-1	2015/09/14	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, SW	Ceiling (above)	12.4	0.09	12.4	1,100
141-TD-1	2015/09/14	Ceiling chase - top of unpainted metal supply air duct/light fixture, E	Duct (above ceiling)	89.0	0.09	89.0	1,100
141-ED-1	2015/09/14	Exterior painted metal exhaust air grating, W	HVAC - Exhaust	11.8	0.09	11.8	220
141-ED-2	2015/09/14	Exterior of supply air vent - light fixture, SE	HVAC - Supply	7.0	0.04	15.8	220
141-ID-1	2015/09/14	Interior unpainted metal exhaust air duct above grating, W	HVAC - Exhaust	36.9	0.08	41.5	1,100
141-ID-2	2015/09/14	Interior unpainted metal supply air diffuser at light fixture, SE	HVAC - Supply	11.8	0.04	26.6	1,100
Room 144							
144-F-1	2015/09/14	N - carpet	Floor	3.3	0.09	3.3	1,100
144-F-2	2015/09/14	Central - carpet	Floor	4.4	0.09	4.4	1,100
144-F-3	2015/09/14	S - carpet	Floor	4.7	0.09	4.7	1,100
144-C-1	2015/09/16	N - painted metal	Ceiling	78.0	0.09	78.0	220
144-C-2	2015/09/16	Central - painted metal	Ceiling	84.0	0.09	84.0	220
144-C-3	2015/09/16	S - painted metal	Ceiling	68.3	0.09	68.3	220
144-W-1	2015/09/14	N end - E wall - glass	Wall	<2.0	0.09	<2.0	220
144-W-2	2015/09/14	N end - W wall - painted drywall, outside Room 173	Wall	2.9	0.09	2.9	220
144-W-3	2015/09/14	Central - E wall - painted drywall, across from Room 163	Wall	3.4	0.09	3.4	220
144-W-4	2015/09/14	Central - W wall - painted drywall, outside Room 153	Wall	<2.0	0.09	<2.0	220
144-W-5	2015/09/14	S end - E wall - painted drywall across from Room 148	Wall	<2.0	0.09	<2.0	220
144-W-6	2015/09/14	S end - W wall - near entrance	Wall	<2.0	0.09	<2.0	220
144-ED-1	2015/09/16	Exterior of supply air vent - across from Room 162	HVAC - Supply	56.4	0.08	63.5	220
144-ED-2	2015/09/16	Exterior of exhaust air vent - across from Room 148	HVAC - Exhaust	15.8	0.09	15.8	220
144-ID-1	2015/09/16	Interior of supply air vent - across from Room 162	HVAC - Supply	144	0.09	144	1,100
144-ID-2	2015/09/16	Interior of exhaust air vent - across from Room 148	HVAC - Exhaust	134	0.09	134	1,100
Room 146							
146-F-1	2015/09/16	N - concrete	Floor	33.9	0.09	33.9	220
146-F-2	2015/09/16	SW - concrete	Floor	27.4	0.09	27.4	220
146-F-3	2015/09/16	SE - concrete	Floor	184	0.09	184	220
146-C-1	2015/09/16	N - painted concrete	Ceiling	2.0	0.09	2.0	220
146-C-2	2015/09/16	SW - painted concrete	Ceiling	< 2.0	0.09	< 2.0	220
146-C-3	2015/09/16	SE - painted concrete	Ceiling	< 2.0	0.09	< 2.0	220
146-W-1	2015/09/16	N wall - painted cinder block	Wall	25.3	0.09	25.3	220
146-W-2	2015/09/16	W wall - painted cinder block	Wall	16.2	0.09	16.2	220
146-W-3	2015/09/16	S overhead door - painted metal	Wall	44.7	0.09	44.7	220
146-W-4	2015/09/16	SE wall - painted cinder block	Wall	38.5	0.09	38.5	220
146-W-5	2015/09/16	E wall - painted cinder block	Wall	42.9	0.09	42.9	220
146-S-1	2015/09/16	Top - table, N	Horizontal	268	0.09	268	220
146-S-2	2015/09/16	Top - table, pressure wash station, SW	Horizontal	902	0.09	902	220
146-S-3	2015/09/16	Top - shelving, SE end	Horizontal	12,700	0.09	12,700	220
146-S-4	2015/09/16	Top - grey cabinet, E wall	Horizontal	51.3	0.09	51.3	220
146-S-5	2015/09/16	Top - wood cabinet, NE end	Horizontal	1,830	0.09	1,830	220
146-TD-1	2015/09/16	Top of painted metal exhaust air duct, NW	Duct	1,690	0.09	1,690	1,100
146-TD-2	2015/09/16	Top of painted metal exhaust air duct, SW	Duct	3,590	0.09	3,590	1,100
146-ED-1	2015/09/16	Exterior of painted metal supply air louvre, S	HVAC - Supply	1,130	0.08	1,271	220
146-ED-2	2015/09/16	Exterior of painted metal exhaust air louvre, SW	HVAC - Exhaust	4,090	0.09	4,090	220
146-ID-1	2015/09/16	Interior unpainted metal supply air duct, S	HVAC - Supply	47.6	0.08	53.6	1,100
146-ID-2	2015/09/16	Interior unpainted metal exhaust air duct, SW	HVAC - Exhaust	7,060	0.09	7,060	1,100
146-ID-3	2015/09/16	Interior unpainted metal exhaust air duct at fire damper FD-103, NW	HVAC - Exhaust	523	0.09	523	1,100
ST-F-1	2015/08/04	Stairwell entry to Room 151, concrete	Floor	11,700	0.09	11,700	220
ST-W-1	2015/08/04	Stairwell entry to Room 151, painted concrete block	Wall - 1.0 m	287	0.09	287	220
ST-W-2	2015/08/05	Stairwell entry to Room 151, painted concrete block	Wall - 3.5 m	100	0.09	100	220
Room 147							
147-F-1	2015/09/16	Central - linoleum sheet	Floor	1,220	0.09	1,220	220
147-C-1	2015/09/16	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	3.7	0.09	3.7	220
147-W-1	2015/09/16	N wall - painted concrete block	Wall	12.8	0.09	12.8	220
147-W-2	2015/09/16	W wall - painted concrete block	Wall	4.5	0.09	4.5	220
147-W-3	2015/09/16	S wall - painted concrete block	Wall	8.4	0.09	8.4	220
147-W-4	2015/09/16	E wall - painted concrete block	Wall	7.1	0.09	7.1	220

Table 1 - Summary of Lead Results in Surface Dust
Pre-Abatement Lead Assessment - RCMP Lab Building - Regina, SK

Sample Number	Date Sampled (yyyy/mm/dd)	Location Description	Surface Sampled	Lead on Wipe (ug)	Surface Area Sampled (m ²)	Lead Concentration (ug/0.09 m ² = ug/ft ²)	Lead Abatement Guideline ⁽³⁾ (ug/0.09 m ² = ug/ft ²)
147-S-1	2015/09/16	Top - work bench, E wall	Horizontal	61.4	0.09	61.4	220
147-TC-1	2015/09/16	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, N	Ceiling (above)	71.3	0.09	71.3	1,100
147-TD-1	2015/09/16	Ceiling chase - top of supply air unpainted metal duct, N	Duct (above ceiling)	198	0.09	198	1,100
147-ED-1	2015/09/16	Exterior painted metal supply air grating, Central	HVAC - Supply	3.1	0.09	3.1	220
147-ED-2	2015/09/16	Exterior painted metal exhaust air grating, N near floor	HVAC - Exhaust	1,010	0.09	1,010	220
147-ID-1	2015/09/16	Interior flexible riser above supply air diffuser, Central	HVAC - Supply	14.5	0.08	16.3	1,100
147-ID-2	2015/09/16	Interior unpainted metal exhaust air duct, N near floor	HVAC - Exhaust	323	0.09	323	1,100
147-ID-3	2015/09/16	Interior unpainted metal exhaust air duct, SW near floor	HVAC - Exhaust	340	0.09	340	1,100
147-ID-4	2015/09/16	Interior unpainted metal supply air duct, SV1.36, pre-reheat coils, NE	HVAC - Supply	25.0	0.05	45.0	1,100
147-EF-1	2015/09/16	W Fume Hood, painted metal base	Fume - Exhaust	142	0.09	142	220
147-JF-1	2015/09/16	Interior unpainted metal duct above fume hood, W wall	Fume - Exhaust	57.4	0.09	57.4	1,100
Room 148							
148-F-1	2015/09/16	Central - linoleum sheet	Floor	30.2	0.09	30.2	220
148-C-1	2015/09/16	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	< 2.0	0.09	< 2.0	220
148-W-1	2015/09/16	W wall - painted concrete block	Wall	4.7	0.09	4.7	220
148-W-2	2015/09/16	S wall - painted concrete block	Wall	7.2	0.09	7.2	220
148-W-3	2015/09/16	E wall - painted concrete block	Wall	< 2.0	0.09	< 2.0	220
148-S-1	2015/09/16	Top - work bench, W wall	Horizontal	3.4	0.09	3.4	220
148-TC-1	2015/09/16	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, Central	Ceiling (above)	203	0.09	203	1,100
148-TD-1	2015/09/16	Ceiling chase - top of supply air unpainted metal duct, SE	Duct (above ceiling)	784	0.09	784	1,100
148-ED-1	2015/09/16	Exterior painted metal on supply air diffuser, Central	HVAC - Supply	< 2.0	0.09	< 2.0	220
148-ED-2	2015/09/16	Exterior of supply air vent - light fixture, SE	HVAC - Supply	14.6	0.09	14.6	220
148-ID-1	2015/09/16	Interior flexible plastic supply air duct above air diffuser, Central	HVAC - Supply	19.4	0.09	19.4	1,100
148-ID-2	2015/09/16	Interior unpainted metal supply air duct - light fixture, SE	HVAC - Supply	23.1	0.09	23.1	1,100
148-ID-3	2015/09/16	Interior unpainted metal supply air duct - SV1.37, pre-reheat coils, SE	HVAC - Supply	26.5	0.05	47.7	1,100
148-EF-1	2015/09/16	Base of fume hood - painted metal, N wall	Fume - Exhaust	20.4	0.09	20.4	220
148-JF-1	2015/09/16	Interior unpainted exhaust air duct above fume hood, N wall	Fume - Exhaust	< 2.0	0.09	< 2.0	1,100
Room 149							
149-F-1	2015/09/14	N Central - OSB wood	Floor	430	0.09	430	220
149-C-1	2015/09/15	N Central - painted concrete	Ceiling	6.7	0.09	6.7	220
149-W-1	2015/09/14	N wall - painted concrete block	Wall	4.6	0.09	4.6	220
149-W-2	2015/09/14	S wall - painted concrete block	Wall	5.7	0.09	5.7	220
149-W-3	2015/09/14	E wall - painted concrete block	Wall	4.1	0.09	4.1	220
149-S-1	2015/09/14	Top - shelf, painted metal, Central	Horizontal	12.3	0.09	12.3	220
149-TD-1	2015/09/15	Top of exhaust air painted metal duct, N central	Duct	65.7	0.09	65.7	220
149-ED-1	2015/09/15	Exterior of painted metal exhaust air grating - vertical louvers, N	HVAC - Exhaust	669	0.068	885	220
149-ED-2	2015/09/15	Exterior of painted metal supply air diffuser - horizontal, S	HVAC - Supply	123	0.09	123	220
149-ID-1	2015/09/15	Interior unpainted metal exhaust air duct - horizontal, N	HVAC - Exhaust	202	0.08	227	1,100
149-ID-2	2015/09/15	Interior unpainted supply air duct above diffuser - vertical, S	HVAC - Supply	41.4	0.09	41.4	1,100
149-ID-3	2015/09/15	Interior unpainted metal supply air duct -SV1.38, pre-reheat coils, Central	HVAC - Supply	35.8	0.05	64.4	1,100
Room 150							
150-F-1	2015/08/05	W central - unpainted concrete	Floor	699	0.09	699	220
150-C-1	2015/08/05	E central - painted concrete	Ceiling	15.0	0.09	15.0	220
150-W-1	2015/08/05	N wall - painted concrete block	Wall	93.0	0.09	93.0	220
150-W-2	2015/08/05	W wall - painted concrete block	Wall	242	0.09	242	220
150-W-3	2015/08/05	S wall - painted concrete block	Wall	21.9	0.09	21.9	220
150-W-4	2015/08/05	E wall - painted concrete block	Wall	29.0	0.09	29.0	220
150-S-1	2015/08/05	Top - workbench, laminate, NW	Horizontal	111	0.09	111	220
150-S-2	2015/08/05	Top - cupboards, laminate, SW	Horizontal	358	0.09	358	220
150-HVAC-1	2015/08/05	Exterior of exhaust air - metal louvers, N	HVAC - Exhaust	868	0.09	868	220
150-HVAC-2	2015/08/05	Exterior of supply air - painted metal diffusers, N	HVAC - Supply	247	0.09	247	220
150-TD-1	2015/09/15	Top of painted exhaust air duct, NE	Duct	246	0.09	246	220
150-ID-1	2015/09/15	Interior unpainted exhaust air duct, N	HVAC - Exhaust	167	0.09	167	1,100
150-ID-2	2015/09/15	Interior unpainted supply air duct above diffuser, S central	HVAC - Supply	24.6	0.09	24.6	1,100
150-ID-3	2015/09/15	Interior unpainted exhaust air duct at fire damper FD-102, SW	HVAC - Exhaust	381	0.09	381	1,100
150-ID-4	2015/09/15	Interior unpainted metal supply air duct - SV1.39, pre-reheat coils, NW	HVAC - Supply	31.5	0.05	56.7	1,100
150-ID-5	2015/09/15	Interior bench exhaust pipe, S central	HVAC - Exhaust	173	0.047	331	1,100
150-CV-1	2015/09/16	Interior central vacuum wall connection, E	Central Vac	367	0.008	4,129	1,100
Room 151							
151-F-1	2015/08/05	N end, landing - linoleum	Floor	8,410	0.09	8,410	220
151-F-2	2015/08/05	N end - linoleum tile	Floor	3,300	0.09	3,300	220
151-F-3	2015/08/05	Central - linoleum tile	Floor	8,070	0.09	8,070	220
151-F-4	2015/08/05	Central - linoleum tile	Floor	10,400	0.09	10,400	220
151-F-5	2015/08/05	Central - linoleum tile	Floor	9,210	0.09	9,210	220
151-F-6	2015/08/05	S end - linoleum tile	Floor	14,200	0.09	14,200	220
151-F-7	2015/08/05	S end - linoleum tile	Floor	58,200	0.09	58,200	220
151-C-1	2015/08/05	N end - painted drywall	Ceiling	53.5	0.09	53.5	220
151-C-2	2015/08/05	N end - fabric panel	Ceiling	91.7	0.09	91.7	220
151-C-3	2015/08/05	Central - fabric panel	Ceiling	85.3	0.09	85.3	220
151-C-4	2015/08/05	Central - fabric panel	Ceiling	52.4	0.09	52.4	220
151-C-5	2015/08/05	Central - fabric panel	Ceiling	52.8	0.09	52.8	220
151-C-6	2015/08/05	S end - fabric panel	Ceiling	31.3	0.09	31.3	220
151-C-7	2015/08/05	S end - fabric panel	Ceiling	12,700	0.09	12,700	220
151-W-1	2015/08/05	N end - E wall - fabric panel	Wall	348	0.09	348	220
151-W-2	2015/08/05	N end - E wall - fabric panel	Wall	273	0.09	273	220
151-W-3	2015/08/05	Central - E wall - fabric panel	Wall	231	0.09	231	220
151-W-4	2015/08/05	Central - E wall - fabric panel	Wall	131	0.09	131	220
151-W-5	2015/08/05	Central - E wall - fabric panel	Wall	202	0.09	202	220
151-W-6	2015/08/05	S end - E wall - fabric panel	Wall	179	0.09	179	220
151-W-7	2015/08/05	S end - E wall - painted wood panel	Wall	1,230	0.09	1,230	220
151-W-8	2015/08/05	Backstop - painted wood panel, E	Wall	294	0.09	294	220
151-W-9	2015/08/05	N end - W wall - fabric panel	Wall	670	0.09	670	220
151-W-10	2015/08/05	N end - W wall - drywall	Wall	207	0.09	207	220
151-W-11	2015/08/05	Central - W wall - drywall	Wall	236	0.09	236	220
151-W-12	2015/08/05	Central W wall - fabric panel	Wall	127	0.09	127	220
151-W-13	2015/08/05	Central - W wall - fabric panel	Wall	127	0.09	127	220
151-W-14	2015/08/05	S end - W wall - fabric panel	Wall	150	0.09	150	220
151-W-15	2015/08/05	S end - W wall - painted wood panel	Wall	1,770	0.09	1,770	220
151-W-16	2015/08/05	Backstop - painted wood panel, W	Wall	509	0.09	509	220
151-W-17	2015/09/15	NW Corner - drywall surface behind acoustic panel	Wall	80.5	0.09	80.5	220
151-S-1	2015/08/05	Top - bench, laminate, NE	Horizontal	18,400	0.09	18,400	220
151-S-2	2015/08/05	Top - water chamber on firing bench, NE	Horizontal	19,900	0.09	19,900	220
151-S-3	2015/08/05	Top - ballistic trap, metal surface, S	Horizontal	60,800	0.09	60,800	220
151-HVAC-1	2015/08/05	Exterior of exhaust air - unpainted metal, SE	HVAC - Exhaust	56,800	0.09	56,800	220
151-HVAC-2	2015/08/05	Exterior of exhaust air - unpainted metal, SW	HVAC - Exhaust	55,800	0.09	55,800	220

Table 1 - Summary of Lead Results in Surface Dust
Pre-Abatement Lead Assessment - RCMP Lab Building - Regina, SK

Sample Number	Date Sampled (yyyy/mm/dd)	Location Description	Surface Sampled	Lead on Wipe (ug)	Surface Area Sampled (m ²)	Lead Concentration (ug/0.09 m ² = ug/ft ²)	Lead Abatement Guideline ⁽³⁾ (ug/0.09 m ² = ug/ft ²)
151-HVAC-3	2015/08/05	Exterior of supply air - painted metal grating, NE	HVAC - Supply	1,210	0.045	2,420	220
151-HVAC-4	2015/08/05	Exterior of supply air - painted metal grating, NW	HVAC - Supply	594	0.045	1,188	220
151-PIT-1	2015/08/05	Sump Pit - wall, concrete, S	Sump Pit	1,350	0.09	1,350	1,100
151-ID-1	2015/09/15	Concrete Block at supply air duct, NW	HVAC-Supply	74.8	0.09	74.8	220
151-ID-2	2015/09/15	Interior unpainted metal supply air duct, NW	HVAC-Supply	9,550	0.09	9,550	1,100
151-ID-3	2015/09/15	Interior concrete exhaust air duct, SE	HVAC-Exhaust	44,100	0.09	44,100	1,100
Room 152							
152-F-1	2015/08/04	W central - unpainted concrete	Floor	376	0.09	376	220
152-C-1	2015/08/04	E central - painted concrete	Ceiling	< 2.0	0.09	< 2.0	220
152-W-1	2015/08/04	N wall - painted concrete block	Wall	103	0.09	103	220
152-W-2	2015/08/04	W wall - painted concrete block	Wall	104	0.09	104	220
152-W-3	2015/08/04	S wall - painted concrete block	Wall	21.8	0.09	21.8	220
152-W-4	2015/08/04	E wall - painted concrete block	Wall	45.8	0.09	45.8	220
152-S-1	2015/08/04	Top - workbench, linoleum, W	Horizontal	648	0.09	648	220
152-HVAC-1	2015/08/04	Exterior of supply air - painted metal diffusers, NE	HVAC - Supply	192	0.09	192	220
152-HVAC-2	2015/08/04	Exterior of exhaust air - metal louvres, NW	HVAC - Exhaust	1,210	0.09	1,210	220
152-TD-1	2015/09/15	Top of painted metal exhaust air duct, N	Duct	248	0.09	248	220
152-ID-1	2015/09/15	Interior unpainted metal exhaust air duct, N	HVAC - Exhaust	1,770	0.09	1,770	1,100
152-ID-2	2015/09/15	Interior unpainted metal supply air duct above diffuser, NE	HVAC - Supply	24.6	0.09	24.6	1,100
152-ID-3	2015/09/15	Interior unpainted metal supply air duct above diffuser, SE	HVAC - Supply	41.3	0.09	41.3	1,100
152-ID-4	2015/09/15	Interior unpainted metal supply air duct - SV1.40, pre-reheat coils, W	HVAC - Supply	19.7	0.05	35.5	1,100
152-ID-5	2015/09/16	Interior unpainted metal supply air duct at fire damper FD-99, N	HVAC - Supply	39.1	0.09	39.1	1,100
Room 153							
153-F-1	2015/09/14	W central - concrete	Floor	654	0.09	654	220
153-C-1	2015/09/15	W central - painted concrete	Ceiling	3.6	0.09	3.6	220
153-W-1	2015/09/14	N wall - painted concrete block	Wall	6.0	0.09	6.0	220
153-W-2	2015/09/14	S wall - painted concrete block	Wall	48.1	0.09	48.1	220
153-W-3	2015/09/14	E wall - painted concrete block	Wall	7.5	0.09	7.5	220
153-S-1	2015/09/14	Top - counter, NE	Horizontal	194	0.09	194	220
153-TD-1	2015/09/15	Top of painted metal supply air diffuser box, SE	Duct	229	0.09	229	220
153-ED-1	2015/09/15	Exterior of painted metal supply air diffuser, Central	HVAC - Supply	18.2	0.09	18.2	220
153-ED-2	2015/09/15	Exterior of painted metal supply air diffuser, S	HVAC - Supply	33.2	0.09	33.2	220
153-ID-1	2015/09/15	Interior unpainted metal supply air duct at fire damper FD-101, NE	HVAC - Supply	37.6	0.09	37.6	1,100
153-ID-2	2015/09/15	Interior unpainted metal supply air duct at fire damper FD-100, NE	HVAC - Supply	14.5	0.09	14.5	1,100
153-ID-3	2015/09/15	Interior unpainted metal exhaust air duct - bench exhaust, SW	HVAC - Exhaust	36.7	0.05	66.1	1,100
153-EF-1	2015/09/14	Base of fume hood - painted metal, E wall	Fume - Exhaust	1,070	0.09	1,070	220
153-IF-1	2015/09/14	Interior unpainted exhaust air duct above fume hood, E wall	Fume - Exhaust	873	0.05	1,571	1,100
Room 154							
154-F-1	2015/09/14	Central - carpet	Floor	65.4	0.09	65.4	1,100
154-C-1	2015/09/15	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	4.7	0.09	4.7	220
154-W-1	2015/09/14	S wall - painted drywall	Wall	3.1	0.09	3.1	220
154-W-2	2015/09/14	E wall - painted drywall	Wall	2.9	0.09	2.9	220
154-S-1	2015/09/14	Top - desk, SE	Horizontal	73.3	0.09	73.3	220
154-TC-1	2015/09/15	Ceiling chase - top of lay-in, 2x4' acoustical ceiling tile, N central	Ceiling (above)	25.0	0.09	25.0	1,100
154-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, NE	HVAC - Exhaust	16.0	0.09	16.0	220
154-ED-2	2015/09/15	Exterior of painted metal supply air diffuser, SE	HVAC - Supply	35.5	0.09	35.5	220
Room 155							
155-F-1	2015/09/14	Central - carpet	Floor	52.0	0.09	52.0	1,100
155-C-1	2015/09/15	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	4.5	0.09	4.5	220
155-W-1	2015/09/14	N wall - painted drywall	Wall	2.3	0.09	2.3	220
155-W-2	2015/09/14	E wall - painted drywall	Wall	5.4	0.09	5.4	220
155-S-1	2015/09/14	Top - desk, S	Horizontal	30.7	0.09	30.7	220
155-TD-1	2015/09/15	Ceiling chase - top of unpainted metal exhaust air duct, E central	Duct (above ceiling)	355	0.09	355	1,100
155-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, NE	HVAC - Exhaust	27.0	0.09	27.0	220
155-ED-2	2015/09/15	Exterior of painted metal supply air diffuser, Central	HVAC - Supply	39.2	0.09	39.2	220
155-ID-1	2015/09/15	Interior unpainted metal exhaust air duct above intake, NE	HVAC - Exhaust	60.8	0.09	60.8	1,100
Room 156							
156-F-1	2015/09/14	Central - carpet	Floor	22.9	0.09	22.9	1,100
156-C-1	2015/09/15	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	3.2	0.09	3.2	220
156-W-1	2015/09/14	N wall - painted drywall	Wall	<2.0	0.09	<2.0	220
156-W-2	2015/09/14	E wall - painted drywall	Wall	3.4	0.09	3.4	220
156-S-1	2015/09/14	Top - desk, NE	Horizontal	27.1	0.09	27.1	220
156-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, Central	Ceiling (above)	24.9	0.09	24.9	1,100
156-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, SE	HVAC - Exhaust	21.4	0.09	21.4	220
156-ED-2	2015/09/15	Exterior of painted metal supply air diffuser, N central	HVAC - Supply	32.7	0.09	32.7	220
156-ID-1	2015/09/15	Interior unpainted metal exhaust air duct above intake, SE	HVAC - Exhaust	27.1	0.09	27.1	1,100
Room 157							
157-F-1	2015/08/04	N - low pile carpet	Floor	163	0.09	163	1,100
157-C-1	2015/08/04	N - lay-in 2x4' acoustical ceiling tile	Ceiling	< 2.0	0.09	< 2.0	220
157-W-1	2015/08/04	N wall - painted drywall	Wall	7.5	0.09	7.5	220
157-W-2	2015/08/04	W wall - painted drywall	Wall	17.0	0.09	17.0	220
157-W-3	2015/08/04	S wall - painted drywall	Wall	2.0	0.09	2.0	220
157-W-4	2015/08/04	E wall - painted drywall	Wall	2.4	0.09	2.4	220
157-S-1	2015/08/04	Top - painted metal cabinet, SW	Horizontal	87.8	0.09	87.8	220
157-HVAC-1	2015/08/04	Exterior of exhaust air - painted metal grating, NW	HVAC - Exhaust	999	0.09	999	220
157-HVAC-2	2015/08/04	Ceiling chase - top of duct above fixture, NW	Duct (above ceiling)	192	0.09	192	1,100
157-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, S	Ceiling (above)	65.1	0.09	65.1	1,100
157-TD-1	2015/09/15	Ceiling chase - top of exhaust air duct, N	Duct (above ceiling)	478	0.09	478	1,100
157-ID-1	2015/09/15	Interior of exhaust air duct, NW	HVAC - Exhaust	623	0.09	623	1,100
157-ID-2	2015/09/15	Interior supply air duct, light fixture, N	HVAC - Supply	10.7	0.05	19.3	1,100
157-ID-3	2015/09/15	Interior unpainted metal supply air duct - SV1.42, pre-reheat coils, Central	HVAC - Supply	58.1	0.05	105	1,100
157-ID-4	2015/09/15	Interior unpainted metal supply air duct - SV1.42, post-reheat coils, Central	HVAC - Supply	43.0	0.05	77.4	1,100
Room 158							
158-F-1	2015/09/14	NW - linoleum sheet	Floor	234	0.09	234	220
158-C-1	2015/09/15	NW - lay-in 2x4' acoustical ceiling tile	Ceiling	< 2.0	0.09	< 2.0	220
158-W-1	2015/09/14	N wall - painted drywall	Wall	7.8	0.09	7.8	220
158-W-2	2015/09/14	W wall - painted drywall	Wall	3.9	0.09	3.9	220
158-W-3	2015/09/14	S wall - painted drywall	Wall	8.4	0.09	8.4	220
158-W-4	2015/09/14	E wall - painted drywall	Wall	6.3	0.09	6.3	220
158-S-1	2015/09/14	Top - counter, NE	Horizontal	9.7	0.09	9.7	220
158-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, NW	Ceiling (above)	59.4	0.09	59.4	1,100
158-TD-1	2015/09/15	Ceiling chase - top of unpainted metal supply air duct, NW	Duct (above ceiling)	154	0.09	154	1,100
158-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, NW	HVAC - Exhaust	2,780	0.09	2,780	220
158-ED-2	2015/09/15	Exterior of painted metal supply air diffuser, S central	HVAC - Supply	16.5	0.09	16.5	220
158-ID-1	2015/09/15	Interior unpainted metal supply air duct - SV1.43 pre-reheat coils, N	HVAC - Supply	63.2	0.05	114	1,100
158-ID-2	2015/09/15	Interior unpainted metal supply air duct - SV1.43 post-reheat coils, N	HVAC - Supply	44.1	0.05	79.4	1,100

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Sample Number	Date Sampled (yyyy/mm/dd)	Location Description	Surface Sampled	Lead on Wipe (ug)	Surface Area Sampled (m ²)	Lead Concentration (ug/0.09 m ² = ug/ft ²)	Lead Abatement Guideline ⁽³⁾ (ug/0.09 m ² = ug/ft ²)
158-ID-3	2015/09/15	Interior unpainted metal exhaust air duct above autopsy table, Central	HVAC - Exhaust	248	0.09	248	1,100
158-EF-1	2015/09/14	Exterior base of fume hood - painted metal, E wall	Fume - Exhaust	17.4	0.09	17.4	220
158-IF-1	2015/09/14	Interior unpainted exhaust air duct above fume hood, E wall	Fume - Exhaust	879	0.05	1,582	1,100
Room 159							
159-F-1	2015/08/04	W - linoleum sheet	Floor	209	0.09	209	220
159-F-2	2015/08/04	E - linoleum sheet	Floor	275	0.09	275	220
159-C-1	2015/08/04	W - lay-in 2x4' acoustical ceiling tile	Ceiling	3.6	0.09	3.6	220
159-C-2	2015/08/04	E - lay-in 2x4' acoustical ceiling tile	Ceiling	2.4	0.09	2.4	220
159-W-1	2015/08/04	N wall - painted concrete block	Wall	2.7	0.09	2.7	220
159-W-2	2015/08/04	W wall - painted concrete block	Wall	5.7	0.09	5.7	220
159-W-3	2015/08/04	S wall - painted concrete block	Wall	4.0	0.09	4.0	220
159-W-4	2015/08/04	E wall - painted concrete block	Wall	78.2	0.09	78.2	220
159-S-1	2015/08/04	Top - painted metal cabinet, W	Horizontal	35.9	0.09	35.9	220
159-S-2	2015/08/04	Top - painted wood cupboards, SE	Horizontal	251	0.09	251	220
159-HVAC-1	2015/08/04	Exterior of exhaust air - painted metal grating, E	HVAC - Exhaust	125	0.045	250	220
159-HVAC-2	2015/08/05	Exterior of supply air - painted metal diffusers, W	HVAC - Supply	403	0.09	403	220
159-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, Central	Ceiling (above)	95.0	0.09	95.0	1,100
Room 160							
160-F-1	2015/08/05	Central - linoleum sheet	Floor	809	0.09	809	220
160-C-1	2015/08/05	E - lay-in 2x4' acoustical ceiling tile	Ceiling	6.0	0.09	6.0	220
160-W-1	2015/08/05	N wall - painted drywall	Wall	49.5	0.09	49.5	220
160-W-2	2015/08/05	W wall - painted drywall	Wall	33.0	0.09	33.0	220
160-W-3	2015/08/05	S wall - painted cinder block	Wall	66.1	0.09	66.1	220
Room 161							
161-F-1	2015/08/05	NE - linoleum sheet	Floor	96.9	0.09	96.9	220
161-F-2	2015/08/05	NW - linoleum sheet	Floor	307	0.09	307	220
161-F-3	2015/08/05	SW - linoleum sheet	Floor	334	0.09	334	220
161-F-4	2015/08/05	SE - linoleum sheet	Floor	105	0.09	105	220
161-F-5	2015/08/05	Central - linoleum sheet	Floor	85.9	0.09	85.9	220
161-C-1	2015/08/05	NE - lay-in 2x4' acoustical ceiling tile	Ceiling	63.2	0.09	63.2	220
161-C-2	2015/08/05	NW - lay-in 2x4' acoustical ceiling tile	Ceiling	15.0	0.09	15.0	220
161-C-3	2015/08/05	SW - lay-in 2x4' acoustical ceiling tile	Ceiling	3.5	0.09	3.5	220
161-C-4	2015/08/05	SE - lay-in 2x4' acoustical ceiling tile	Ceiling	4.5	0.09	4.5	220
161-C-5	2015/08/05	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	15.0	0.09	15.0	220
161-C-6	2015/08/05	Ceiling chase - top of fluorescent fixture, S central	Ceiling	403	0.09	403	1,100
161-W-1	2015/08/05	N wall - painted drywall	Wall	8.2	0.09	8.2	220
161-W-2	2015/08/05	W wall - painted drywall	Wall	10.3	0.09	10.3	220
161-W-3	2015/08/05	SE wall - painted drywall	Wall	9.6	0.09	9.6	220
161-W-4	2015/08/05	E wall - painted metal cabinet	Wall	4.0	0.09	4.0	220
161-S-1	2015/08/05	Top - table, laminate, Central	Horizontal	8.3	0.09	8.3	220
161-S-2	2015/08/05	Top - table, laminate, Central	Horizontal	29.8	0.09	29.8	220
161-S-3	2015/08/05	Top - workbench, laminate, NW	Horizontal	25.4	0.09	25.4	220
161-S-4	2015/08/05	Top - workbench, laminate, W	Horizontal	20.0	0.09	20.0	220
161-S-5	2015/08/05	Top - workbench, laminate, SW	Horizontal	86.1	0.09	86.1	220
161-WIN-1	2015/08/05	Window - sill, NW	Window Sill	43.4	0.115	34.0	220
161-WIN-2	2015/08/05	Window - sill, SW	Window Sill	41.7	0.115	32.6	220
161-HVAC-1	2015/08/05	Exterior of exhaust - painted metal grating, NE	HVAC - Exhaust	458	0.045	916	220
161-HVAC-2	2015/08/05	Exterior of exhaust - painted metal grating, NW	HVAC - Exhaust	1,410	0.045	2,820	220
161-TC-1	2015/09/15	Ceiling chase - top of ceiling, tile, SE	Ceiling (above)	56.8	0.09	56.8	1,100
161-TD-1	2015/09/15	Ceiling chase - top of exhaust air duct, NW	Duct (above ceiling)	358	0.09	358	1,100
161-ID-1	2015/09/15	Interior of exhaust duct, NW	HVAC - Exhaust	823	0.09	823	1,100
161-ID-2	2015/09/15	Interior supply air duct - light fixture, NW	HVAC - Supply	18.6	0.05	33.5	1,100
161-ID-3	2015/09/15	Interior unpainted metal supply air duct - SV1.44, pre-reheat coils, S central	HVAC - Supply	59.2	0.05	107	1,100
161-ID-4	2015/09/15	Interior unpainted metal supply air duct - SV1.44, post-reheat coils, S central	HVAC - Supply	45.6	0.05	82.1	1,100
161-CV-1	2015/09/16	Interior central vacuum wall connection, SW	Central Vac	15.3	0.008	172	1,100
Room 162							
162-F-1	2015/09/14	Central - carpet	Floor	122	0.09	122	1,100
162-C-1	2015/09/15	W - lay-in 2x4' acoustical ceiling tile	Ceiling	136	0.09	136	220
162-W-1	2015/09/14	SE wall - painted drywall	Wall	4.1	0.09	4.1	220
162-W-2	2015/09/14	NW wall - painted drywall	Wall	5.8	0.09	5.8	220
Room 163							
163-F-1	2015/09/14	N - carpet	Floor	62.0	0.09	62.0	1,100
163-F-2	2015/09/14	S - carpet	Floor	83.0	0.09	83.0	1,100
163-C-1	2015/09/15	N - painted concrete	Ceiling	4.4	0.09	4.4	220
163-C-2	2015/09/15	S - painted concrete	Ceiling	2.8	0.09	2.8	220
163-W-1	2015/09/15	N wall - wood paneling	Wall	5.2	0.09	5.2	220
163-W-2	2015/09/14	W wall - wood paneling	Wall	<2.0	0.09	<2.0	220
163-W-3	2015/09/14	S wall - painted concrete block	Wall	9.6	0.09	9.6	220
163-W-4	2015/09/14	E wall - wood paneling	Wall	3.7	0.09	3.7	220
163-S-1	2015/09/14	Top - mid-shelf, E	Horizontal	293	0.09	293	220
163-S-2	2015/09/14	Top - mid-shelf, W	Horizontal	1,550	0.09	1,550	220
163-TD-1	2015/09/15	Top of painted metal exhaust air duct, S	Duct	227	0.09	227	220
163-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, Central	HVAC - Exhaust	1,160	0.09	1,160	220
163-ED-2	2015/09/15	Exterior of painted metal supply air diffuser, W	HVAC - Supply	60.1	0.09	60.1	220
163-ID-1	2015/09/15	Interior unpainted metal exhaust air duct above grating, Central	HVAC - Exhaust	35.2	0.05	63.4	1,100
163-ID-2	2015/09/15	Interior unpainted metal supply air duct above diffuser, W	HVAC - Supply	16.4	0.05	29.5	1,100
163-ID-3	2015/09/15	Interior unpainted metal supply air duct - SV1.45, pre-reheat coils, S	HVAC - Supply	112	0.09	112	1,100
163-ID-4	2015/09/16	Interior unpainted metal exhaust air duct at fire damper FD-93, NE	HVAC - Exhaust	750	0.09	750	1,100
163-ID-5	2015/09/16	Interior unpainted metal supply air duct at fire damper FD-91, NW	HVAC - Supply	29.7	0.09	29.7	1,100
Room 164							
164-F-1	2015/08/04	Central - linoleum sheet	Floor	75.4	0.09	75.4	220
164-C-1	2015/08/04	S central - lay-in 2x4' acoustical ceiling tile	Ceiling	<2.0	0.09	<2.0	220
164-W-1	2015/08/04	N wall - painted drywall	Wall	13.2	0.09	13.2	220
164-W-2	2015/08/04	W wall - painted drywall	Wall	6.1	0.09	6.1	220
164-W-3	2015/08/04	E wall - painted drywall	Wall	2.5	0.09	2.5	220
164-W-4	2015/08/04	S wall - painted drywall	Wall	2.7	0.09	2.7	220
164-S-1	2015/08/04	Top - workbench, laminate, W	Horizontal	8.0	0.09	8.0	220
164-S-2	2015/08/04	Top - shelving, laminate, E	Horizontal	120	0.09	120	220
164-HVAC-1	2015/08/04	Exterior of exhaust air - painted metal grating, S	HVAC - Exhaust	533	0.045	1,066	220
164-HVAC-2	2015/08/04	Exterior of exhaust air - painted metal grating, N	HVAC - Exhaust	190	0.045	380	220
164-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, N	Ceiling (above)	36.4	0.09	36.4	1,100
164-TD-1	2015/09/15	Ceiling chase - top of exhaust air duct, S	Duct (above ceiling)	31.1	0.09	31.1	1,100
164-ID-1	2015/09/15	Interior unpainted metal supply air duct - SV1.46, pre-reheat coils, S	HVAC - Supply	31.2	0.05	56.2	1,100
164-ID-2	2015/09/15	Interior unpainted metal supply air duct - SV1.46, post-reheat coils, S	HVAC - Supply	40.7	0.05	73.3	1,100
164-ID-3	2015/09/15	Interior of exhaust air duct, S	HVAC - Exhaust	19.6	0.09	19.6	1,100

Table 1 - Summary of Lead Results in Surface Dust
Pre-Abatement Lead Assessment - RCMP Lab Building - Regina, SK

Sample Number	Date Sampled (yyyy/mm/dd)	Location Description	Surface Sampled	Lead on Wipe (ug)	Surface Area Sampled (m ²)	Lead Concentration (ug/0.09 m ² = ug/ft ²)	Lead Abatement Guideline ⁽³⁾ (ug/0.09 m ² = ug/ft ²)
164-ID-4	2015/09/15	Interior supply air duct, light fixture, W	HVAC - Supply	11.7	0.05	21.1	1,100
Room 165							
165-F-1	2015/09/14	E - carpet	Floor	60.3	0.09	60.3	1,100
165-C-1	2015/09/15	E - lay-in, 2x4' acoustical ceiling tile	Ceiling	12.7	0.09	12.7	220
165-W-1	2015/09/14	S wall - painted drywall	Wall	2.2	0.09	2.2	220
165-S-1	2015/09/14	Top - desk, central	Horizontal	8.2	0.09	8.2	220
165-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, Central	Ceiling (above)	38.1	0.09	38.1	1,100
165-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, SE	HVAC - Exhaust	281	0.09	281	220
165-ED-2	2015/09/16	Exterior of supply air vent - light fixture, SW	HVAC - Supply	6.3	0.09	6.3	220
165-ID-1	2015/09/15	Interior unpainted metal exhaust air duct above grating, SE	HVAC - Exhaust	83.6	0.09	83.6	1,100
Room 166							
166-F-1	2015/09/14	Central - linoleum sheet	Floor	40.0	0.09	40.0	220
166-C-1	2015/09/15	E central - lay-in 2x4' acoustical ceiling tile	Ceiling	3.8	0.09	3.8	220
166-W-1	2015/09/14	W wall - painted drywall	Wall	70.3	0.09	70.3	220
166-S-1	2015/09/14	Top - shelf, SE	Horizontal	12.9	0.09	12.9	220
166-TD-1	2015/09/15	Ceiling chase - top of unpainted exhaust air duct, SW	Duct (above ceiling)	183	0.09	183	1,100
166-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, Central	HVAC - Exhaust	13.4	0.09	13.4	220
166-ID-1	2015/09/15	Interior unpainted metal exhaust air duct above grating, Central	HVAC - Exhaust	54.6	0.09	54.6	1,100
Room 167							
167-F-1	2015/09/14	Central - linoleum sheet	Floor	<2.0	0.09	<2.0	220
167-C-1	2015/09/14	Central - painted drywall	Ceiling	75.7	0.09	75.7	220
167-W-1	2015/09/14	S wall - ceramic tile	Wall	<2.0	0.09	<2.0	220
167-S-1	2015/09/14	Top - counter, S	Horizontal	3.1	0.09	3.1	220
167-TC-1	2015/09/14	Ceiling chase adjacent hallway - top of lay-in 2x4' acoustical ceiling tile	Ceiling (above)	35.6	0.09	35.6	1,100
167-ED-1	2015/09/14	Exterior of unpainted metal exhaust air grating, NE	HVAC - Exhaust	48.5	0.04	109	220
167-ED-2	2015/09/16	Exterior of unpainted metal supply air grating, NE	HVAC - Supply	2.7	0.04	6.1	220
167-ID-1	2015/09/14	Interior unpainted metal exhaust air duct above grating, NE	HVAC - Exhaust	84.1	0.09	84.1	1,100
Room 168							
168-F-1	2015/09/14	S - linoleum sheet	Floor	4.3	0.09	4.3	220
168-C-1	2015/09/14	S - painted drywall	Ceiling	6.3	0.09	6.3	220
168-W-1	2015/09/14	S wall - ceramic tile	Wall	2.1	0.09	2.1	220
168-S-1	2015/09/14	Top - counter surface, SE	Horizontal	2.5	0.09	2.5	220
168-TD-1	2015/09/14	Ceiling chase adjacent hallway - top of unpainted metal exhaust air duct, NW	Duct (above ceiling)	150	0.09	150	1,100
168-ED-1	2015/09/14	Exterior of unpainted metal exhaust air grating, Central	HVAC - Exhaust	32.0	0.04	72.0	220
168-ID-1	2015/09/14	Interior of unpainted metal exhaust air duct above grating, Central	HVAC - Exhaust	38.7	0.09	38.7	1,100
Room 173/183							
173-F-1	2015/09/14	Central - carpet	Floor	<2.0	0.09	<2.0	1,100
173-F-2	2015/09/14	W - carpet	Floor	<2.0	0.09	<2.0	1,100
173-C-1	2015/09/15	Central - lay-in 2x4' acoustical ceiling tile	Ceiling	4.8	0.09	4.8	220
173-C-2	2015/09/15	SE - lay-in 2x4' acoustical ceiling tile	Ceiling	5.8	0.09	5.8	220
173-W-1	2015/09/14	N wall - painted drywall	Wall	<2.0	0.09	<2.0	220
173-W-2	2015/09/14	W wall - painted drywall	Wall	<2.0	0.09	<2.0	220
173-W-3	2015/09/14	S wall - painted drywall	Wall	<2.0	0.09	<2.0	220
173-W-4	2015/09/14	E wall - painted drywall	Wall	<2.0	0.09	<2.0	220
173-S-1	2015/09/14	Top - desk, W central	Horizontal	<2.0	0.09	<2.0	220
173-S-2	2015/09/14	Top - desk, W	Horizontal	<2.0	0.09	<2.0	220
173-TC-1	2015/09/15	Ceiling chase - top of lay-in 2x4' acoustical ceiling tile, Central	Ceiling (above)	3.4	0.09	3.4	1,100
173-TD-1	2015/09/15	Ceiling chase - top of unpainted metal exhaust air duct, SE	Duct (above ceiling)	409	0.09	409	1,100
173-ED-1	2015/09/15	Exterior of painted metal exhaust air grating, Central	HVAC - Exhaust	3.4	0.09	3.4	220
173-ED-2	2015/09/15	Exterior of supply air vent - light fixture, SE	HVAC - Supply	5.8	0.04	13.1	220
173-ID-1	2015/09/15	Interior unpainted metal exhaust air duct above grating, Central	HVAC - Exhaust	19.7	0.05	35.5	1,100
173-ID-2	2015/09/15	Interior unpainted metal supply air diffuser at light fixture, SE	HVAC - Supply	10.9	0.04	24.5	1,100
Basement Mechanical Area							
CS-HVAC-1	2015/08/05	Interior exhaust air duct from Room 151 - pre-filter, galvanized metal	Duct - HVAC	55,300	0.09	55,300	1,100
CS-HVAC-2	2015/08/05	Interior exhaust air duct from Room 151 - post-filter, galvanized metal	Duct - HVAC	4,850	0.09	4,850	1,100
CS-ED-1	2015/09/16	Exterior exhaust air relief vent from main exhaust duct - metal louvre	HVAC - Exhaust	2,470	0.075	2,964	1,100
CS-ID-3	2015/09/15	Interior supply air duct to Room 151 - pre-filter, galvanized metal	HVAC - Supply	803	0.09	803	1,100
CS-ID-4	2015/09/15	Interior supply air duct to Room 151 - post-filter, galvanized metal	HVAC - Supply	212	0.09	212	1,100
CS-CV-CAN-3	2015/09/16	Intake tube - W of Hall, Rooms 146-161, 225-242 - Canister 3	Central Vac	62.7	0.03	188	1,100
CS-CV-CAN-1	2015/09/16	Intake tube - 1st Floor - East of Hallway - Canister 1	Central Vac	52.8	0.015	317	1,100
CS-CV-CAN-3-E	2015/09/16	Exterior exhaust from central vac - Canister 3	Central Vac	14.6	0.015	87.6	220
CS-CV-CAN-3-I	2015/09/16	Interior central vac - post-filter bag - Canister 3	Central Vac	3,220	0.094	3,083	1,100
Roof							
Roof-ED-1	2015/09/16	Exterior of stainless exhaust air vent stack, 3rd from SW	HVAC - Exhaust	15.9	0.09	15.9	1,100
Roof-ID-1	2015/09/16	Interior stainless exhaust vent stack, 3rd from SW	HVAC - Exhaust	4.4	0.09	4.4	1,100
Quality Assurance/Quality Control							
BLANK	2015/08/05	Blank wipe sample	Blank	< 2.0	N/A	< 2.0	N/A
TB-SD	2015/09/14	Travel Blank	Blank	<2.0	N/A	<2.0	N/A
MD-TB	2015/09/16	Travel Blank	Blank	< 2.0	N/A	< 2.0	N/A
EB-1	2015/09/15	Equipment Blank	Blank	3.0	N/A	3.0	N/A
EB-2	2015/09/17	Equipment Blank	Blank	< 2.0	N/A	< 2.0	N/A

Notes:

- All concentrations expressed in micrograms (ug) per square foot (ft²) or per 0.09 square metres (m²) as noted.
- The symbol < indicates a concentration less than the laboratory method detection limit.
- Lead Abatement Guideline = Development of Screening Guidelines for Lead in Dust - RCMP Lab Building, 6101 Dewdney Avenue, Regina SK (Millennium EMS Solutions Ltd.).
- A black shaded cell indicates the lead concentration exceeds the decontamination guideline. A coloured shaded cell indicates the lead concentration may exceed guidelines if renovations are performed.