National Research Council Canada | Conseil national de recherches Canada

Administrative Services and Property Management Branch | Direction des services administratifs et gestion de l'immobilier

NRC · CNRC

Addendum / Addenda

No./N^{o}
1

Project Description / Description de projet		
M-22 Aircraft Cabin Comfort and Environment Research Facility		
Solicitation No./ No de sollicitation 15-22004	Project No./N^{o} de projet M-22 3788	W.O. No./N^{o} d'ordre de travail
Departmental Representative / représentant ministériel Maurice Richard		Date June 24, 2015

Notice:	**Nota**:
This addendum shall form part of the tender documents and all conditions shall apply and be read in conjunction with the original plans and specifications.	Cet addenda fait partie intégrale des dossiers d'appel d'offres; toutes les conditions énoncées doivent être lues et appliquées en conjonction avec les plans et les devis originaux.

General

A1.1 **Change of Tender Dates**

Tender Close: July 24, 14:00 EST
Last Addendum: July 17
Last Alternate Submission: July 3
Additional Site Visits: July 2, 9:00 and June 30, 9:00

A1.2 **Hazardous Material Abatement**

A1.2.1 Specifications :

1.1 **Add** attached Section 02 62 00.01 "Schedule A – Hazardous Materials Table".

1.2 **Add** attached Section 02 82 00.03 "Asbestos Abatement – Maximum Precautions".

.1 Refer to Article 1.8 "Existing Conditions" of same.

.1 **Clarification** to item 1.8.1.1: **"Note that this condition is not within the project area."**

.2 **Clarification** to item 1.8.1.2: **"Note that this condition is not within the project area."**

.3 **Add** to item 1.8.1.3: **"Refer to Sheet 3788-M06, detail 1 and Plan Notes 03 & 04 for pipe locations.**

.4 **Add** to item 1.8.1.4: **"Refer to Sheet 3788-M06, detail 1 and Plan Notes 03 & 04 for pipe locations.**

.5 **Add** to item 1.8.1.5: "**Refer to Sheet 3788-A05, 3788-A06, and 3788-M03 for**

locations of proposed penetrations. Refer to Sheet 3788-A-05 detail 1, 2c and attached sketch for extent of ceiling and bulkhead removal. Extent of removal is full length and width of project area"

.2 Refer to Article 1.8 "Existing Conditions"

.1 **Add** to item 1.8.2: "**Refer to Sheet 3788-A05, 3788-A06, and 3788-M03 for locations of proposed penetrations. Penetrations including but not limited to: windows, doors, louvres and vents and required removals for new structural work. Contractor to remove an additional 300mm of material around all proposed opening dimensions, both on interior and on exterior of building faces. Refer to sheet 3788-S05 and 3788-S06 for removal locations required by new structural work."**

.3 **Add** to item 1.8.3: **"Refer to Sheet 3788-A05 detail 1, detail 2 and Demolition Note 34 for proposed hoarding location."**

1.3 **Add** attached "Asbestos Assessment Buildings M-36 and M-22 1200 Monteral Road, Ottawa, On." dated May 8, 2015 by Pinchin Ltd. Refer to sections applying to M-22 Building Assessment.

1.4 **Add** attached "Designate Substance Survey Building M-22 Ottawa, On" dated January 2009 by Oakhill Environmental Inc.

End of Addendum 01

SCHEDULE A: DESIGNATED SUBSTANCES/ HAZARDOUS MATERIALS [Note 1]

Environmental Issue[i]	Area of Concern	Required Action
Asbestos-Containing Materials	Friable and non-friable asbestos-containing materials (ACMs) have been identified and are present throughout the project area. Any disturbance and/or removal of these materials shall be performed by a qualified contractor. These materials are outlined within the Designated Substances Report and Project-Specific Report for this abatement project, referenced in this section and/or Section 02 82 00.03.	Appropriate asbestos abatement practices must be utilized during the removal of asbestos-containing materials, including the use of proper personal protective equipment, as per Ontario Occupational Health and Safety Act, R.S.O., 1990, O. Reg. 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations. Asbestos waste is to be disposed of in accordance with O. Reg. 347/90, as amended, General Waste Management. Remove asbestos containing materials in accordance with the requirements of Section 02 82 00.03.
Lead	Lead has been confirmed to be present in concentrations that may result in a health risk during work activities. All paints, and all other surface coatings including structural steel coatings, are considered as containing detectable concentrations of lead in the project area. Lead is also assumed or suspected to be present in the following materials: • Solder on the joints of copper piping; • Caulking in cast iron drainpipe joints; • Electrical components, including wiring connectors, grounding conductors, and solder; and • Emergency light batteries.	Remove or disturb lead-containing materials in accordance with O. Reg. 490/09, Designated Substances, as amended and Ontario Ministry of Labour (MoL) - *Guideline: Lead on Construction Projects*. Lead is to be disposed of in accordance with O. Reg. 347/90, as amended, General Waste Management. No lead-containing material sampling was performed for lead leachate analysis. The disposal of construction waste containing lead is dependent on leachate testing, as governed by O. Reg. 347/90. Contractor is to retain a competent person prior to disposal to classify lead-containing waste streams as hazardous or non-hazardous for disposal purposes, using the Toxicity Characteristic Leachate Procedure (TCLP) at a certified analytical laboratory. All sampling procedures and submissions shall be approved by the NRC Departmental Representative.

Environmental Issue[i]	Area of Concern	Required Action
Mercury	Mercury vapour is present in approximately 80 fluorescent light tubes, and in 2 thermostats in the project area.	Remove equipment containing mercury for recycling or disposal, as applicable, in accordance with O. Reg. 490/09, as amended, Designated Substances; Ontario MoL document *The Safe Handling of Mercury: A Guide for the Construction Industry,* and O. Reg. 347/90, as amended, General Waste Management.
Silica	Silica is assumed to be present within the following materials in the project area: • Cement, concrete, masonry building materials (brick, terracotta, concrete block, etc.) and associated mortars; • Plaster building elements; and • Vinyl flooring products.	Appropriate work practices must be utilized during the disturbance of these structures in accordance with O. Reg. 490/09, as amended, Designated Substances; and Ontario MoL - *Guideline: Silica on Construction Projects*.
Polychlorinated Biphenyls (PCBs)	PCBs are assumed to be present in the following materials in the project area: • Approximately 40 ballasts associated with fluorescent light fixtures.	Confirm PCB content of all light ballasts prior to disposal using Identification of Lamp Ballasts Containing PCBs, by Environment Canada EPS 2/CC/2 (revised), Remove any PCB-containing equipment in accordance with O. Reg. 362/90, as amended; O. Reg. 347/90, and *PCB Regulations* 2008, as amended; and Transportation of Dangerous Goods Act.

Note 1: This schedule only summarizes confirmed asbestos-containing materials and other designated substances and hazardous materials. Please refer to the below referenced reports for additional information. All contractors are to verify site conditions, quantities, and hazardous material locations themselves and base their bids upon their own observations and quantity take-offs. Contractors are responsible for understanding and confirming scope of work for project prior to removal or disturbance.

References:

1. Designated Substances Survey, Building M-22. Prepared by Oakhill Environmental Inc., dated January 2009.

2. Asbestos Assessment. Buildings M-36 and M-22, 1200 Montreal Road, Ottawa, ON. Prepared by Pinchin Ltd. Dated March 8, 2015.

Part 1 General

1.1 SECTION INCLUDES

.1 Comply with requirements of this Section when performing following work:

.1 Removal or disturbance of more than one square metre of friable or non-friable asbestos-containing materials.

.2 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating of asbestos containing materials, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.

.2 Refer to the following documents for details on asbestos containing materials:

.1 Designated Substances Survey, Building M-22. Prepared by Oakhill Environmental Inc., dated January 2009.

.2 Asbestos Assessment. Buildings M-36 and M-22, 1200 Montreal Road, Ottawa, ON. Prepared by Pinchin Ltd. Dated March 8, 2015.

.3 In any instances where approximate quantities differ between quantities provided in this Specification Section and in the documents in Item 1.1.2 above, the quantities provided in this Specification Section shall apply.

1.2 RELATED SECTIONS

.1 Section 02 62 00.01 – Schedule A: Hazardous Materials Table.

.2 Section 02 81 01 – Hazardous Materials.

1.3 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.205-03, Sealer for Application to Asbestos-Fibre-Releasing Materials.

.2 Canadian Standards Association (CSA International).

.3 Department of Justice Canada.

.1 Canadian Environmental Protection Act (CEPA), 1999.

.4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).

.1 Material Safety Data Sheets (MSDS).

.5 Transport Canada (TC).

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

.6 Ontario Environmental Protection Act, R.R.O 1990,

.1 General – Waste Management, O. Reg 347/90, as amended.

.7 Underwriters' Laboratories of Canada (ULC).

.8 Ontario Ministry of Labour (MoL).

.1 Occupational Health and Safety Act, R.S.O 1990, c. O1 (OSHA)

.1 O.Reg. 278/05 – Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, as amended.

.2 O.Reg. 490/09 – Designated Substances.

.3 O.Reg. 213/91 - "Construction Projects", as amended.

1.4 DEFINITIONS

.1 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.

.2 Amended Water: water with a non-ionic surfactant wetting agent added to reduce surface tension of water to allow wetting of fibres.

.3 Asbestos-Containing Materials (ACMs): materials that contain 0.5 percent or more asbestos by dry weight, identified under Existing Conditions Article, including fallen materials and settled dust.

.4 Asbestos Work Area: Area where actual removal and sealing and enclosure of spray or trowel-applied asbestos-containing materials takes place.

.5 Authorized Visitors: NRC Departmental Representative, and representative(s) of regulatory agencies.

.6 Competent worker: in relation to specific work, means a worker who:

.1 Is qualified because of knowledge, training and experience to perform the work.

.2 Is familiar with the provincial laws and with the provisions of the regulations that apply to the work.

.3 Has knowledge of all potential or actual danger to health or safety in the work.

.7 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:

.1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.

.2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.

.3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.

.8 DOP Test: testing method used to determine integrity of Negative Pressure unit using dioctyl phthalate (DOP) HEPA filter leak test.

.9 Friable Material: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

.10 Glove Bag: prefabricated glove bag as follows:

.1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.

.2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.

.3 Equipped with reversible, double-pull, double throw zipper on top and at approximately mid-section of the bag.

.4 Straps for sealing ends around pipe.

.11 Hazardous Material Workplan: A brief report identifying the location and quantities of hazardous materials and the methods that will be used to remove, store, transport and dispose of them.

.12 HEPA vacuum: DOP tested, High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.13 Negative pressure: DOP tested system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.

.1 System to maintain minimum pressure differential of 5 Pa relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.

.14 Non-Friable Materials: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.

.15 Occupied Area: any area of building or work site that is outside Asbestos Work Area.

.16 Polyethylene sheeting sealed with tape: Polyethylene sheeting of type and thickness specified sealed with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through sheeting into clean area.

.17 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Before beginning work:

.1 Obtain from appropriate agency and submit to NRC Departmental Representative necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to NRC Departmental Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.

.2 Submit proof satisfactory to NRC Departmental Representative that every worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Worker Training Program approved by the Ministry of Training, Colleges and Universities and every supervisor of a worker involved in a Type 3 operation has successfully completed the Asbestos Abatement Supervisor Training Program approved by the Ministry of Training, Colleges and Universities as outlined in O. Reg. 278/05, s. 20 (1). Submit proof of attendance in form of certificate.

.3 Ensure supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by NRC Departmental Representative. Submit proof of attendance in form of certificate. Minimum of one Supervisor for every ten workers.

.4 Submit layout of proposed enclosures and decontamination facilities to NRC Departmental Representative for review.

.5 Submit documentation including test results for sealer proposed for use.

.6 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.

.7 Submit proof of Contractor's Asbestos Liability Insurance.

.8 Submit proof satisfactory to NRC Departmental Representative that employees have appropriate respirator fitting and testing. Workers must be fit-tested **(quantitative)** with respirator that is personally issued.

.9 Submit Worker's Compensation Board status and transcription of insurance.

.10 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including but not limited to following:

.1 amended water;

.2 slow-drying sealer.

.11 Submit Asbestos Abatement section within Hazardous Material Work Plan.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area includes:

.1 Where removing any asbestos-containing materials, as a minimum, full-face respirator equipped with HEPA P-100 filter cartridges. All respirators shall be personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction.

.2 All respirators to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirators are to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirators to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is

physically able to perform the operation while using the respirator.

.3 Disposable-type protective clothing (high-density polyethylene protective clothing (Tyvek or similar, as approved by Client/Client Representative) that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn

.2 Requirements for each worker:

.1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.

.2 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room and remove clothing except respirators. Place contaminated worksuits in receptacles for disposal with other asbestos - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. Still wearing the respirator proceed naked to showers. Using soap and water wash body and hair thoroughly. Clean outside of respirator with soap and water while showering; remove respirator; remove filters and wet them and dispose of filters in container provided for purpose; and wash and rinse inside of respirator. When not in use in work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.

.3 After showering and drying off, proceed to clean change room and dress in street clothes at end of each day's work, or in clean coveralls before eating, smoking, or drinking. If re-entering work area, follow procedures outlined in paragraphs above.

.4 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers must not use this system as means to leave or enter work area.

.3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

.4 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.

.5 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.

.6 Ensure that no person required to enter an Asbestos Work Area has facial hair or other facial condition that affects seal between respirator and face.

.7 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.3 Separate for reuse, and recycling and place in designated containers steel, metal, plastic waste in accordance with Waste Management Plan.

.4 Place materials defined as hazardous or toxic in designated containers. Exterior on-site waste containers must be closable and lockable.

.5 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.6 Fold up metal banding, flatten and place in designated area for recycling.

.7 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.

.8 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

.1 The following ACMs have been identified as asbestos-containing or assumed asbestos-containing, and are to be removed to accommodate the project:

.1 Approximately eight (8) square metres of non-friable 9”x9” vinyl floor tiles.

.2 Approximately fifty (50) square metres of drywall, where the drywall joint compound is assumed of containing asbestos.

.3 Approximately five-hundred (500) linear metres of friable pipe insulation containing asbestos, some of which is currently concealed by solid

asbestos-containing ceiling finishes that are themselves asbestos-containing.

.4 Approximately fifty (50) pipe fittings insulated with friable cement parging containing asbestos, some of which is currently concealed by solid asbestos-containing ceiling finishes that are themselves asbestos-containing.

.5 Approximately one-thousand six-hundred (1,600) square metres of cementious parge containing asbestos.

.2 Select areas of walls with asbestos-containing cementious parging on concrete will require removal in support of future door openings, windows and other wall penetrations as outlined within this tender package.

.3 Asbestos-containing cementious parging on concrete walls will require limited disturbance associated with construction of a work area hoarding wall.

.4 Refer to the following documents, which are bound to this Specification and forms part of the tender documents package, for details on materials containing asbestos to be handled, removed, or otherwise disturbed and disposed of during this Project:

.1 Designated Substances Survey, Building M-22. Prepared by Oakhill Environmental Inc., dated January 2009.

.2 Asbestos Assessment. Buildings M-36 and M-22, 1200 Montreal Road, Ottawa, ON. Prepared by Pinchin Ltd. Dated March 8, 2015.

.5 Contractors are responsible for all leachate hazardous material testing using toxicity characteristic leaching procedures (TCLP) prior to disposal of materials as well as costs associated with disposal of hazardous materials (where applicable), in accordance with O.Reg 347/90, as amended. Include in contract sum costs due to this requirement.

.6 Verification of quantities of asbestos-containing materials and site conditions are the responsibility of the bidding contractor. Contractors are to verify all site conditions themselves and base their abatement bids upon their own observations and quantity take-offs. Bidding contractors are to draw their own conclusions with respect to site conditions and/or factors that may affect their work.

.7 Notify NRC Departmental Representative of non-friable/friable or any otherwise suspect asbestos-containing material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by NRC Departmental Representative.

1.9 SCHEDULING

.1 Not later than ten (10) days before beginning Work on this Project notify following in writing:

.1 Provincial/Territorial, Department of Labour.

.2 Disposal Authority.

.2 Inform sub-trades of presence of asbestos-containing materials identified in the documents listed in Item 1.8.

.3 Submit to NRC Departmental Representative copy of notifications prior to start of Work.

.4 Hours of Work: perform work involving asbestos abatement located at the Building during hours specified by NRC Departmental Representative. **The work schedule**

must be approved in writing by the NRC Departmental Representative in advance of work. Contractor shall be available to work continuously from beginning to end of project.

.5 Any waste loading shall only be performed after regular business hours (18:00). Waste loading shall not occur through occupied areas of the building. Waste storage containers to be closed and locked overnight.

1.10 PERSONNEL TRAINING

.1 Before beginning Work, provide to NRC Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from Asbestos Work Area, in aspects of work procedures, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at minimum:

.1 Proper fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Cleaning and Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

.4 Every worker involved in a Type 3 operation must have successfully completed the Asbestos Abatement Worker Training Program approved by the Ministry of Training, Colleges and Universities.

.5 Every supervisor of a worker involved in a Type 3 operation must have successfully completed the Asbestos Abatement Supervisor Training Program approved by the Ministry of Training, Colleges and Universities.

Part 2 Products

2.1 MATERIALS

.1 Polyethylene: minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.

.2 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.

.3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

.4 Wetting agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by NRC Departmental Representative mixed with water in concentration to provide adequate penetration and wetting of asbestos-containing material.

.5 Asbestos waste containers: Metal or fibre - type acceptable to dump operator with tightly fitting covers and 0.15 mm minimum thickness sealable polyethylene liners.

.1 Inner container: 0.15 mm thick sealable polyethylene waste bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.

.3 Label containers in accordance with applicable Regulations. Label in both official languages.

.6 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.

.7 Scaffolding: Of appropriate size and strength to accommodate project in accordance with O.Reg 213/91, with specifications and set-up to be approved and stamped by professional engineer. Include in contract sum costs due to this requirement.

.8 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.

.9 Sealer: flame spread and smoke developed rating less than 50 and be compatible with new fireproofing.

.10 Encapsulant: penetrating type conforming to CAN/CGSB-1.205.

Part 3 Execution

3.1 PREPARATION

.1 Work Areas:

.1 Shut off and isolate air handling and ventilation systems for work areas to prevent fibre dispersal to other building areas during work phase. Conduct smoke tests to ensure that duct work isolation measures are is airtight. Seal and caulk joints and seams of active return air ducts within Asbestos Work Area.

.2 Pre-clean moveable furniture and carpeting within proposed work area using HEPA vacuum and remove from work area to an appropriate temporary location.

.3 Pre-clean all floors, fixed casework, plant, and equipment within proposed work area(s), using HEPA vacuum and cover with polyethylene sheeting sealed with tape. This includes the drainage channel/tunnel beneath the floor slab within the work area as well as areas where concrete floor slabs have saw cut.

.4 Clean proposed work area(s) using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.

.5 The spread of dust from the work area shall be prevented by:

.1 Construction of a hoarding wall to separate the work area from the adjacent occupied office space, comprised of a wood studs and plywood. The hoarding wall shall be installed from floor to ceiling deck and wall to wall, with no gaps, windows or doors. No access is to be permitted through this hoarding wall. All edges and seams shall be fully sealed with tape and/or expanding foam on all sides. Hoarding wall to remain at end of abatement project.

.2 Using enclosures of polyethylene or other suitable material that is impervious to asbestos (including, if the enclosure material is opaque, one or more transparent window areas to allow

observation of the entire work area from outside the enclosure), if the work area is not enclosed by walls.

.3 Using curtains of polyethylene sheeting or other suitable material that is impervious to asbestos, fitted on each side of each entrance or exit from the work area.

.6 DOP test negative pressure units within one (1) month prior to work operations. Provide documentation to NRC Departmental Representative. Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. Provide continuous monitoring of pressure difference using automatic recording instrument. The system to maintain a negative air pressure of 0.02 inches [5 Pa] of water, relative to the area outside the enclosed area. The system to be inspected and maintained by a competent person prior each use to ensure that there is no air leakage, and if the filter is found to be damaged or defective, it to be replaced before the ventilation system is used. Vent negative air units to the outdoors.

.7 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.

.8 Build airlocks at entrances to and exits from work area(s) so that work area(s) are always closed off by one curtained doorway when workers enter or exit.

.9 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used: "CAUTION ASBESTOS HAZARD AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".

.10 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. Remove ceiling - mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by NRC Departmental Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.

.11 Maintain emergency and fire exits from work area(s), or establish alternative exits satisfactory to Fire Commissioner of Canada.

.12 Where application of water is required for wetting asbestos-containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.

.2 Worker Decontamination Enclosure System:

.1 Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:

.1 Equipment and Access Room: build Equipment and Access Room between Shower Room and work area(s), with two curtained doorways, one to Shower Room and one to work area(s). Install portable toilet, waste receptor, and storage facilities for workers' shoes and protective clothing to be reworn in work area(s). Build Equipment and Access Room large enough to accommodate

specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.

.2 Shower Room: build Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five workers. Provide hot and cold water or water of a constant temperature that is not less than 40°C or more than 50°C. Provide individual controls inside the room to regulate water flow, and individual controls inside room to regulate temperature. Provide piping and connect to water sources and drains. Pump waste water through 5 micrometre filter system acceptable to NRC Departmental Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.

.3 Clean Room: build Clean Room between Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.

.3 Container and Equipment Decontamination Enclosure System:

.1 Container and Equipment Decontamination Enclosure System consists of Staging Area within work area, Washroom, Holding Room, and Unloading Room. Purpose of system is to provide means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which Worker Decontamination Enclosure System is not suitable.

.1 Staging Area: designate Staging Area in work area for gross removal of dust and debris from waste containers and equipment, labelling and sealing of waste containers, and temporary storage pending removal to Washroom. Equip Staging Area with curtained doorway to Washroom.

.2 Washroom: build Washroom between Staging Area and Holding Room with two curtained doorways, one to Staging Area and one to Holding Room. Provide high - pressure low - volume sprays for washing of waste containers and equipment. Pump waste water through 5 micrometre filter system before directing into drains. Provide piping and connect to water sources and drains.

.3 Holding Room: build Holding Room between Washroom and Unloading Room, with two curtained doorways, one to Washroom and one to Unloading Room. Build Holding Room sized to accommodate at least two waste containers and largest item of equipment used.

.4 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.

.4 Construction of Decontamination Enclosures:

.1 Build suitable framing for enclosures or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape. Use one layer of FR polyethylene on floors, as applicable.

.2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.

.5 Separation of Work Areas from Occupied Areas:

.1 Separate parts of building required to remain in use from parts of building or exterior used for asbestos abatement by means of airtight barrier system constructed as follows:

.1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create airtight barrier.

.2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.

.6 Maintenance of Enclosures:

.1 Maintain enclosures in tidy condition.

.2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

.3 Visually inspect enclosures at beginning of each working period.

.4 Use smoke methods to test effectiveness of barriers when directed by NRC Departmental Representative.

.7 Do not begin Asbestos Abatement work until:

.1 Arrangements have been made for disposal of waste.

.2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.

.3 Work area(s) and decontamination enclosures and parts of building required to remain in use are effectively segregated.

.4 Tools, equipment, and materials waste containers are on hand.

.5 Arrangements have been made for building security.

.6 Warning signs are displayed where access to contaminated areas is possible.

.7 Notifications have been completed and other preparatory steps have been taken.

.8 Work area enclosure has been inspected and approved by the NRC Departmental Representative.

.9 Locations for waste bins as designated by the NRC Departmental Representative have been established. Keep bins covered and enclosed while at the site. Bin loading area shall be kept clean at all times.

3.2 SUPERVISION

.1 Minimum of one Supervisor for every ten workers is required.

.2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.3 ASBESTOS REMOVAL

.1 Before removing asbestos:

.1 Prepare site.

.2 Spray asbestos-containing material with water containing specified wetting agent, using airless spray equipment capable of providing "mist" application to prevent release of fibres. Saturate asbestos material sufficiently to wet it to substrate without causing excess dripping. Spray asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.

.2 Remove saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.

.3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.

.4 After completion of stripping work, wire brushed and wet-sponge surfaces from which asbestos has been removed to remove visible material. During this work keep surfaces wet.

.5 Where NRC Departmental Representative decides complete removal of asbestos containing material is impossible due to obstructions such as structural members or major service elements, or because asbestos containing material was originally applied to asphaltic coating, and provides written direction, encapsulate material as follows:

.1 Apply surface film forming type sealer to provide 0.635 mm minimum dry film thickness over asbestos surfaces. Apply using airless spray equipment to avoid blowing off fibres. Apply penetrating type sealer to penetrate existing sprayed asbestos surfaces to uniform depth of 25 mm minimum. Apply penetrating type sealer to penetrate existing asbestos surfaces uniformly to substrate.

.6 After wire brushing and wet sponging to remove visible asbestos and after encapsulating asbestos containing material impossible to remove, wet clean entire work area including Equipment and Access Room, and equipment used in process. After 24 hour period to allow for dust settling, wet clean these areas and objects again. During this settling period no entry, activity, or ventilation will be permitted. After second 24 hour period under same conditions, clean these areas and objects again using HEPA vacuum followed by wet cleaning. After inspection by NRC Departmental Representative or designate, apply continuous coat of slow drying sealer to surfaces of work area. Allow at least 16 hours with no entry, activity, ventilation, or disturbance other than operation of negative pressure units during this period.

.7 Work is subject to visual inspection and air monitoring by NRC Departmental Representative. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

.8 Cleanup:

.1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.

.2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.

.3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.

.4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.

.5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.4 INSPECTION

.1 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviation(s) from these requirements that have not been approved in writing by the NRC Departmental Representative may result in Work stoppage, at no cost to the Owner.

.2 NRC Departmental Representative will inspect Work for:

.1 Adherence to specific procedures and materials.

.2 Final cleanliness and completion.

.3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

.3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur, NRC Departmental Representative may order Work shutdown.

.4 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.5 AIR MONITORING

.1 From beginning of Work until completion of cleaning operations, NRC Departmental Representative will collect air samples on daily basis outside of work area enclosure(s) in accordance with industry standard practice.

.1 Contractor shall be responsible for monitoring inside in accordance with applicable Provincial/Territorial Occupational Health and Safety Regulations.

.2 Contractor shall ensure that respiratory safety factors for Workers are not exceeded.

.2 If air monitoring shows that areas outside work area are contaminated, enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Areas.

.1 Stop work and clean areas outside of Asbestos Work Areas when Phase Contrast Microscopy measurements exceed 0.05 fibres per cubic centimetre (f/cc) and correct procedures.

.2 All required cleaning, re-cleaning, additional air testing and/or inspections will be at no extra charge to NRC Departmental Representative.

.3 Final air monitoring to be conducted as follows: After Asbestos Work Area has passed visual inspection by NRC Departmental Representative, and acceptable coat of lock-down agent has been applied to surfaces within enclosure, and appropriate setting period has passed, NRC Departmental Representative will perform aggressive air monitoring within Asbestos Work Area.

.1 Final air monitoring results must show fibre levels of less than 0.01 f/cc.

.2 If air monitoring results show fibre levels in excess of 0.01 f/cc, re-clean work area and apply another acceptable coat of lock-down agent to surfaces.

.3 Repeat as necessary until fibre levels are less than 0.01 f/cc.

.4 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.6 FINAL CLEANUP

.1 Following cleaning and air sampling by NRC Departmental Representative shows that asbestos levels inside work area enclosure(s) do not exceed 0.01 fibres/cc, proceed with final cleanup.

.2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible asbestos-containing particles observed during cleanup, immediately, using HEPA vacuum equipment.

.3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.

.4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.

.5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.

.6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations.

.7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of at authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.

END OF SECTION

PR-08-043

NATIONAL RESEARCH COUNCIL CANADA
1200 MONTREAL ROAD
OTTAWA, ONTARIO
K1A 0R6

DESIGNATED SUBSTANCES SURVEY

BUILDING M-22
OTTAWA, ON

Distribution:
2 copies – National Research Council Canada
1 copy – Oakhill Environmental Inc.

January 2009

OAKHILL
ENVIRONMENTAL INC.

EXECUTIVE SUMMARY

Oakhill Environmental (Oakhill) was retained by National Research Council Canada (NRC) to conduct a designated substances survey within Building M-22 in Ottawa, Ontario. All site work was completed from December 1st to December 11h, 2008.

All work carried out meets the requirements of the Ontario Occupational Health and Safety Act and WHMIS Regulation (formerly Bill 208). The purpose of the investigation was to identify any potential designated substances and mould.

Based on the visual inspection and laboratory analyses, designated substances were identified to be present in the facility. A summary of the survey recommendations is presented in Table 1.

Table 1 - Summary of Findings and Recommendations

Issue	Comments	Recommendations
Asbestos	Rooms 14 & 8 (FS#B001)	
	One damaged mud joint compound fitting was identified on the domestic cold water system. (1 unit)	Encapsulate the damaged mud joint compound fittings on the domestic cold water system.
	Damaged Aircell pipe insulation was identified on the domestic hot water system. (0.2 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the domestic hot water system.
	Damaged Aircell pipe insulation was identified on the compressed air system. (0.2 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the compressed air system.
	Room 10A (FS#B003)	
	One damaged mud joint compound fitting was identified on the chiller system. (1 unit)	Encapsulate the damaged mud joint compound fittings on the chiller system.
	Room 13 (FS#B006)	
	One damaged mud joint compound fitting was identified on the domestic cold water system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the domestic cold water system.
	Room 13A (FS#B007)	
	One damaged mud joint compound fitting was identified on the domestic cold water system. (1 unit)	Encapsulate the damaged mud joint compound fitting on the domestic cold water system.
	Storage Room (FS#B008)	
	Three damaged mud joint compound fittings were identified on the condensate system. (3 units)	Encapsulate the three damaged mud joint compound fittings on the condensate system.

Issue	Comments	Recommendations
	Two open ends Aircell pipe insulation was identified on the condensate system. (0.4 LM)	Two encapsulations are required on the open ended Aircell pipe insulation on the condensate system.
	Damaged Aircell pipe insulation was identified in eleven locations on the condensate system. (2.5 LM)	Eleven encapsulations are required on the damaged Aircell pipe insulation on the condensate system.
	Room 6B & Hall (FS#B010)	
	Damaged Aircell pipe insulation was identified on the condensate system. (0.2 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the condensate system.
	Room 6 (FS#B012)	
	One damaged mud joint compound fitting was identified on the steam system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the steam system.
	Rooms 3 & 5 (FS#B013)	
	One damaged mud joint compound fitting was identified on the steam system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the steam system.
	Damaged Aircell pipe insulation was identified on the domestic cold water system. (0.4 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the domestic cold water system.
	Damaged Aircell pipe insulation was identified on the domestic hot water system. (0.4 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the domestic hot water system.
	Rooms 9, 9A, 9B & Storage (FS#B014)	
	Damaged Aircell pipe insulation was identified on the steam system. (0.4 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the steam system.
	Two damaged mud joint compound fittings were identified on the steam system. (2 units)	Encapsulate the two damaged mud joint compound fittings on the steam system.
	One damaged mud joint compound fitting was identified on the domestic hot water system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the domestic hot water system.
	One damaged mud joint compound fitting was identified on the domestic cold water system. (1 unit)	Remove the one damaged mud joint compound fitting on the domestic cold water system.
	Room 7 & Hallway (FS#B015)	
	One damaged mud joint compound fitting was identified on the condensate system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the condensate system.

Issue	Comments	Recommendations
	Former Wave Room (FS#B017)	
	Damaged Aircell pipe insulation was identified on the condensate system. (0.5 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the condensate system.
	Six open ends Aircell pipe insulation was identified on the condensate system. (1.2 LM)	Six encapsulations are required on the open ended Aircell pipe insulation on the condensate system.
	One damaged mud joint compound fitting was identified on the condensate system. (1 unit)	Encapsulate the damaged mud joint compound fitting on the condensate system.
	ACM debris (mud joint compound fitting insulation) was identified from the condensate system. (<1.0 m^2)	Clean-up ACM debris observed from the condensate system.
	ACM debris (Aircell pipe insulation) was identified from the condensate system. (<1.0 m^2)	Clean-up ACM debris observed from the condensate system.
	Room 108 (FS#1001)	
	One damaged mud joint compound fitting was identified on the steam system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the steam system.
	Damaged Aircell pipe insulation was identified in two locations on the steam system. (0.4 LM)	Two encapsulations are required on the damaged Aircell pipe insulation on the steam system.
	Two open ends Aircell pipe insulation was identified on the steam system. (0.4 LM)	Two encapsulations are required on the open ended Aircell pipe insulation on the steam system.
	Two open ends Aircell pipe insulation was identified on the condensate system. (0.4 LM)	Two encapsulations are required on the open ended Aircell pipe insulation on the condensate system.
	Room 110 (FS#1002)	
	One damaged mud joint compound fitting was identified on the condensate system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the condensate system.
	Two open ends Aircell pipe insulation was identified on the condensate system. (0.4 LM)	Two encapsulations are required on the open ended Aircell pipe insulation on the condensate system.
	Room 103 (FS#1006)	
	Three damaged mud joint compound fittings were identified on the steam system. (3 units)	Encapsulate the three damaged mud joint compound fittings on the steam system.
	Damaged Aircell pipe insulation was identified in two locations on the steam system. (0.6 LM)	Two encapsulations are required on the damaged Aircell pipe insulation on the steam system.

Issue	Comments	Recommendations
	One open ended Aircell pipe insulation was identified on the steam system. (0.2 LM)	One encapsulation is required on the open ended Aircell pipe insulation on the steam system.
	Room 102 (FS#1007)	
	Three damaged mud joint compound fittings were identified on the steam system. (3 units)	Encapsulate the three damaged mud joint compound fittings on the steam system.
	Two open ended Aircell pipe insulation was identified on the steam system. (0.2 LM)	Two encapsulations are required on the open ended Aircell pipe insulation on the steam system.
	Two damaged mud joint compound fittings were identified on the condensate system. (2 units)	Encapsulate the two damaged mud joint compound fittings on the condensate system.
	Damaged Aircell pipe insulation was identified in one location on the condensate system. (0.6 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the condensate system.
	Rooms 101a, 101b, 101c (FS#1009)	
	Damaged Aircell pipe insulation was identified in one location on the domestic hot water system. (0.2 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the domestic hot water system.
	One damaged mud joint compound fitting was identified on the domestic hot water system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the domestic hot water system.
	Three damaged mud joint compound fittings were identified on the steam system. (3 units)	Encapsulate the three damaged mud joint compound fittings on the steam system.
	Rooms 100, 100f, 100g, 100h, 100i, 100j, 100k (FS#1010)	
	Damaged Aircell pipe insulation was identified in one location on the steam system. (0.4 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the steam system.
	Six damaged mud joint compound fitting was identified on the steam system. (6 units)	Encapsulate the six damaged mud joint compound fittings on the steam system.
	Damaged Aircell pipe insulation was identified in eight locations on the domestic cold water system. (1.8 LM)	Eight encapsulations are required on the damaged Aircell pipe insulation on the domestic cold water system.
	Three open ended sections of Aircell pipe insulation were identified on the domestic cold water system. (0.6 LM)	Three encapsulations are required on the open ended Aircell pipe insulation on the domestic cold water system.
	Damaged Aircell pipe insulation was identified in nine locations on the domestic hot water system. (1.8 LM)	Nine encapsulations are required on the damaged Aircell pipe insulation on the domestic hot water system.

Issue	Comments	Recommendations
	Three open ended sections of Aircell pipe insulation were identified on the domestic hot water system. (0.6 LM)	Three encapsulations are required on the open ended Aircell pipe insulation on the domestic hot water system.
	Damaged Aircell pipe insulation was identified in ten locations on the compressed air system. (2.2 LM)	Ten encapsulations are required on the damaged Aircell pipe insulation on the compressed air system.
	Five open ended sections of Aircell pipe insulation were identified on the compressed air system. (1.0 LM)	Five encapsulations are required on the open ended Aircell pipe insulation on the compressed air system.
	Foyer (FS#1017)	
	Damaged Aircell pipe insulation was identified in one location on the condensate system. (0.2 LM)	One encapsulation is required on the damaged Aircell pipe insulation on the condensate system.
	One damaged mud joint compound fitting was identified on the condensate system. (1 unit)	Encapsulate the one damaged mud joint compound fitting on the condensate system.
	ACM debris (Aircell pipe insulation) was identified from the condensate system. (<1.0 m^2)	Clean-up ACM debris observed from the condensate system.
Lead	Four paint samples were submitted for lead analysis. Three of the samples (grey paint in FS#B005, the flat red paint in FS#B014 and the yellow paint in FS#B005) were found to contain significant levels of lead (i.e., equal to or greater than 5000 ppm). Lead may be present in the solder used on copper domestic water lines, as caulking in bell fittings for cast iron drainage pipes, in glazing on the ceramic tiles and in electrical equipment, wiring or fixtures.	The draft Proposed Lead Regulation on Construction Projects, May 5, 1995, (enforced by the Ministry of Labour) does not require removal of lead paint or lead-based materials, unless work on these materials is likely to produce lead fumes or dust, for example during welding, torch cutting, grinding, sanding or sandblasting. In the event that such work is conducted at this facility, ensure that lead fumes or dust do not exceed the maximum allowable Time Weighted Average Exposure Value (TWAEV) of 0.15 mg/m^3 as prescribed by the OHSA.
Mercury	Mercury vapour may be present in fluorescent light tubes and thermostats. Mercury may also be present in paints and adhesives.	Mercury, or mercury vapour within light fixtures, pose no risk to workers or occupants, provided the mercury containers remain intact and undisturbed. Where possible, fluorescent lights should be recycled at an approved recycling facility. Mercury must be handled and disposed of in accordance with O. Reg. 390/00 and O. Reg. 558/00.

Issue	Comments	Recommendations
Silica	Silica may be present in concrete, cement mortar and non-fibreglass acoustic ceiling tiles.	Ensure workers performing demolition work are not exposed to airborne silica levels in excess of 0.20 mg/m^3 by providing respiratory protection, and/or wetting down work area, and providing workers with a facility to properly wash prior to exiting the work area as prescribed by O.Reg.845/90.
Suspect Mould	Room 10A (FS#B003)	
	Suspect mould was observed in one location on the chiller system fitting insulation.	Bulk fungal analysis should be performed to the species level. Once the hazard is qualified, the mould should be removed and the source of the moisture should be mitigated.
	Rooms 107 & 107A (FS#1004)	
	Suspect mould was observed in two locations on the fitting insulation of the chiller system.	Bulk fungal analysis should be performed to the species level. Once the hazard is qualified, the mould should be removed and the source of the moisture should be mitigated.
	Room 103 (FS#1006)	
	Suspect mould was observed in three locations on the fitting insulation of the chiller system.	Bulk fungal analysis should be performed to the species level. Once the hazard is qualified, the mould should be removed and the source of the moisture should be mitigated.
	Room 104 (FS#1013)	
	Suspect mould was observed in one location on the ceiling tiles.	Bulk fungal analysis should be performed to the species level. Once the hazard is qualified, the mould should be removed and the source of the moisture should be mitigated.
	Room 211 (FS#2002)	
	Suspect mould was observed in two locations on the surface of the deck system.	Bulk fungal analysis should be performed to the species level. Once the hazard is qualified, the mould should be removed and the source of the moisture should be mitigated.

None of the other designated substances were observed during the course of the survey inspection.

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APPENDICES

1.0 INTRODUCTION

Oakhill Environmental (Oakhill) was retained by the National Research Council Canada (NRC) to perform a survey for Designated Substances and mould of Building M-22 in Ottawa, Ontario. Building M-22 was surveyed from December 1st to December 11h, 2008.

The purpose of the investigation was to identify any building materials or equipment containing certain substances termed "Designated Substances" and mould.

This survey will enable NRC to:

1. Manage asbestos containing materials (ACM's) to ensure that these materials are in good condition and provide recommendations for ACM's that are in need of repair,
2. Provide this report to NRC building managers, project managers, contractors and subcontracts enabling them to comply with O. Reg. 278/05, the regulation regarding asbestos on construction projects and in buildings and repair operations, and
3. Provide a comprehensive survey, which will enable NRC to develop a Management Plan to deal with designated substances.

1.1 Limitations

This report details the accessible Designated Substances found within the building and the exterior walls. Representative views were made above accessible suspended ceiling systems. Throughout the process of inspection there were, on numerous occasions, areas that were inaccessible. These areas include but are not limited to: areas above solid ceilings, areas behind solid walls and internal components of machinery or equipment. These areas require intrusive investigative techniques, which may compromise the integrity of that system. An example of an intrusive issue is asphaltic roofing felts (tar paper), which may contain asbestos. However, due to the potential for damages to the building and its contents, as well as safety reasons, no samples were obtained from the roofing systems at the facility. Intrusive investigative techniques are only undertaken at the expressed request of NRC staff where forthcoming renovations projects are known.

Any area that was not inspected and considered inaccessible in this report should be dealt with cautiously in future endeavours before undertaking any form of work, as there may be ACM in this area. In such future situations, samples should be collected and analyzed of all suspect ACM before commencing work. Any area that was not accessible at the time of inspection would be noted within the report.

The report reflects the observations of accessed areas, findings and analysis of materials sampled during the survey. Designated Substances may have been removed from or added to the project area. It is the NRC's responsibility to disclose whether any Designated Substances have been added to or removed from the project area.

The material in it reflects Oakhill's best judgement based on the information discovered at the time of preparation and within the Designated Substance Survey scope of work. There may be materials on-site, which are not represented by these investigations. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Oakhill accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

2.0 SCOPE OF WORK

The purpose of the investigation was to identify any building materials or equipment containing certain substances termed "Designated Substances" and mould. The scope defined for this project is summarized below.

1. To provide assessments for the presence of Designated Substances which include:
    - Acrylonitrile
    - Arsenic
    - Asbestos
    - Benzene
    - Coke Oven Emissions
    - Ethylene Oxide
    - Isocyanates
    - Lead
    - Mercury
    - Silica (free crystalline silica)
    - Vinyl Chloride (vinyl chloride monomer, not PVC)
    - And in addition Mould
2. Assessment will include building materials and components incorporated in the structure and finishes (including exterior finishes). Items not included are building and service tunnels, owner or occupant articles within the building (e.g. process materials or equipment, furniture, etc.), soil contaminants, groundwater, vessels, drums or underground storage tanks)
3. To collect samples of suspect building materials to verify the presence of asbestos and lead
4. To provide testing from a certified laboratory on samples collected of suspect asbestos and lead.
5. Provide three hard and electronic (PDF copies of the final report.

3.0 REGULATORY CRITERIA, STANDARDS AND GUIDELINES

The following regulatory criteria, standards, and guidelines were applied for the interpretation and reporting of observations, laboratory data, and on-site monitoring data. The building materials and contents were visually examined to determine the presence of the following designated substances in accordance with the requirements of the Ministry of Labour's (MOL) Occupational Health and Safety Act, Section 30:

Acrylonitrile	O. Reg. 835/90 as amended by O. Reg. 101/04
Arsenic	O. Reg. 836/90 as amended by O. Reg. 102/04
Asbestos	O. Reg. 278/05 and O. Reg. 347/90
Benzene	O. Reg. 839/90 as amended by O. Reg. 105/04
Ethylene Oxide	O. Reg. 841/90 as amended by O. Reg. 107/04
Isocyanates	O. Reg. 842/90 as amended by O. Reg. 108/04
Lead	O. Reg. 843/90 as amended by O. Reg. 109/04
Mercury	O. Reg. 844/90 as amended by O. Reg. 110/04 and the MOL guideline
Silica	O. Reg. 845/90 as amended by O. Reg. 111/04
Vinyl Chloride	O. Reg. 846/90 as amended by O. Reg. 112/04

Asbestos-Containing Material (ACM) is defined as "Material that contains 0.5% or more asbestos by dry weight". Friable Material is defined as "material that: (a) when dry, can be crumbled, pulverized or powdered by hand pressure, or (b) is crumbled, pulverized or powdered".

For asbestos, lead and silica the above regulations define exposure guidelines for a worker's time-weighted average exposure of the material in air. Airborne levels should not exceed 0.01 fibres/m^3 of asbestos in air, 0.15 mg/m3 of lead in air, 4.3 mg/m^3 of acrylonitrile in air, 0.2 mg/m^3 of arsenic in air, 3.0 mg/m^3 of benzene in air and 0.2 mg/m^3 of silica in air. The above regulations classify disturbances (Type 1, Type 2, and Type 3), handling requirements, respiratory requirements and monitoring requirements.

The Ministry of Labour published, The Safe Handling of Mercury, A Guideline for the Construction Industry, Jan 1991, outlining the health effects, sources, respiratory protection during the clean up of mercury. From the U.S. Department of Housing and Urban Development, Lead- Based Paint is classified as any paint application containing at least 1.0 milligrams of lead per square centimetre of surface area (1.0 mg/cm2) or at least 0.5% lead content by weight (5,000 ppm) or 5,000 µg/g.

The Provincial Government has issued O. Reg. 558/00 controlled under R.R.O. 1990, Regulation 347 outlining generator, hauler and receiver requirements for wastes dependant on the results of leachate analyses. Provincial and Federal regulations also outline the packaging and transportation of wastes.

4.0 SURVEY METHODOLOGY

4.1 Background Information Review

Reviewing existing reports, interviewing knowledgeable NRC staff, and reviewing as-built drawings allowed Oakhill to obtain a basic understanding of potential issues regarding each building.

4.2 Field Investigation

A detailed visual survey of all accessible areas of the building on a room-by-room basis, including ceiling spaces above removable acoustical ceiling tiles; and wall spaces behind removable panels. Each area or room of the building was assigned a four-digit functional space identification number beginning with 1001. A room-by-room inspection was conducted for Designated Substances in all accessible areas. All suspect ACM and lead were sampled and were categorized with a unique homogeneous material number. Visual assessment of all known and suspect ACM included assessment as to friability, type, quantity, condition, accessibility, appropriate response, as well as comments made on the potential or likelihood of future damage or exposure to ACM by building occupants. Quantification of all ACM's were approximations only, not actual measurements. Square metres or linear metres were generally used for quantifying ACM. All ACM's are documented through functional space forms and photographs.

In the performance of this Designated Substances survey, Oakhill utilized the project team comprised of the following staff:

Mr. Fil Barillaro, M.A.Sc., P.Eng.	Project Manager
Mr. Kevin Christian, M.Sc., P.Geo.	QA Reviewer
Mr. Bill McGovern	Environmental Analyst
Mr. Raivo Tahiste	Environmental Analyst
Mr. Gino Barillaro	Environmental Analyst
Mr. Sean Bagnulo	Environmental Analyst
Mr. Sean Morris, C. Tech	Environmental Analyst
Ms. Tanya Fiocca	Administration

4.2.1 Homogenous Materials

Materials were grouped to be homogenous. That is, materials that are uniform in colour and texture were assumed to be similar in content. Regarding asbestos, samples collected of suspect materials adhered to O. Reg. 278/05, Table 1 Bulk Material Samples – Section 3 (3), for minimum sample requirements for respective suspect materials and quantities. Samples were randomly collected to be representative of each

suspect ACM and lead material and then assigned a homogenous material number accordingly. A homogenous materials list was generated which consists of suspect ACM sampled, with positive materials highlighted. The Homogenous Materials List is located in Table 2 of this report**.**

4.3 Sample Collection

Collection of bulk samples of suspect materials for submission to AGAT Laboratories Ltd., in Mississauga, Ontario for analysis for asbestos (as percentage asbestos fibre, and type of asbestos fibre) and for lead (ug/g).

4.3.1 Bulk Sample Collection

Oakhill field staff wore half-face respirators with P100 cassettes during bulk sampling events. Building materials were pre-dampened with an application of amended water from a spray bottle to suppress surface and airborne fibres prior to disturbance for sample collection.

The building material sampled was sealed with caulking after sample collection to restore the material to its original condition. Every effort to minimize intrusion of the sampled building materials was always of paramount consideration. Each sample was sealed in a new plastic bag and labeled with a unique sample number and then double bagged. Chain of custody records were completed on-site and submitted with all samples to an approved laboratory.

All bulk materials sampled were randomly collected and are representative of each area of homogenous material. The minimum number of bulk materials to be collected from an area of homogenous material was in accordance with O. Reg. 278/05, Section 3 (3) (Table 1). All analysis of suspect asbestos containing materials was conducted according to O. Reg. 278/05, Section 3 (1) which states that the following standard be used: U.S. Environmental Protection Agency. Test method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials. June 1993. Sample locations are depicted in Appendix D.

4.3.2 Sample Analysis

All bulk samples were submitted to AGAT Laboratories Inc. (AGAT) in Mississauga, Ontario, an independent laboratory, for analysis.

AGAT has been evaluated and has been found to comply with the criteria and standards established by the Canadian Association for Environmental Laboratories (CAEAL) for asbestos fibre analysis by phase contrast microscopy. The American Industrial Hygiene Association (AIHA) has accredited AGAT for the Industrial Hygiene Laboratory Accreditation Program for Asbestos using optical microscopy. Suspect bulk samples were analyzed using polarized light microscopy, and were based on a "test for first positive" approach. Laboratory results of the asbestos and lead sampling can be found in Appendices B and C respectively.

5.0 FINDINGS AND RECOMMENDATIONS

The results of the survey for designated substances and mould at building M-22 are discussed below.

5.1 Asbestos

All potential asbestos-containing materials sampled have been compiled into a homogenous materials list. Each homogenous material is given a homogeneous number, description, analytical result and corresponding sample numbers. The homogeneous materials list for building M-22 is shown in Table 2.

Table 2 – Homogeneous Materials List

Hom. Mat. #	Material Description	Asbestos Type & Conc.	Sample No.
1	Adhesive Puck (residual backing)	NAD	M22-1A-1C
2	Aircell Pipe Insulation	50 % Chrysotile	M22-2A-2C
3	Mud Joint Compound Fitting Insulation (high temp.)	50 % Chrysotile	M22-3A-3C
4	Mud Joint Compound Fitting Insulation (low temp.)	25 % Chrysotile	M22-4A-4C
5	Fiberglass Pipe Insulation with tar layer and orange jacketing	NAD	M22-5A-5C
6	12" x 12" Floor Tile (white with grey)	NAD	M22-6A-6C
7	2' x 4' Ceiling Tile (deep divot pattern)	NAD	M22-7A-7C
8	Mud Joint Compound Fitting Insulation (chiller)	45 % Chrysotile	M22-8A-8C
9	12" x 12" Ceiling Tile (acoustical tile uniform hole)	NAD	M22-9A-9C
10	Spray on Insulation	NAD	M22-10A-10C
11	12" x 12" Floor Tile (tan)	2 % Chrysotile	M22-11A-11C
12	Plaster	NAD	M22-12A -12C

Hom. Mat. # – Homogeneous Material Number Conc. – Concentration NAD – No Asbestos Detected

5.1.1 Survey Findings

The five building materials that contain asbestos are as follows:

1) Mud joint compound fitting insulation (high temp) on the steam, condensate, compressed air and domestic hot water systems.
2) Aircell pipe insulation on the steam, condensate, compressed air, domestic hot water and domestic cold water systems.
3) Mud joint compound fitting insulation (low temp) on the domestic cold water and tower water systems.
4) Mud joint compound fitting insulation (low temp) on the chiller system.
5) 12” x 12” floor tile (Tan with brown streaks) located in the lunchroom.

Table 3 provides a summary of all asbestos-containing materials by room. This table can be cross-referenced with the functional space forms in Appendix B to find a complete description of the room where ACM materials were encountered.

Table 3 – Summary of ACM by Room Listing

Functional Space ID#	Location	Homo. Mat. #	Material Description and Quantity	Response Measure
Basement				
B001	Rooms 14 & 8	08	Mud Joint Compound Fitting Insulation on the chiller system. – 4 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 7 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 1 Units	1 Encap.
		02	Aircell Pipe Insulation on the domestic cold water system. – 4 LM	O&M
		02	Aircell Pipe Insulation on the domestic hot water system. – 6 LM	O&M
		02	Aircell Pipe Insulation on the domestic hot water system. – 0.2 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 7 Units	O&M
		02	Aircell Pipe Insulation on the compressed air system. – 1 LM	O&M
		02	Aircell Pipe Insulation on the compressed air system. – 0.2 LM	1 Encap.
B003	Room 10A	08	Mud Joint Compound Fitting Insulation on the chiller system. – 13 Units	O&M
		08	Mud Joint Compound Fitting Insulation on the chiller system. – 1 Unit	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 3 Units	O&M
B004	Room 10	08	Mud Joint Compound Fitting Insulation on the chiller system. – 8 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 1 Unit	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 1 Unit	O&M
B005	Room 11	03	Mud Joint Compound Fitting Insulation on the steam system. – 1 Unit	O&M
		08	Mud Joint Compound Fitting Insulation on the chiller system. – 2 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 5 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 1 Unit	O&M
B006	Room 13	08	Mud Joint Compound Fitting Insulation on the chiller system. – 2 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 5 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 3 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 1 Unit	1 Encap.

Functional Space ID#	Location	Homo. Mat. #	Material Description and Quantity	Response Measure
B007	Room 13A	08	Mud Joint Compound Fitting Insulation on the chiller system. – 2 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 1 Unit	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 1 Unit	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 5 Units	O&M
B008	Storage Room	03	Mud Joint Compound Fitting Insulation on the condensate system. – 8 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 3 Units	3 Encaps
		02	Aircell Pipe Insulation on the condensate system. – 31 LM	O&M
		02	Aircell Pipe Insulation on the condensate system. – 2.9 LM	13 Encaps
B010	Room 6B & Hall	04	Mud Joint Compound Fitting Insulation on the tower water system. – 2 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 3 LM	O&M
		02	Aircell Pipe Insulation on the condensate system. – 3 LM	O&M
		02	Aircell Pipe Insulation on the condensate system. – 0.2 LM	1 Encap.
B012	Room 6	02	Aircell Pipe Insulation on the steam system. – 3 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 5 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 1 Unit	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 5 Units	O&M
B013	Rooms 3 & 5	02	Aircell Pipe Insulation on the domestic cold water system. – 5 LM	O&M
		02	Aircell Pipe Insulation on the domestic cold water system. – 0.4 LM	1 Encap.
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 4 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 4 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 1 Unit	1 Encap.
		02	Aircell Pipe Insulation on the domestic hot water system. – 5 LM	O&M
		02	Aircell Pipe Insulation on the domestic hot water system. – 0.4 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 4 Units	O&M
B014	Rooms 9, 9A, 9B & Storage Room	02	Aircell Pipe Insulation on the condensate system. – 43 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 15 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 15 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 1 Unit	1 Encap.
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 32 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic old water system. – 1 Unit	1 Removal
		02	Aircell Pipe Insulation on the steam system. – 43 LM	O&M
		02	Aircell Pipe Insulation on the steam system. – 0.4 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the steam system. – 22 Units	O&M

Functional Space ID#	Location	Homo. Mat. #	Material Description and Quantity	Response Measure
		03	Mud Joint Compound Fitting Insulation on the steam system. – 2 Units	2 Encaps
B015	Room 7 & Hall	03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 2 Units	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 3 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 5 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 3 LM	O&M
		02	Aircell Pipe Insulation on the condensate system. – 9 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 7 Units	O&M
		01	Mud Joint Compound Fitting Insulation on the condensate system. – 1 Unit	1 Encap.
B017	Former Wave Room	--	Suspect ACM 9” x 9” floor tiles (beige) – 7.5 M^2	O&M
		02	Aircell Pipe Insulation on the steam system. – 21 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 20 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 266 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 8 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 1.7 LM	7 Encaps
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 1 Unit	1 Encap
		02	ACM debris (Aircell Pipe Insulation) from the condensate system. – < 1.0 m^2	Clean-up
		03	ACM debris (Mud Joint Compound Fitting Insulation) from the condensate system. – < 1.0 m^2	Clean-up
Ground Floor				
1001	Room 108	03	Mud Joint Compound Fitting Insulation on the condensate system. – 2 Units	O&M
		11	12” x 12” floor tile (tan) – 189 m^2	O&M
		02	Aircell Pipe Insulation on the condensate system. – 15 LM	O&M
		02	Aircell Pipe Insulation on the condensate system. – 0.4 LM	2 Encaps
		02	Aircell Pipe Insulation on the steam system. – 25 LM	O&M
		02	Aircell Pipe Insulation on the steam system. – 0.8 LM	4 Encaps
		03	Mud Joint Compound Fitting Insulation on the steam system. – 10 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 1 Unit	1 Encap.
1002	Room 110	02	Aircell Pipe Insulation on the steam system. – 8 LM	O&M
		11	12” x 12” floor tile (tan) – 46 m^2	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 1 Unit	O&M
		02	Aircell Pipe Insulation on the condensate system. – 8 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 1 Unit	O&M
		02	Aircell Pipe Insulation on the condensate system. – 0.4 LM	2 Encaps
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 1 Unit	1 Encap.

Functional Space ID#	Location	Homo. Mat. #	Material Description and Quantity	Response Measure
1004	Rooms 107 & 107A	03	Mud Joint Compound Fitting Insulation on the steam system. – 2 Units	O&M
1005	Room 109	03	Mud Joint Compound Fitting Insulation on the steam system. – 2 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 2 Units	O&M
1006	Room 103	08	Mud Joint Compound Fitting Insulation on the chiller system. – 8 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 8 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 5 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 4 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 2 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 0.8 LM	3 Encaps
		03	Mud Joint Compound Fitting Insulation on the steam system. – 3 Units	3 Encaps
1007	Room 102	08	Mud Joint Compound Fitting Insulation on the chiller system. – 4 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 5 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 3 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 0.4 LM	2 Encaps
		03	Mud Joint Compound Fitting Insulation on the steam system. – 3 Units	3 Encaps
		02	Aircell Pipe Insulation on the condensate system. – 8 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 3 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 0.2 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 2 Units	2 Encaps
1008	Room 101	02	Aircell Pipe Insulation on the steam system. – 9 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 4 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 8 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 4 Units	O&M
1009	Rooms 101A, 101B, 101C	02	Aircell Pipe Insulation on the steam system. – 15 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 7 Units	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 3 Units	3 Encaps
		02	Aircell Pipe Insulation on the domestic cold water system. – 9 LM	O&M
		04	Mud Joint Compound Fitting Insulation on the domestic cold water system. – 5 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 15 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 15 Units	O&M
		02	Aircell Pipe Insulation on the domestic hot water system. – 9 LM	O&M

Functional Space ID#	Location	Homo. Mat. #	Material Description and Quantity	Response Measure
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 5 Units	O&M
		02	Aircell Pipe Insulation on the domestic hot water system. – 0.2 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the domestic hot water system. – 1 Unit	1 Encap.
1010	Rooms 100, 100F, 100G, 100H, 100I, 100J, 100K	02	Aircell Pipe Insulation on the steam system. – 27 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 30 Units	O&M
		02	Aircell Pipe Insulation on the steam system. – 0.4 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the steam system. – 6 Units	6 Encaps
		02	Aircell Pipe Insulation on the domestic cold water system. – 25 LM	O&M
		02	Aircell Pipe Insulation on the domestic cold water system. – 2.2 LM	11 Encaps
		02	Aircell Pipe Insulation on the domestic hot water system. – 25 LM	O&M
		02	Aircell Pipe Insulation on the domestic hot water system. – 2.6 LM	12 Encaps
		03	Mud Joint Compound Fitting Insulation on the compressed air system. – 1 Unit	O&M
		02	Aircell Pipe Insulation on the compressed air system. – 21 LM	O&M
		02	Aircell Pipe Insulation on the compressed air system. – 3.4 LM	15 Encaps
1017	Foyer	02	Aircell Pipe Insulation on the steam system. – 4 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the steam system. – 3 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 4 LM	O&M
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 6 Units	O&M
		02	Aircell Pipe Insulation on the condensate system. – 0.2 LM	1 Encap.
		03	Mud Joint Compound Fitting Insulation on the condensate system. – 1 Unit	1 Encap.
		02	ACM debris (Aircell Pipe Insulation) from the condensate system. – < 1.0 M^2	Clean-up

LM – linear metre O&M – Operations & Maintenance
Encap – Encapsulation Homo. – Homogeneous Mat. -Materials

Information from examination of the as-built drawings listed the compressed air system in the building as being retrofitted by using the existing hot water heating system; the ACM insulation was retained on the compressed air system.

Asbestos was detected in five homogeneous building materials sampled from the facility. The ACM was categorized as to whether it was friable or non-friable. Further, the materials were grouped according to their similar composition, system and general appearance. The following sub-sections are the result of which materials were considered friable or non-friable. Photographs are provided along with a brief description of the material.

5.1.2 Friable ACM

Mud Joint Compound
A representative photograph of mud joint compound fitting insulation. This material is a malleable grey insulation that has the appearance of granular mud. It appears smooth, round and hard when it is intact with appropriate exterior jacketing.

Aircell
A representative photograph of aircell pipe insulation. This material is grey and white in colour. Aircell is layers of corrugated paper, which gives it the appearance of a honeycomb pattern when the profile is observed.

5.1.3 Non-Friable ACM

12”x12” Floor Tile
A representative photograph of 12” x 12” vinyl asbestos floor tile (VAT). This material may be found in any number of different colours and patterns. VAT’s are normally quite rigid and non-friable. VAT’s are sometimes found under carpeting or they may be present as the only flooring.

5.1.4 Survey Recommendations

Under O. Reg. 278/05 damaged and exposed ACM’s are required to be repaired or removed. In building M-22, the damaged asbestos containing materials, found in Table 3 and summarized in Table 1, will require Type 2 asbestos abatement procedures for removal or repair of 1 square meter or less of material and Type 3 asbestos abatement precautions for removal of greater than 1 square meter of material. These issues should be addressed as soon as possible.

The O. Reg. 278/05 also requires the removal of all ACM’s that have a potential of being disturbed during renovations or demolition. Should friable ACM’s remain in the building, in GOOD condition, the regulation also requires that an Asbestos Management Plan be implemented and kept in place until such time that the ACM’s have been removed. The management plan will include periodic assessment and record updating to be performed on the remaining ACM at least every 12 months.

Building staff and contractors should be made aware of the location and hazards associated with the ACM’s and instructed to not disturb this material. Any disturbance of this material should be reported immediately to property management and appropriate control measures put into place without delay.

5.2 Lead

5.2.1 Survey Findings

Based on visual observations during Oakhill’s room-by-room surveys, potential lead was sampled in four paint finishes. Samples were collected from the painted interior surfaces of building M-22 and were analysed for lead content.

The analytical results are provided in Appendix C and are summarized below in Table 4.

Table 4 – Results of Lead Investigation

Sample	Location	Colour	Results (ppm Lead)	Considered Lead Based Paint*
M22-L1	Walls in FS # 1008	Pale Green Paint	1420 ppm	No
M22-L2	Floor in FS #B005	Grey Paint	21,800 ppm	Yes
M22-L3	On Floor in FS # B014	Flat Red Paint	7,800 ppm	Yes
M22-L4	On Floor in FS # B014	Yellow Paint over Red Paint	235,000 ppm	Yes

*__Note:__ Ontario Ministry of Labour (MOL) considers 5,000ppm lead to be a lead-based paint (LBP).

5.2.2 Survey Recommendations

Based on the analytical results, the grey paint on the floor of room 11 (FS#B005), the flat red paint on the floor of room 9a & 9b (FS#B014) and the yellow paint on the floor of room 9b (FS#B014) all contained greater than 5,000 ppm of lead and are therefore classified as lead-based paints. The remaining sample did not contain greater than 5,000 ppm lead and is therefore classified as a non-lead-based paint.

Lead may be present in the solder used on copper domestic water lines, as caulking in bell fittings for cast-iron drainage pipes and in electrical equipment, wiring or fixtures.

Direct disturbance of the materials can minimize the impact of lead products during removal. Removal of lead materials as an intact unit is the preferred method of removal. Mechanically powered tools increase the airborne concentration of lead dust.

Contractors are responsible to ensure that the workers are not exposed to airborne lead dust levels in excess of 0.15 mg/m3. This can be accomplished by:

- Providing respiratory protection and coveralls
- Suppressing dust levels by wetting with amended water, mops or HEPA vacuums
- Using drop-sheets and polyethylene barriers to control dust
- Ensuring the work areas have adequate ventilation
- Provide workers with the means to practice good hygiene practices when leaving the work area

The removal of metallic lead materials should be carried out in accordance with Ontario Regulation 843/90 and the Ontario Ministry of Labour (MOL) draft Proposed Lead Regulation on Construction Projects, both made under the Occupational Health and Safety Act. Any lead-containing materials should also be disposed of in accordance with Ontario Regulation 558 (formerly O. Reg. 347).

In addition, it is recommended that the United States Department of Housing and Urban Development Guideline, of 0.5 % lead (by weight) or 5,000 parts per million (ppm) lead be used as a guideline for determining whether the use of precautions as outlined in the proposed regulation would be required during the above noted operations. Airborne lead dust or fumes should not exceed the MOL TWAEV of 0.15 milligram per cubic metre (mg/m^3) during the removal of lead based paints and products.

5.3 Mercury

5.3.1 Survey Findings

Mercury vapour is present inside fluorescent light fixtures. Tubes should be removed intact prior to removing the fixtures. Liquid mercury may also be present inside thermostats and manometers in mechanical equipment.

5.3.2 Survey Recommendations

Prior to removal of fluorescent light fixtures, the tubes should be removed from the fixtures intact to prevent the mercury vapour from escaping. As long as the tubes are not broken, workers will not be exposed to hazardous mercury vapour. Prior to demolition of the facility, mercury-containing materials must be removed as per Ontario Regulation 844/90. During demolition, ensure that the maximum concentration of exposure to airborne mercury does not exceed 0.03 mg Hg/m^3 of air.

If applicable, mercury should be collected from thermostats, thermometers, and manometers prior to demolition, however care should be taken to control the release of mercury into the air.

5.4 Silica

5.4.1 Survey Findings

Based on the historic composition of building materials, crystalline silica is present in the following building materials:

- Concrete floor slabs;
- Terra cotta and masonry block walls;
- Mortar; and
- Acoustic ceiling tiles.

5.4.2 Survey Recommendations

Contractors are responsible to ensure workers are not exposed to airborne silica levels in excess of 0.20 mg/m3 when dealing with the above materials. This can be accomplished by:

- Minimize disturbance of the material
- Providing respiratory protection and coveralls
- Suppressing dust levels by wetting with amended water, mops or HEPA vacuums
- Using drop-sheets and polyethylene barriers to control dust
- Ensuring the work areas have adequate ventilation
- Provide workers with the means to practice good hygiene practices when leaving the work area

Use of mechanically powered tools for any demolition work increases the concentration of airborne silica and therefore requires more stringent respiratory protection and controlled work procedures.

5.5 Isocyantes

5.5.1 Survey Findings

At the time of the site inspection, no evidence of isocyantes was noted as part of the structure or finishes.

5.6 Vinyl Chloride Monomer

5.6.1 Survey Findings

At the time of the site inspection, no evidence of vinyl chloride monomer was noted as part of the structure or finishes.

5.7 Benzene

5.7.1 Survey Findings

Benzene may be present in a stable form within roofing materials, paints and adhesives.

5.7.2 Survey Recommendations

It is not expected that benzene concentrations in air will exceed the maximum allowable TWAEV for a worker to benzene (3.0 mg/m^3). To minimize potential benzene exposure, apply paints and adhesives in well-ventilated areas.

5.8 Acrylonitrile

5.8.1 Survey Findings

At the time of the site inspection, no evidence of acrylonitrile was noted as part of the structure or finishes.

5.9 Coke Oven Emissions

5.9.1 Survey Findings

At the time of the site inspection, no evidence of coke oven emissions was noted as part of the structure or finishes.

5.10 Arsenic

5.10.1 Survey Findings

At the time of the site inspection, no evidence of arsenic was noted as part of the structure or finishes.

5.10.2 Survey Recommendations

Arsenic or arsenic-containing compounds may be present in stable form in paints and adhesives. It is not expected that arsenic concentrations in air will exceed the maximum allowable TWAEV for a worker to arsenic (0.2 mg/m^3). To minimize potential arsenic exposure, apply paints and adhesives in well-ventilated areas.

5.11 Mould

5.11.1 Survey Findings

At the time of the site inspection, mould was suspect to be present on the chiller pipe and fitting insulation in six locations, on the ceiling tile in one location and the deck in two locations, respectively. Suspect mould locations were identified in the following functional space areas: B003, 1004, 1006, 1013 and 2002.

5.11.2 Survey Recommendations

Oakhill recommends that the mould be removed and insulating materials that may be used to re-insulate the chiller, domestic cold water and drain pipe insulation be re-evaluated to prevent future occurrences of mould growth.

Continued diligence is recommended to avoid scenarios, which can support fungi growth specifically: water in the presence of cellulose-based surfaces. There must be moisture (such as leaking pipes, cracked window seals, etc.) as well as an indoor substrate (such as the paper layer of drywall, wood, potted plants, etc.) to support

fungal growth. Simply replacing the substrate is not a solution to the problem. The root cause is required to be identified.

6.0 CLOSURE

This report has been prepared for the sole benefit of the National Research Council of Canada.

The conclusions presented represent the best judgement of the assessor based on current environmental standards and on the site conditions observed from December 1st to December 11h, 2008. Due to the nature of the investigation and the limitations of the available data, the assessor cannot warrant against undiscovered environmental liabilities. It is possible that additional, concealed designated substances may become evident during demolition activities.

Should additional information become available, Oakhill requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

We trust that the report meets your current requirements. Should you have any questions or concerns regarding the above, please do not hesitate to contact the undersigned.

Oakhill Environmental Inc.

Fil Barillaro, M.A.S.c., P.Eng.
Project Manager

APPENDIX A

DESIGNATED SUBSTANCES BACKGROUND INFORMATION

Acrylonitrile

Acrylonitrile is regulated in Ontario under Regulation 835/90 of the Occupational Heath and Safety Act. Acrylonitrile is a clear liquid that may be colourless or yellow and that readily reacts with other chemicals to produce long, chain-like molecules (polymers). Acrylonitrile-based polymers are used to produce nitrile rubbers, plastics, acrylic fibres, coatings and adhesives. Workers are typically exposed to acrylonitrile at manufacturing facilities that produce the aforementioned products through inhaling its vapour, direct skin contact, or through ingestion. Although acrylonitrile may be present in some of the building materials, including adhesives and coatings, the chemical will likely be bonded in the polymer form. Therefore, it is not expected that an adverse exposure to acrylonitrile will occur unless the building materials are heated to extreme temperatures. Acrylonitrile vapours may become released from the acrylonitrile-based polymers during a process where high temperatures are applied. Acrylonitrile is classified as *possibly carcinogenic to humans (Group 2b)* as evidence from long-term epidemiological studies since 1980 is conflicting. It is not expected that acrylonitrile concentrations in the air will exceed the maximum allowable time weighted average exposure value (TWAEV) for a worker to acrylonitrile (4.3 mg/m^3).

Arsenic

Arsenic is regulated in Ontario under Regulation 836/90 of the Occupational Heath and Safety Act. The presence of arsenic in the paint coating on interior and exterior finishes is possible. There are no regulated procedures for the removal of paint containing arsenic. If the paint does not contain lead, but does contain arsenic, the comments concerning lead paint, discussed in below, are expected to address the potential arsenic emissions. As the painted surfaces will be handled as per the proposed lead regulation, it is not expected that arsenic concentrations in the air will exceed the maximum allowable TWAEV for a worker to arsenic (0.2 mg/m^3). Human health studies from Argentina and Chile have concluded that arsenic ingestion can result in increased risk of bladder and lung cancer. Non-cancer effects include skin lesions and chronic respiratory disease.

Asbestos

The term "asbestos" describes six naturally occurring fibrous minerals, namely chrysotile, amosite, crocidolite, tremolite, anthophylitte and actinolite. Of the six forms of asbestos, chrysotile (white asbestos), amosite (brown asbestos) and crocidolite (blue asbestos) are the most commonly used. Asbestos has been known to man for centuries and has been used in literally hundreds of products. Asbestos was used because it is strong, insulates well, and resists fire and corrosion.

The Regulation for Asbestos, Ontario Regulation 278/05, made under the Occupational Health and Safety Act defines asbestos as any of the following fibrous silicates:

- Actinolite, Amosite, Anthophyllite, Chrysotile, Crocidolite and Tremolite.

It is important to note that asbestos is defined further as either “friable” or “non-friable”. O. Reg. 278/05 defines friable as:

"friable material" means material that,

- *when dry, can be crumbled, pulverized or powdered by hand pressure, or*
- *is crumbled, pulverized or powdered;*

Non-friable is any material that doesn’t fit the criteria for friable. Essentially, any material that cannot be *crumbled, pulverized or powdered by hand pressure or is not crumbled, pulverized or powdered.*

The distinction between whether an asbestos-containing material (ACM) is friable or non-friable is a notable characteristic as the *‘friability’* of the ACM translates the **potential** risk of producing an airborne fibre release.

Non-friable ACM's offer far less potential risk of producing an airborne fibre release. These materials should not be cut or shaped using power tools, because this procedure allows for the release of asbestos fibres.
Materials that contain asbestos are commonly referred to as ACM's. O. Reg. 278/05, defines an ACM as:

- *material that contains 0.5 per cent or more asbestos by dry weight;*

The Revised Regulations of Ontario (1990), Regulation 347 (The General Waste Regulation) requires the disposal of asbestos waste in a double sealed container, properly labelled and free of cuts, tears or punctures. The waste must be disposed of in a licensed waste facility, which has been properly notified of the presence of asbestos waste. The federal "Transportation of Dangerous Goods Act" covers the transport of asbestos waste to the disposal site. Asbestos waste is to be handled by a licensed waste hauler.

Asbestos is typically found in plaster, mechanical insulation, gaskets, thermal insulation on pipes, refractory material, roofing felts, floor tiles, ceiling tiles and parging, heat resistant panels, incandescent light fixture reflector plates, and any other material requiring a high degree of durability or thermal resistance. The common use of potential friable (breakable by hand) ACM's in construction ceased voluntarily in the mid 1970s; however, the spray application of asbestos-containing fireproofing was not prohibited until 1986. The airborne maximum allowable TWAEV for a worker to asbestos depends on the type of asbestos, they include, amosite (0.1 f/cc), crocidolite (0.1 f/cc) and other forms of asbestos (1.0 f/cc). Asbestos fibres cumulate in the lungs. Human health effects are proportional to exposure. Studies show long term or high dose exposure can result in scarring of the lung and restricted breathing. Mesothelioma (cancer of the pleural lining) and other lung cancers are also related to asbestos exposure.

Benzene

Benzene is regulated in Ontario under Regulation 839/90 of the Occupational Heath and Safety Act Historically; benzene has been produced as a by-product of coal gasification and metallurgical coke production in steel making. The light oil product from such processes contains benzene, toluene, ethyl benzene and xylene, and these components are separated by distillation. Today, most benzene is produced from the refining of petroleum.

Benzene has applications as a solvent in synthetic rubber manufacturing and processing, and in paints, varnishes, stains, adhesives, roofing materials and sealants. The use of benzene in tire and other rubber goods manufacturing and as a solvent and component of paints and adhesives has declined considerably as a result of concerns about workplace exposure. Nevertheless, it is often present in trace quantities in petroleum and aromatic solvents, some of which have replaced benzene in many uses. Benzene is also a minor component of gasoline sold in Canada.

The maximum allowable TWAEV for a worker to benzene is 3 mg/m^3. Based on the age of the facility, it is possible that benzene was present in the paints, adhesives and roofing materials used during the original construction of the facilities. However, over time, the benzene component typically volatilizes out of the paints, solvents and roofing bitumens and is released into the ambient air. Therefore, it is likely that only trace levels of benzene presently exist in these building materials. It is not expected that benzene emissions from any existing building materials on site will exceed the allowable TWAEV.

Exposure to benzene can range in severity from nausea to suppression of the immune system and death. Long-term exposure to benzene can potentially result in Acute Myeloid Leukemia, Secondary Aplastic Leukemia and damage to the reproductive system.

Ethylene Oxides

Ethylene Oxides are regulated in Ontario under Regulation 841/90 of the Occupational Heath and Safety Act. Ethylene oxide is a common by-product of fumigation or sterilization procedures. The airborne maximum

allowable TWAEV for a worker to Ethylene Oxides is 1.8 mg/m^3. Acute exposure may result in vomiting, shortness of breath and dizziness. Chronic exposure has been associated with the occurrence of cancer, reproductive effects, mutagenic changes and neurotoxicity.

Isocyanates

Isocyanates is regulated in Ontario under Regulation 842/90 of the Occupational Heath and Safety Act Isocyanates are a class of chemicals used in the manufacture of certain types of plastics, foams and roof insulation. The Isocyanate (-CNO) group reacts very readily with certain other types of molecules, a property responsible for the usefulness of Isocyanates in industry. Due to the high reactivity of the Isocyanate group, exposure to Isocyanates can result in primary irritation, sensitization and hypersensitivity reactions. The respiratory system, the eyes and the skin are the main areas affected by exposure. Isocyanates in their initial form are found as a vapour, a mist, or a dust which become airborne and then taken into the body. Once the Isocyanates are chemically bonded to other chemicals during manufacturing processes, the Isocyanates are not readily available to become airborne unless heated. Therefore, Isocyanate exposure is not expected to be a concern as long as the burning of plastics, foams, and insulation is not carried out. The airborne maximum allowable TWAEV for a worker to Isocyanates is 0.005 ppm.

Lead

Lead is regulated in Ontario under Regulation 843/90 of the Occupational Heath and Safety Act. The Ontario Ministry of Labour (MOL) draft Proposed Lead Regulation on Construction Projects, made under the Occupational Health and Safety Act, May 5, 1995, states that the removal of lead paint is not required unless work on these materials are likely to produce airborne lead dust or fumes, for example during welding, torch cutting, sanding and sand blasting. If these operations are likely to occur during building renovations or demolition, it is recommended that the removal of lead paint be carried out in accordance with procedures outlined in the proposed regulation.

Based on conversations with the MOL, it is recommended that the United States Department of Housing and Urban Development Guideline, of 0.5 % lead (by weight) or 5,000 parts per million (ppm) lead be used as a guideline for determining whether the use of precautions as outlined in the proposed regulation would be required during the above noted operations. Airborne lead dust or fumes should not exceed the MOL TWAEV of 0.15 milligram per cubic metre (mg/m^3) during the removal of lead based paints and products.

Lead may be used in its pure metallic form or combined chemically with other elements to form lead compounds. Metallic lead is used to make products such as electric storage batteries, ammunition, lead solder, radiation shields, pipes, and sheaths for electric cables. Metallic lead is sometimes combined with other metals such as copper, tin and antimony as lead alloys for use in the manufacture of a variety of metal products.

Organic lead compounds contain a lead atom covalently bonded to carbon. Common examples of organic lead compounds include lead “soaps” such as lead oleates, high-pressure lubricants, and anti-knock agents in gasoline.

Inorganic lead compounds (or lead salts) result when lead is combined with an element other than carbon. Examples are lead oxide, lead chromate, lead carbonate and lead nitrate. Inorganic lead compounds may occur as solids or in solutions, and are used in insecticides, pigments, paints, frits, glasses, plastics, and rubber compounds.

Lead may affect the health of workers if it is in a form that may be inhaled, ingested or absorbed through the skin. Lead dust consists of small, solid particles of metallic lead or lead compounds that are generated by sanding, grinding, polishing, and sawing operations. Lead fume is produced in significant amounts when solid lead or materials containing lead are heated to temperatures above 500^o C, as in welding and flame cutting or burning.

Mercury

Mercury is regulated in Ontario under Regulation 844/90 of the Occupational Heath and Safety Act. Mercury is commonly found in buildings as mercury vapour lighting, in thermometers, thermostats and some electrical switches. Mercury can also be found in minor amounts in fluorescent lamp tubes and in paints and adhesives.

Mercury, or mercury vapour within light fixtures, thermometers, thermostats and electrical switches poses no risk to workers or occupants provided the mercury containers remain intact and undisturbed. Prior to demolition, remove mercury containers and store in a safe location. The airborne maximum allowable TWAEV for a worker to mercury is 0.05 mg/m^3.

Short-term exposure to mercury is a rare occurrence due to the more stringent controls. Historically, short- term exposure to high concentrations of mercury vapour included: harmful effects of the nervous, respiratory and digestive systems and the kidneys.

Silica

Silica is regulated in Ontario under Regulation 845/90 of the Occupational Heath and Safety Act Silica, also referred to as free crystalline silica, is found in concrete, cement, mortar, ceramic wall and floor tiles, stucco finishes and acoustic ceiling tiles. Prolonged exposure to, and inhalation of free crystalline silica, may result in respiratory disease known as silicosis, which is characterised by progressive fibrosis of the inner lung tissue and marked shortness of breath or impaired lung function. The maximum TWAEV for airborne Silica dust is 0.20 mg/m^3.

Precautions should be taken during work on concrete (coring etc.) and ceiling tiles to minimize exposure to free crystalline silica dust. Silica exposure should not exceed the MOL TWAEV of 0.20 milligrams per cubic metre (mg/m^3) during demolition activities. This can be achieved by:

- providing workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions;
- provide workers with facilities to properly wash prior to exiting the work area.

Vinyl Chloride

Vinyl Chloride is regulated in Ontario under Regulation 846/90 of the Occupational Heath and Safety Act. Vinyl chloride is found in many applications in buildings such as plumbing pipes, protective coatings on insulated pipes and interior finishes (i.e., vinyl baseboard trim). Vinyl chlorides in the above materials are bound in a solid matrix and are unlikely to become airborne such that it would exceed the maximum allowable TWAEV of 5.2 mg/m^3.

Human health effects from long-term exposure include: cancer of the liver, damage to the immune and reproductory systems.

Fungi

There is essentially no fungus-free environment in our daily lives. Fugal spores are abundant in outdoor air and exposure to fungi occurs commonly in indoor environments.

Continued cleaning diligence is recommended to avoid scenarios which can support fungi growth such as water in the presence of cellulose-based surfaces. There must be a moisture or water problem to support fungal growth.

APPENDIX B

ANALYTICAL RESULTS – ASBESTOS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ON
CANADA L4Z 1Y2

PH: (905)712-5100
FAX: (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 08T307589
PROJECT NO: PR-08-043

CLIENT NAME: OAKHILL ENVIRONMENTAL

ATTENTION TO: Fil Barillaro

Bulk Asbestos*

DATE SAMPLED: Dec 01, 2008 | DATE RECEIVED: Dec 03, 2008 | DATE REPORTED: Dec 10, 2008 | SAMPLE TYPE: Other

	Unit	G / S	RDL	M22-1A 1174580	M22-1B 1174587	M22-1C 1174588	M22-2A 1174590	M22-3A 1174600	M22-4A 1174603	M22-5A 1174607	M22-5B 1174609
Bulk Asbestos*	%	0.5	0.5	NAD	NAD	NAD	50	50	25	NAD	NAD

	Unit	G / S	RDL	M22-5C 1174611	M22-6A 1174612	M22-6B 1174613	M22-6C 1174614	M22-7A 1174615	M22-7B 1174616	M22-7C 1174618	M22-8A 1174620
Bulk Asbestos*	%	0.5	0.5	NAD	NAD	NAD	NAD	NAD	NAD	NAD	45

	Unit	G / S	RDL	M22-9A 1174624	M22-9B 1174641	M22-9C 1174642	M22-10A 1174643	M22-10B 1174644	M22-10C 1174645
Bulk Asbestos*	%	0.5	0.5	NAD	NAD	NAD	NAD	NAD	NAD

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to OHSA - Reg. 278

1174580-1174588
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
NAD = No Asbestos Detected

1174590-1174600
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
Asbestos Types: Chrysotile 50.0%

1174603
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
Asbestos Types: Chrysotile 25.0%

1174607-1174618
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
NAD = No Asbestos Detected

1174620
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
Asbestos Types: Chrysotile 45.0%

1174624-1174645
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
NAD = No Asbestos Detected

Certified By: Elizabeth Rolakowska

AGAT Laboratories

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CANADA L4Z 1Y2

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FAX: (905)712-5122
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Guideline Violation

AGAT WORK ORDER: 08T307589
PROJECT NO: PR-08-043

CLIENT NAME: OAKHILL ENVIRONMENTAL

ATTENTION TO: Fil Barillaro

SAMPLE ID	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
1174590	OHSA - Reg. 278	Bulk Asbestos*	Bulk Asbestos*	0.5	50
1174600	OHSA - Reg. 278	Bulk Asbestos*	Bulk Asbestos*	0.5	50
1174603	OHSA - Reg. 278	Bulk Asbestos*	Bulk Asbestos*	0.5	25
1174620	OHSA - Reg. 278	Bulk Asbestos*	Bulk Asbestos*	0.5	45

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 08T309759
PROJECT NO: PR-08-043

CLIENT NAME: OAKHILL ENVIRONMENTAL

ATTENTION TO: Fil Barillaro

Bulk Asbestos*

DATE SAMPLED: Dec 12, 2008 | DATE RECEIVED: Dec 16, 2008 | DATE REPORTED: Dec 23, 2008 | SAMPLE TYPE: Other

	Unit	G / S	RDL	M22-11A 1189272	M22-12A 1189275	M22-12B 1189276	M22-12C 1189277	M22-12D 1189278	M22-12E 1189279	M22-12F 1189280	M22-12G 1189281
Bulk Asbestos*	%	0.5	0.5	2	NAD	NAD	NAD	NAD	NAD	NAD	NAD

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to OHSA - Reg. 278

1189272
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
Asbestos Type: Chrysotile 2.0%

1189275-1189281
Condition of samples were satisfactory at time of arrival in laboratory.
* Subcontracted parameter
NAD = No Asbestos Detected

Certified By: Jonby Takeuchi

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ON
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FAX: (905)712-5122
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Guideline Violation

AGAT WORK ORDER: 08T309759
PROJECT NO: PR-08-043

CLIENT NAME: OAKHILL ENVIRONMENTAL

ATTENTION TO: Fil Barillaro

SAMPLE ID	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
1189272	OHSA - Reg. 278	Bulk Asbestos*	Bulk Asbestos*	0.5	2

APPENDIX C

ANALYTICAL RESULTS – LEAD

AGAT Laboratories
5835 COOPERS AVENUE
MISSISSAUGA, ON
CANADA L4Z 1Y2
PH: (905)712-5100
FAX: (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 08T307593

PROJECT NO: PR-08-043

CLIENT NAME: OAKHILL ENVIRONMENTAL

ATTENTION TO: Fil Barillaro

Lead in Paint

DATE SAMPLED: Dec 01, 2008 | DATE RECEIVED: Dec 03, 2008 | DATE REPORTED: Dec 10, 2008 | SAMPLE TYPE: Other

	Unit	G / S	RDL	M22-L1 1174536	M22-L2 1174546	M22-L3 1174548	M22-L4 1174551
Lead	ug/g		10	1420	21800	7800	235000

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Elizabeth Rolakowska

APPENDIX D

PHOTOGRAPH LOGS

M-22 ASBESTOS PHOTOGRAPH LOG

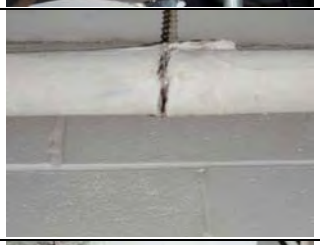
Photo #	Functional Space #	Location	Comments	Photograph
A1	B001	Room 14	DCW: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A2	B001	Room 14	DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A3	B001	Room 14	Compressed air: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A4	B003	Room 10A	Chiller: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A5	B006	Room 13	DCW: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A6	B007	Room 13A	DCW: One damaged mud joint compound fitting requires one encapsulation (1 unit).	

Photo #	Functional Space #	Location	Comments	Photograph
A8	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A9	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A10	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A11	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A12	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A13	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A14	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	

Photo #	Functional Space #	Location	Comments	Photograph
A15	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.5 LM).	
A16	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A17	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A18	B008	Storage	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A19	B008	Storage	Cond.: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM).	
A20	B008	Storage	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A21	B008	Storage	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	

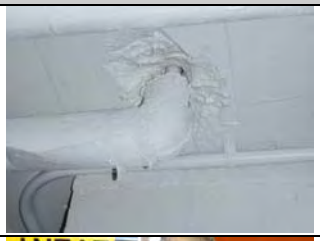
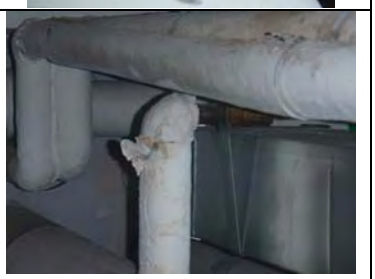
Photo #	Functional Space #	Location	Comments	Photograph
A22	B008	Storage	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A23	B010	Hall	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A24	B012	Room 6	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A25	B013	Room 3	DCW: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM).	
A26	B013	Room 3	DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM).	
A27	B013	Room 3	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	

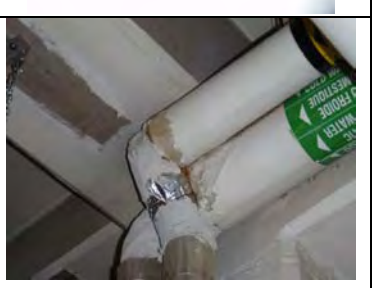
Photo #	Functional Space #	Location	Comments	Photograph
A28	B014	Room 9	Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM).	
A29	B014	Room 9	Steam: Two damaged mud joint compound fittings requires two encapsulations (2 units).	
A30	B014	Room 9	DHW: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A31	B014	Room 9	DCW: One damaged mud joint compound fitting requires one removal (1 unit).	
A32	B015	Hall	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A33	B017	Wave Room	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	

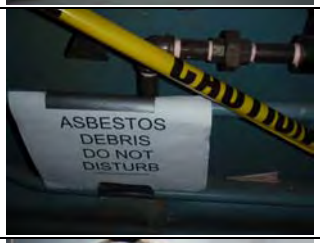
Photo #	Functional Space #	Location	Comments	Photograph
A34	B017	Wave Room	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.5 LM).	
A35	B017	Wave Room	ACM debris (aircell pipe insulation) requires clean-up (<1.0 m^2).	
A36	B017	Wave Room	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A37	B017	Wave Room	ACM debris (mud joint compound fitting insulation) requires clean-up (<1.0 m^2).	
A38	B017	Wave Room	Cond.: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM).	
A39	B017	Wave Room	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	

Photo #	Functional Space #	Location	Comments	Photograph
A40	B017	Wave Room	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A41	B017	Wave Room	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A42	1001	Room 108	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A43	1001	Room 108	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A44	1001	Room 108	Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A45	1001	Room 108	Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	

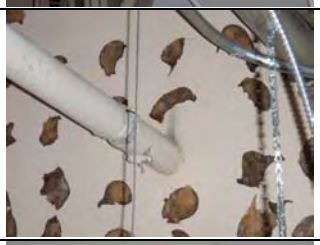
Photo #	Functional Space #	Location	Comments	Photograph
A46	1001	Room 108	Steam: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A47	1001	Room 108	Steam: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A48	1001	Room 108	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A49	1002	Room 110	Cond.: Two open ends of aircell pipe insulation require two encapsulations (0.4 LM).	
A50	1002	Room 110	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A51	1007	Room 102	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A52	1007	Room 102	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	

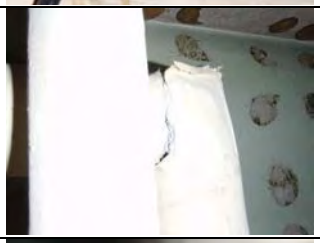
Photo #	Functional Space #	Location	Comments	Photograph
A53	1007	Room 102	Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A54	1007	Room 102	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A55	1007	Room 102	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A56	1007	Room 102	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A57	1007	Room 102	Steam: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM).	
A58	1006	Room 103	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	

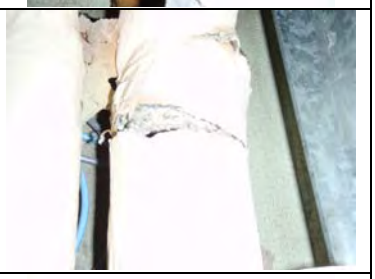
Photo #	Functional Space #	Location	Comments	Photograph
A59	1006	Room 103	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A60	1006	Room 103	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A61	1006	Room 103	Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM).	
A62	1006	Room 103	Steam: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A63	1006	Room 103	Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A64	1009	Room 101a	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	

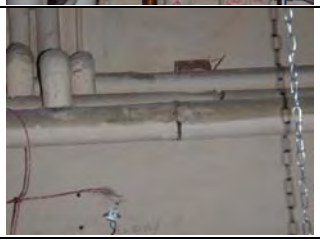
Photo #	Functional Space #	Location	Comments	Photograph
A65	1009	Room 101c	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A66	1009	Room 101c	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A67	1009	Room 101c	DHW: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A68	1009	Room 101c	DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A69	1010	Room 100	DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM). DCW: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	
A70	1010	Room 100	Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM).	

Photo #	Functional Space #	Location	Comments	Photograph
A71	1010	Room 100	Comp. air, DCW, DHW: Four damaged sections of aircell pipe insulation requires four encapsulations (0.8 LM).	
A72	1010	Room 100	Comp. air, DCW, DHW: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A73	1010	Room 100	Comp. air, Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM).	
A74	1010	Room 100	Comp. air, DCW, DHW: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A75	1010	Room 100	Comp. air: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM).	
A76	1010	Room 100	Comp. air: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A77	1010	Room 100	Comp. air,DCW, DHW: Three open ends of aircell pipe insulation require three encapsulations (0.6 LM).	

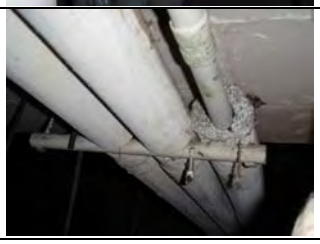
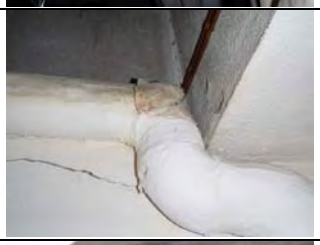
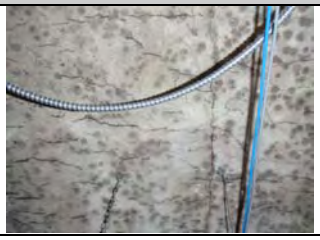
Photo #	Functional Space #	Location	Comments	Photograph
A78	1010	Room 100	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A79	1010	Room 100	Comp. air,DCW, DHW: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A80	1010	Room 100	Comp. air,DCW, DHW: Three open ends of aircell pipe insulation require three encapsulations (0.6 LM).	
A81	1010	Room 100	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A82	1010	Room 100	Comp. air, DCW, DHW: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A83	1010	Room 100	Comp. air, DCW, DHW: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A84	1010	Room 100	Steam: Two damaged mud joint compound fittings require two encapsulations (2 units).	

Photo #	Functional Space #	Location	Comments	Photograph
A85	1010	Room 100	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A86	1010	Room 100	Comp. air, DCW, DHW: Three damaged sections of aircell pipe insulation require three encapsulations (0.6 LM).	
A87	1010	Room 100	Comp. air, DCW, DHW: Three open ends of aircell pipe insulation require three encapsulations (0.6 LM).	
A88	1010	Room 100	Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A89	1017	Foyer	Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	
A90	1017	Foyer	Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	
A91	1017	Foyer	Cond.: ACM debris (aircell PI) (<1.0 m^2) requires clean-up.	

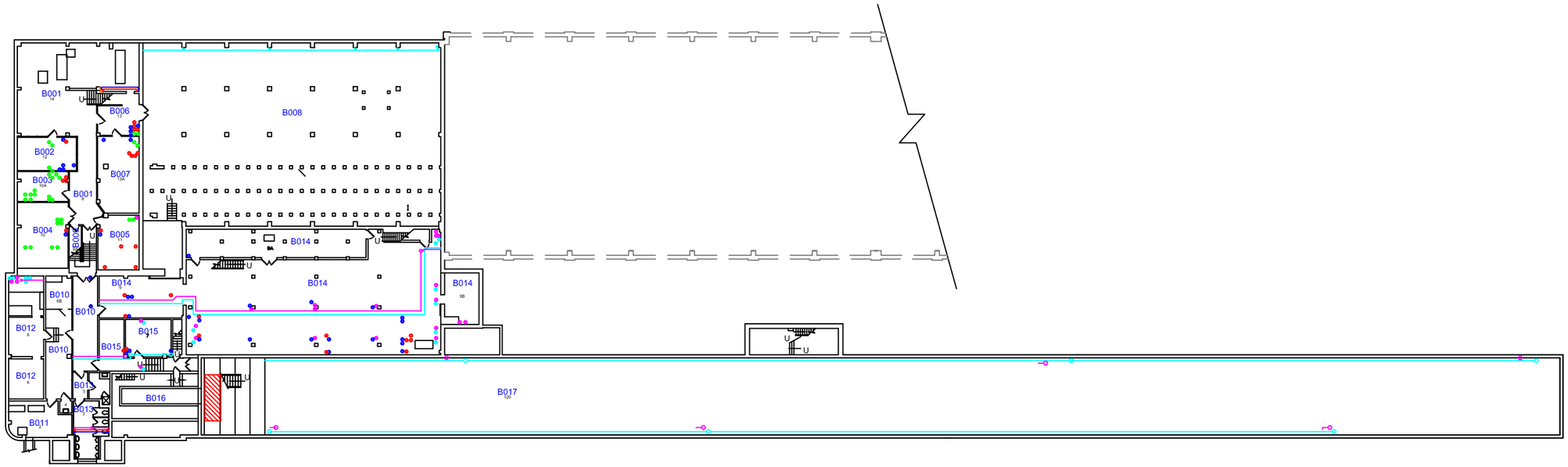
M-22 MOULD PHOTOGRAPH LOG

Photo #	Functional Space #	Location	Comments	Photograph
M1	B003	Room 10A	Suspect mould on Chiller system.	
M2	1004	Room 7a	Suspect mould on Chiller system.	
M3	1006	Room 103	Suspect mould on Chiller system.	
M4	1013	Room 104	Suspect mould on Ceiling Tile.	
M5	2002	Room 211	Suspect mould on deck	

Photo #	Functional Space #	Location	Comments	Photograph
M6	2002	Room 211	Suspect mould on deck	

APPENDIX E

FLOOR PLANS



OAKHILL
ENVIRONMENTAL

LEGEND

1001 FUNCTIONAL SPACE #

- ACM PIPE INSULATION: STEAM
- ACM PIPE INSULATION: CONDENSATE
- ACM PIPE INSULATION: DOMESTIC CW
- ACM PIPE INSULATION: DOMESTIC HW
- ACM PIPE INSULATION: COMPRESSED AIR
- ACM FITTING INSULATION: STEAM
- ACM FITTING INSULATION: CONDENSATE
- ACM FITTING INSULATION: DOMESTIC CW
- ACM FITTING INSULATION: DOMESTIC HW
- ACM FITTING INSULATION: CHILLER
- ACM FLOOR TILE

NOTE:
ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown, These systems may also have ACM on: t's, valves, ends, hangers, etc.

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ADMINISTRATIVE SERVICES
AND PROPERTY MANAGEMENT
BUILDING M-19
1200 MONTREAL RD.
OTTAWA, ON, K1A 0R6

PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

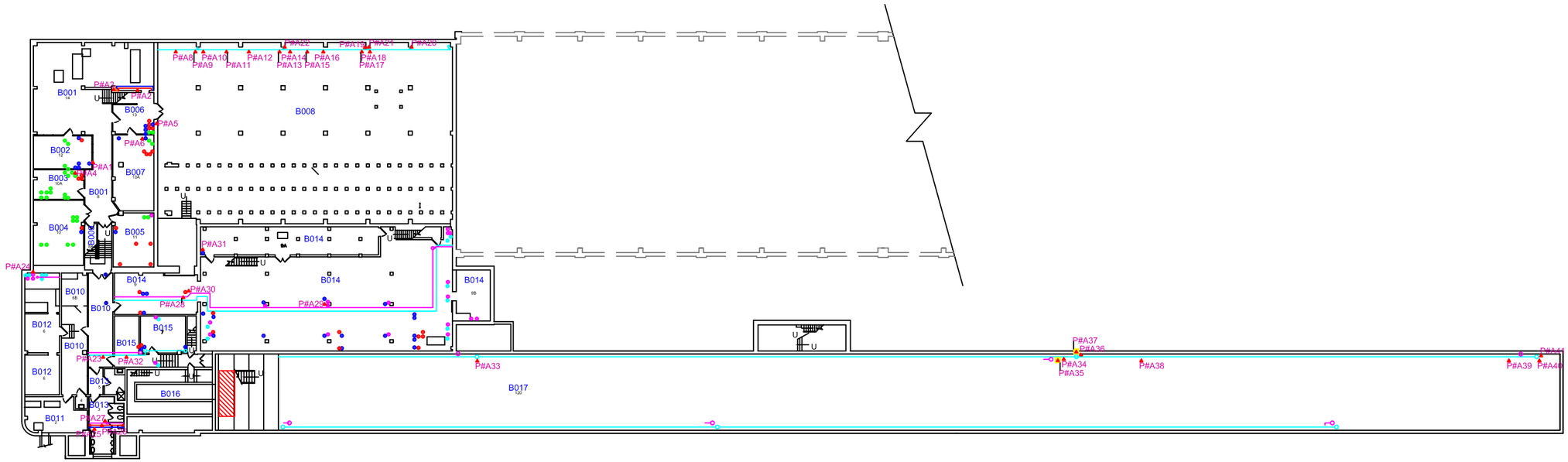
PROJECT NO.
PR-08-043

DATE
January 2009

SCALE
NTS

TITLE
-BASEMENT-
ASBESTOS
LOCATIONS

SHEET
B-1



OAKHILL
ENVIRONMENTAL

LEGEND

- 1001 FUNCTIONAL SPACE #
- ACM PIPE INSULATION: STEAM
- ACM PIPE INSULATION: CONDENSATE
- ACM PIPE INSULATION: DOMESTIC CW
- ACM PIPE INSULATION: DOMESTIC HW
- ACM PIPE INSULATION: COMPRESSED AIR
- ACM FITTING INSULATION: STEAM
- ACM FITTING INSULATION: CONDENSATE
- ACM FITTING INSULATION: DOMESTIC CW
- ACM FITTING INSULATION: DOMESTIC HW
- ACM FITTING INSULATION: CHILLER
- ACM FLOOR TILE
- DAMAGED ACM LOCATION
- P# PHOTOGRAPH #
- ACM DEBRIS

NOTE:
ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown. These systems may also have ACM on: t's, valves, ends, hangers, etc.

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PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

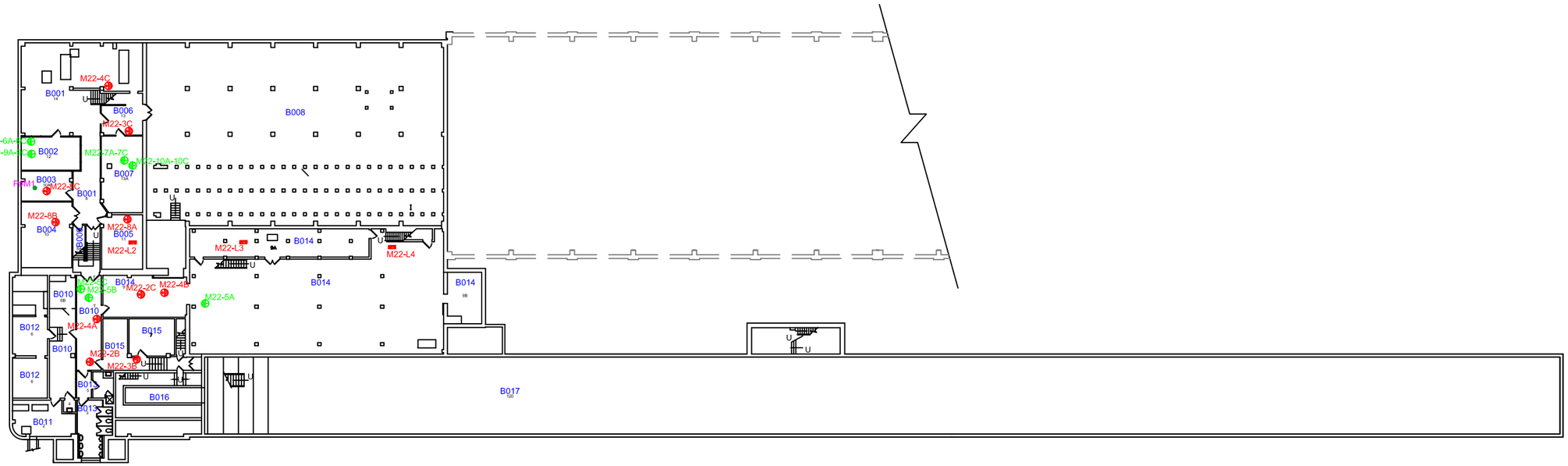
PROJECT NO.
PR-08-043

DATE
January 2009

SCALE
NTS

TITLE
-BASEMENT- ASBESTOS SURVEY

SHEET
B-2



OAKHILL
ENVIRONMENTAL

LEGEND

1001 FUNCTIONAL SPACE #

SAMPLE LOCATION: NON-ACM

SAMPLE LOCATION: ACM

SUSPECT MOULD LOCATIONS

P# PHOTOGRAPH #

ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown. These systems may also have ACM on: t's, valves, ends, hangers, etc.

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PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

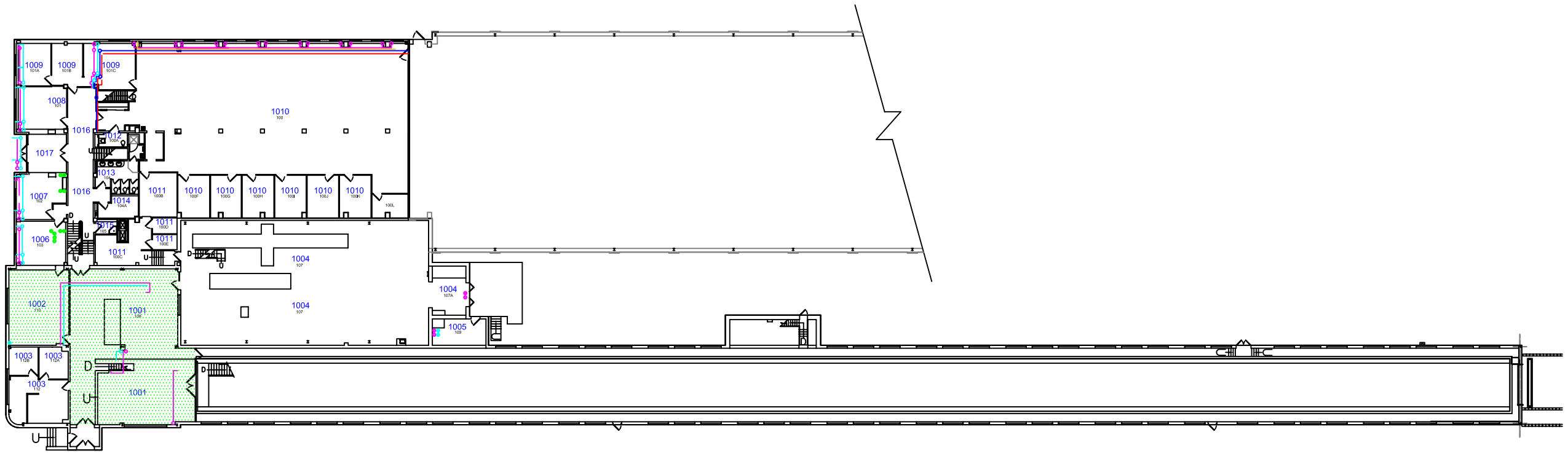
PROJECT NO.
PR-08-043

DATE
January 2009

SCALE
NTS

TITLE
-BASEMENT- SAMPLE LOCATIONS & MOULD LOCATIONS

SHEET
B-3



OAKHILL
ENVIRONMENTAL

LEGEND

1001 FUNCTIONAL SPACE #

ACM PIPE INSULATION: STEAM

ACM PIPE INSULATION: CONDENSATE

ACM PIPE INSULATION: DOMESTIC CW

ACM PIPE INSULATION: DOMESTIC HW

ACM PIPE INSULATION: COMPRESSED AIR

ACM FITTING INSULATION: STEAM

ACM FITTING INSULATION: CONDENSATE

ACM FITTING INSULATION: CHILLER

ACM FLOOR TILE

NOTE:
ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown. These systems may also have ACM on: t's, valves, ends, hangers, etc.

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PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

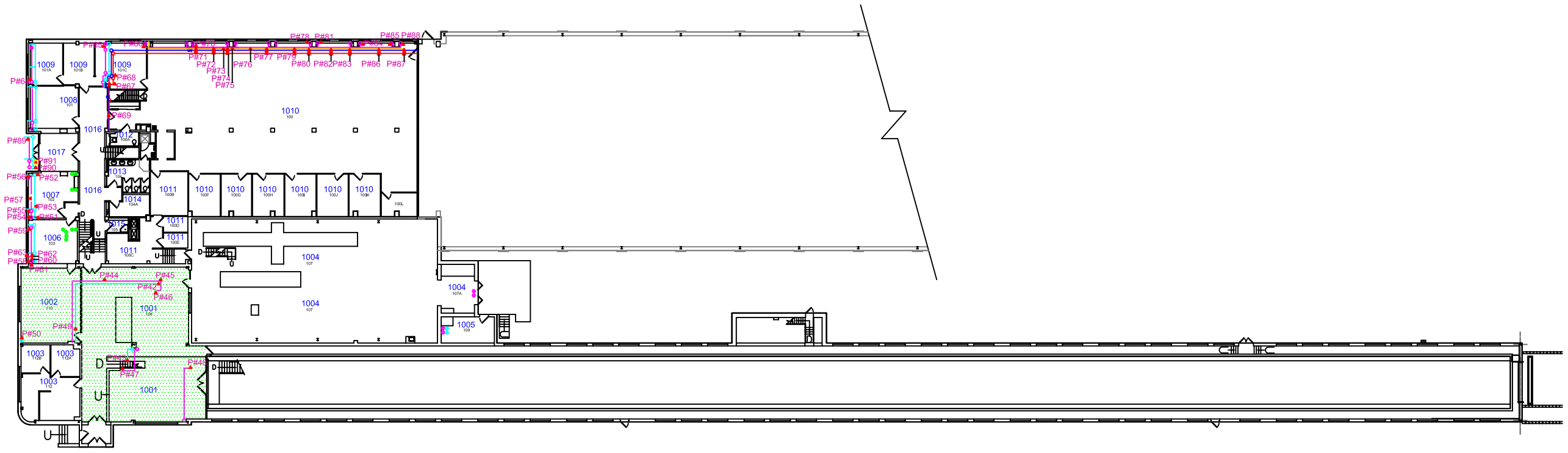
PROJECT NO.
PR-08-043

DATE
January 2009

SCALE
NTS

TITLE
-FIRST FLOOR- ASBESTOS LOCATIONS

SHEET
1-1



OAKHILL ENVIRONMENTAL

LEGEND

- 1001 FUNCTIONAL SPACE #
- ACM PIPE INSULATION: STEAM
- ACM PIPE INSULATION: CONDENSATE
- ACM PIPE INSULATION: DOMESTIC CW
- ACM PIPE INSULATION: DOMESTIC HW
- ACM PIPE INSULATION: COMPRESSED AIR
- ACM FITTING INSULATION: STEAM
- ACM FITTING INSULATION: CONDENSATE
- ACM FITTING INSULATION: CHILLER
- DAMAGED ACM LOCATION
- P# PHOTOGRAPH #
- ACM DEBRIS
- ACM FLOOR TILE

NOTE:
ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown. These systems may also have ACM on: t's, valves, ends, hangers, etc.

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PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

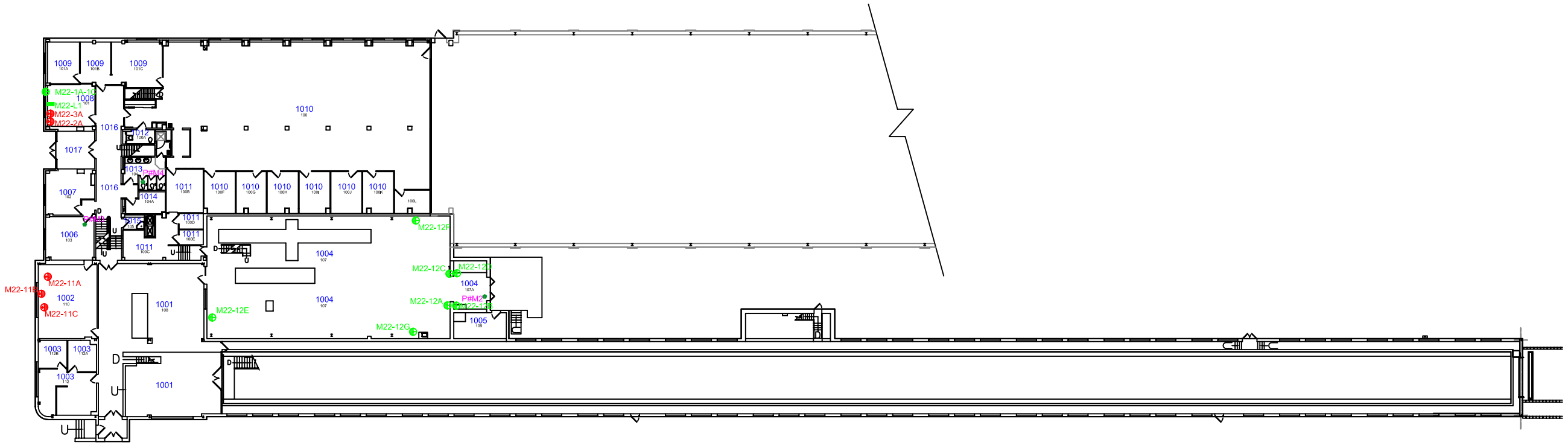
PROJECT NO.
PR-08-043

DATE
January 2009

SCALE
NTS

TITLE
-FIRST FLOOR- ASBESTOS SURVEY

SHEET
1-2



OAKHILL ENVIRONMENTAL

LEGEND

1001 FUNCTIONAL SPACE #

SAMPLE LOCATION: NON-ACM

SAMPLE LOCATION: ACM

SUSPECT MOULD LOCATIONS

P# PHOTOGRAPH #

ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown. These systems may also have ACM on: t's, valves, ends, hangers, etc.

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OTTAWA, ON, K1A 0R6

PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

PROJECT NO.

PR-08-043

DATE

January 2009

SCALE

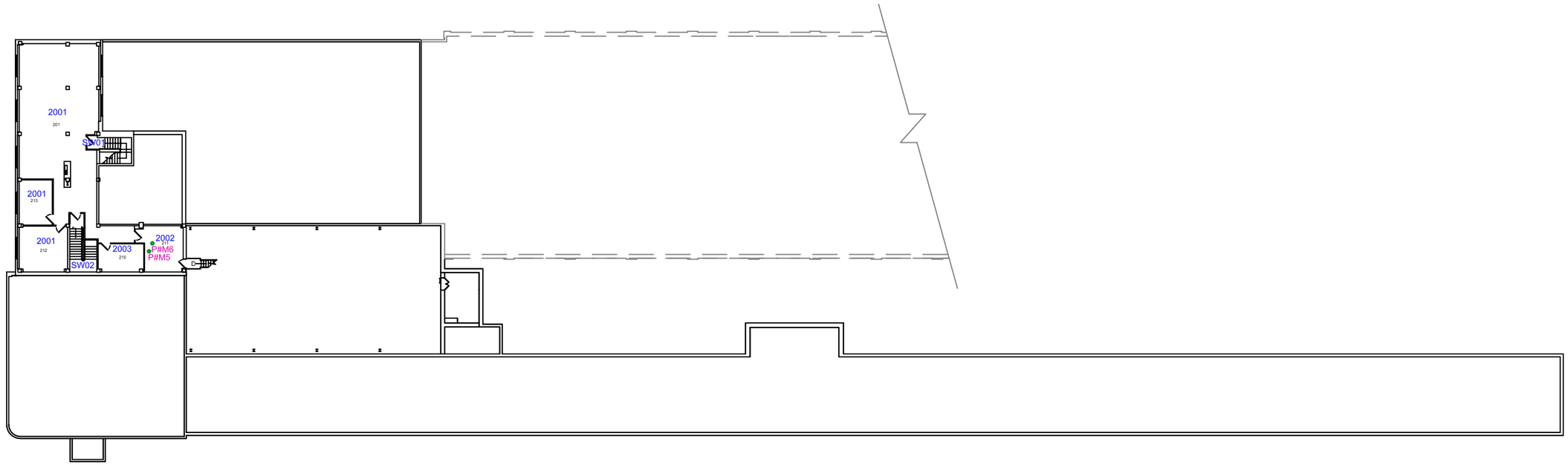
NTS

TITLE

-FIRST FLOOR- SAMPLE LOCATIONS & MOULD LOCATIONS

SHEET

1-3



OAKHILL
ENVIRONMENTAL

LEGEND

1001 FUNCTIONAL SPACE #

SUSPECT MOULD LOCATIONS

P# PHOTOGRAPH #

ACM fitting insulation locations are shown only on systems where NON-ACM pipe insulation was found. ONLY ACM ELBOWS are shown. These systems may also have ACM on: t's, valves, ends, hangers, etc.

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PROJECT

DESIGNATED SUBSTANCES SURVEY
BUILDING M-22

PROJECT NO.
PR-08-043

DATE
January 2009

SCALE
NTS

TITLE
-SECOND FLOOR-
ASBESTOS SURVEY & MOULD LOCATIONS

SHEET
2-1

APPENDIX F

FUNCTIONAL SPACE FORMS

Building ID: M-22	Notes: 1)The above ceiling space of FSF B002 is included in FSF B001. 2) DCW: One damaged mud joint compound fitting requires one encapsulation (1 unit). 3) DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM). 4) Compressed air: One open end of aircell pipe insulation requires one encapsulation (0.2 LM). 5) From information on the as-built drawings and in-room observations, a former DHW line was converted to supply compressed air. Sections are still insulated with aircell pipe insulation. 6) Sample M22-4c was collected here.	Functional Space (FS #): B001
Date: Dec. 2, 2008		Location: Rooms 14 & 8
Project #: PR-08-043		Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete Block	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	4 units	G	B	O & M	B-1	--
	--	FG PI with aluminium casing	DCW	N	--	--	--	--	--	--	--	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	7 units	G	B	O & M	B-1	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	1 unit	F	B	1 encapsulation	B-2	A1
	2	Aircell PI	DCW	Y	Y	50% Chrysotile	4 LM	G	B	O & M	B-1	--
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	5	FG PI with orange jacket	DHW	N	--	NAD	--	--	--	--	--	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	6 LM	G	B	O & M	B-1	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	0.2 LM	F	B	1 encapsulation	B-2	A2
	3	MJC FI	DHW	Y	Y	50% Chrysotile	7 units	G	B	O & M	B-1	--
	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Comp. air	Y	Y	50% Chrysotile	1 LM	G	B	O & M	B-1	--
	2	Aircell PI	Comp. air	Y	Y	50% Chrysotile	0.2 LM	G	B	1 encapsulation	B-2	A3

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) The above ceiling space of FSF B002 is included in FSF B001. 2) No ACM's were observed during the survey. 3) Samples M22-6a-6c and M22-9a-9c were collected here.	Functional Space (FS #): B002 Location: Room 12 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Wall	--	Drywall panel	Wall	N	--	--	--	--	--	--	--	--
Ceiling	9	12" x 12" CT (uniform hole)	Ceiling	N	--	NAD	--	--	--	--	--	--
Above Ceiling	--	Wood panel	Deck	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) Chiller: One damaged mud joint compound fitting requires one encapsulation (1 unit). 2) Suspect mould was observed on chiller system in one location. 3) Sample M22-8c was collected here.	Functional Space (FS #): B003 Location: Room 10A Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Wall	--	Drywall panel	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	7	12" x 12" CT (deep divot pattern)	Ceiling	N	--	NAD	--	--	--	--	--	--
Above Ceiling	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	13 units	G	C	O & M	B-1	
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	1 unit	F	C	1 encapsulation	B-2	A4
	--	Metal	Duct	N	--	--	--	--	--	--	--	--
	--	FG	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DHW	N	--	--	--	--	--	--	--	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	3 units	G	C	O & M	B-1	--
	--	Suspect mould	Chiller	--	--	--	--	--	--	1 location	B-3	M1
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) All ACM's were observed to be in good condition during the survey. 2) Sample M22-8b was collected here.	Functional Space (FS #): B004 Location: Room 10 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall panel	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	FG FI	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	8 units	G	B	O & M	B-1	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	1 unit	G	B	O & M	B-1	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	1 unit	G	B	O & M	B-1	--
	--	Metal	Duct	N	--	--	--	--	--	--	--	--
	--	FG	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DHW	N	--	--	--	--	--	--	--	--
	--	FG FI	DHW	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DCW	N	--	--	--	--	--	--	--	--
	--	FG FI	DCW	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) All ACM's were observed to be in good condition during the survey. 2) Samples M22-8a and M22-L2 were collected here	Functional Space (FS #): B005 Location: Room 11 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	MDF panel	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--		--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	1 unit	G	B	O & M	B-1	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	2 units	G	B	O & M	B-1	--
	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DHW	N	--	--	--	--	--	--	--	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	5 units	G	B	O & M	B-1	--
	--	FG PI & FI	City water	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DCW	N	--	--	--	--	--	--	--	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	1 unit	G	B	O & M	B-1	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) DCW: One damaged mud joint compound fitting requires one encapsulation (1 unit). 2) Sample M22-3c was collected here.	Functional Space (FS #): B006 Location: Room 13 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall panel	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Metal Deck	Deck	N	--	--	--	--	--	--	--	--
	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	2 units	G	C	O & M	B-1	--
	--	FG PI	DHW	N	--	--	--	--	--	--	--	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	5 units	G	C	O & M	B-1	--
	--	FG PI with aluminium casing	DCW	N	--	--	--	--	--	--	--	--
	4	MJC FI	DCW	Y	Y	50% Chrysotile	3 units	G	C	O & M	B-1	--
	4	MJC FI	DCW	Y	Y	50% Chrysotile	1 unit	F	C	1 encapsulation	B-2	A5
Below Ceiling	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) DCW: One damaged mud joint compound fitting requires one encapsulation (1 unit). 2) Samples M22-7a-7c and M22-10a-10c were collected here.	Functional Space (FS #): B007 Location: Room 13A Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	NAD	--	--	--	--	--	--
Ceiling	7	12" x 12" CT (deep divot pattern)	Ceiling	N	--	NAD	--	--	--	--	--	--
Above Ceiling	--	Metal Deck	Deck	N	--	--	--	--	--	--	--	--
	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	2 units	G	C	O & M	B-1	--
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DCW	N	--	--	--	--	--	--	--	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	1 unit	G	C	O & M	B-1	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	1 unit	F	C	1 encapsulation	B-2	A6
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	5 units	G	C	O & M	B-1	--
	--	FG duct	Duct	N	--	--	--	--	--	--	--	--
	10	Spray on insulation	N	--	--	NAD	--	--	--	--	--	--
	10	ACM debris (spray on insulation)	N	--	--	NAD	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 2, 2008 Project #: PR-08-043	Notes: 1) Cond.: Eleven damaged sections of aircell pipe insulation requires eleven encapsulations (2.5 LM). 2) Cond.: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM). 3) Cond.: Three damaged mud joint compound fittings require three encapsulation (3 units).	Functional Space (FS #): B008 Location: Storage room beneath room 100 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
	--	Metal	Ceiling	N	--	--	--	--	--	--	--	--
	10	Spray on insulation	Ceiling	N	--	NAD	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	31 LM	G	C	O & M	B-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	2.9 LM	F	C	13 encapsulations	B-2	A8, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	8 units	G	C	O & M	B-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	3 units	F	C	3 encapsulations	B-2	A20, A21, A22
	--	FG PI with aluminium casing	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey. 2) No access above soild ceiling.	Functional Space (FS #): B009 Location: Room 8A Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	MDF panel	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM). 2) Samples M22-2b, M22-4a and M22-5b, 5c were collected here. 3) No access above soild ceiling.	Functional Space (FS #): B010 Location: Rooms 6b & hall Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Walls	--	Drywall panel	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
	--	FG panel	Ceiling	N	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	5	FG PI with orange jacketing	Cond.	N	--	NAD	--	--	--	--	--	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	3 LM	G	B	O & M	B-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	0.2 LM	F	B	1 encapsulation	B-2	A23
	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	5	FG PI with orange jacketing	Steam	N	--	NAD	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	3 LM	G	B	O & M	B-1	--
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	5	FG PI with orange jacketing	DHW	N	--	NAD	--	--	--	--	--	--
	--	FG PI & FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	5	FG PI with orange jacketing	DCW	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	Tower water	N	--	--	--	--	--	--	--	--
	4	MJC FI	Tower water	Y	Y	25% Chrysotile	2 units	G	B	O & M	B-1	--
	--	Metal duct	Duct	N	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey. 2) No access above soild ceiling.	Functional Space (FS #): B011 Location: Rooms 2 & 4 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Walls	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
	--	FG panel	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit). 2) No access above soild ceiling.	Functional Space (FS #): B012 Location: Room 6 Electrical rooms Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Wall	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI	Cond.	N	--	--	--	--	--	--	--	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	5 units	G	B	O & M	B-1	--
	--	FG PI	Steam	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	3 LM	G	B	O & M	B-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	5 units	G	B	O & M	B-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	1 unit	F	B	1 encapsulation	B-2	A24

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) DCW: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM). 2) DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM). 3) Steam: One damaged mud joint compound fitting requires one encapsulation (1 unit).	Functional Space (FS #): B013 Location: Rooms 3 & 5 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	1" x 1" FT (ceramic)	Floor	N	--	--	--	--	--	--	--	--
	--	12" x 12" FT (ceramic)	Floor	N	--	--	--	--	--	--	--	--
	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Walls	--	4" x 4" Wall Tile (ceramic)	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	2	Aircell PI	DCW	Y	Y	50% Chrysotile	5 LM	G	C	O & M	B-1	--
	2	Aircell PI	DCW	Y	Y	50% Chrysotile	0.4 LM	F	C	1 encapsulation	B-2	A25
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	5 LM	G	C	O & M	B-1	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	0.4 LM	F	C	1 encapsulation	B-2	A26
	4	MJC FI	DCW	Y	Y	25% Chrysotile	4 units	G	C	O & M	B-1	--
	3	MJC FI	DHW	Y	Y	25% Chrysotile	4 units	G	C	O & M	B-1	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	4 LM	G	C	O & M	B-1	
	3	MJC FI	Steam	Y	Y	50% Chrysotile	1 unit	F	C	1 encapsulation	B-2	A27
Below Ceiling	--	Metal	Sewer	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM). 2) Steam: Two damaged mud joint compound fittings requires two encapsulations (2 units). 3) DHW: One damaged mud joint compound fitting requires one encapsulation (1 unit). 4) DCW: One damaged mud joint compound fitting requires one removal (1 unit). 5) Samples M22-L3, M22-L4, M22-2c, M22-4b and M22-5a were collected here. 6) No access above soild ceiling.	Functional Space (FS #): B014 Location: Rooms 9, 9a, 9b & Storage room Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
	--	Metal	Ceiling	N	--	--	--	--	--	--	--	--
	--	Wood	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	43 LM	G	C	O & M	B-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	15 units	G	C	O & M	B-1	--
	--	FG PI	Cond.	N	--	--	--	--	--	--	--	--
	2	Aircell PI	LPS	Y	Y	50% Chrysotile	43 LM	G	C	O & M	B-1	--
	2	Aircell PI	LPS	Y	Y	50% Chrysotile	0.4 LM	F	C	1 encapsulation	B-2	A28
	3	MJC FI	LPS	Y	Y	50% Chrysotile	22 units	G	C	O & M	B-1	--
	3	MJC FI	LPS	Y	Y	50% Chrysotile	2 units	F	C	2 encapsulations	B-2	A29
	5	FG PI with orange jacketing	DHW	N	--	NAD	--	--	--	--	--	--
	--	FG PI	DHW	N	--	--	--	--		--	--	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	15 units	G	C	O & M	B-1	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	1 unit	F	C	1 encapsulation	B-2	A30
	--	FG PI & FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	FG PI	DCW	N	--	--	--	--	--	--	--	--
	--	FG PI with aluminium casing	DCW	N	--	--	--	--	--	--	--	--
	5	FG PI with orange jacketing	DCW	N	--	--	NAD	--	--	--	--	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	32 units	G	C	O & M	B-1	
	4	MJC FI	DCW	Y	Y	25% Chrysotile	1 unit	F	C	1 removal	B-2	A31

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) The orange jacket pipe insulation on the steam and condensate systems that enter room 7 are painted white. 2) Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit). 3) No access above soild ceiling. 4) Sample M22-3b were collected here.	Functional Space (FS #): B015 Location: Room 7 and hall Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
	--	Wood	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	9 LM	G	B	O & M	B-1	--
	5	FG PI with orange jacket	Cond.	N	--	NAD	--	--	--	--	--	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	7 units	G	B	O & M	B-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	1 unit	F	B	1 encapsulation	B-2	A32
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	3 LM	G	B	O & M	B-1	--
	5	FG PI with orange jacket	Steam	N	--	NAD	--	--	--	--	--	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	5 units	G	B	O & M	B-1	--
	--	FG PI	DCW	N	--	--	--	--	--	--	--	--
	4	MJC FI	DCW	Y	Y	25% Chrysotile	3 units	G	B	O & M	B-1	--
	--	FG PI	DHW	N	--	--	--	--	--	--	--	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	2 units	G	B	O & M	B-1	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 3, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey. 2) No access above soild ceiling.	Functional Space (FS #): B016 Location: Unkown room, walkway and basins Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Wall	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Wood	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22	Notes:Cond.: 1) Cond.: Six open ends of aircell pipe insulation requires six encapsulations (1.2 LM). 2) Cond.: One damaged section of aircell pipe insulation requires one encapsulation (0.5 LM).	Functional Space (FS #): B017
Date: Dec. 3, 2008	3) Cond.: ACM debris (aircell pipe insulation) requires clean-up (<1.0 m2). 4) Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit).	Location: Former wave room
	5) Cond.: ACM debris (mud joint compound fitting) requires clean-up (<1.0 m2).	
Project #: PR-08-043	6) No access above soild ceiling.	Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
	--	9" x 9" FT (beige)	Floor	Y	Y	Suspect ACM	7.5 M^2	G	C	O & M	B-1	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	2	Aircell PI	Cond.	Y	Y	50% chrysotile	266 LM	G	C	O & M	B-1	--
	3	MJC FI	Cond.	Y	Y	50% chrysotile	8 units	G	C	O & M	B-1	--
	2	Aircell PI	Steam	Y	Y	50% chrysotile	21 LM	G	C	O & M	B-1	--
	3	MJC FI	Steam	Y	Y	50% chrysotile	20 units	G	C	O & M	B-1	--
	2	Aircell PI	Cond.	Y	Y	50% chrysotile	1.7 LM	F	C	7 encapsulations	B-2	A33, A34, A38, A39, A40, A41
	3	MJC FI	Cond.	Y	Y	50% chrysotile	1 unit	F	C	1 encapsulation	B-2	A36
	2	ACM debris (Aircell)	Cond.	Y	Y	50% chrysotile	<1.0 m2	F	C	clean-up	B-2	A35
	3	ACM debris (MJC)	Cond.	Y	Y	50% chrysotile	<1.0 m2	F	C	clean-up	B-2	A37
	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) Observations made from floor level, unable to reach without use of lift. 2) Cond.: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM). 3) Steam: Two damaged sections of aircell pipe insulation requires two encapsulations (0.4 LM). 4) Steam: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM). 5) Steam: One damaged mud joint compound fitting require one encapsulation (1 unit).	Functional Space (FS #): 1001 Location: Room 108 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	12" x 12" FT (white with tan)	Floor	N	--	--	--	--	--	Post 1986	--	--
	11	12" x 12" FT (tan)	Floor	Y	N	2% Chrysotile	189 m2	G	B	O & M	1-1	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	15 LM	G	B	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	0.4 LM	F	B	2 encapsulations	1-2	A42, A43
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	2 units	G	B	O & M	1-1	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	25 LM	G	B	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	10 units	G	B	O & M	1-1	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	0.8 LM	F	B	4 encapsulations	1-2	A44, A45, A46, A47
	3	MJC FI	Steam	Y	Y	50% Chrysotile	1 unit	G	B	1 encapsultion	1-2	A48

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) Cond.: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM). 2) Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit). 3) Samples M22-11a-11c were collected here.	Functional Space (FS #): 1002 Location: Room 110 Lunch area Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	11	12" x 12" FT (tan with brown)	Floor	Y	N	2 % Chrysotile	46 m^2	G	B	O & M	1-1	--
Walls	--	Drywall panel	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Wall	N	--	NAD	--	--	--	--	--	--
	--	FG PI & PVC FI	Chiller	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	8 LM	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	1 unit	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	8 LM	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	0.4 LM	F	C	2 encapsulations	1-2	A49
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	1 unit	G	C	O & M	1-1	--
	--	FG PI & FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
Below Ceiling	3	MJC FI	Cond.	Y	Y	50% Chrysotile	1 unit	F	C	1 encapsulation	1-2	A50

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): 1003 Location: Rooms 112, 112a & 112b Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	12" x 12" FT (white with tan)	Floor	N	--	--	--	--	--	Post 1986	--	
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	12	Plaster (bottom layer)	Deck	N	--	NAD	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Wall	N	--	NAD	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) Suspect mould in 1 location on the chiller system. 2) All ACM's were observed to be in good condition during the survey. 3) Samples M22-12a - 12g were collected here. 4) No access above soild ceiling.	Functional Space (FS #): 1004 Location: Rooms 107, 107a Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
	--	Metal	Floor	N	--	--	--	--	--	--	--	--
	--	12" x 12" FT (tan)	Floor	N	--	--	--	--	--	Post 1986	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	12	Plaster	Wall	N	--	NAD	--	--	--	--	--	--
Ceiling	--	Concrete	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI & FI	Drain	N	--	--	--	--	--	--	--	--
	--	FG PI & FI with aluminium casing	LPS	N	--	--	--	--	--	--	--	--
	--	FG PI & FI with aluminium casing	Steam	N	--	--	--	--	--	--	--	--
	--	FG PI & FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	Suspect mould	Chiller	N	--	--	--	--	--	2 locations	1-3	M2
	3	MJC FI	Steam	Y	Y	50% Chrysotile	2 units	G	C	O & M	1-1	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) All ACM's were observed to be in good condition during the survey. 2) No access above soild ceiling.	Functional Space (FS #): 1005 Location: Room 109 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Concrete	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
	--	Stucco finish	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	Concrete panel	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	FG PI	Steam	N	--	--	--	--	--	--	--	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	2 units	G	C	O & M	1-1	--
	--	FG PI	Cond.	N	--	--	--	--	--	--	--	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	2 units	G	C	O & M	1-1	--
	--	Metal	Duct	N	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) Floor tile located under the carpet. 2) Suspect mould on chiller elbows at 3 locations. 3) Steam: Three damaged mud joint compound fittings requires three encapsulations (3 units). 4) Steam: Two damaged sections of aircell pipe insulation requires two encapsulations (0.6 LM). 5) Steam: One open end of aircell pipe insulation requires one encapsulation (0.2 LM).	Functional Space (FS #): 1006 Location: Room 103 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	--	--	--	--	--	--	--	--	--
	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	1	Adhesive Puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
	--	FG PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	8 units	G	C	O & M	1-1	--
	--	Suspect mould	Chiller	N	--	--	--	--	--	3 locations	1-2	M3
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	4 LM	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	2 unit	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	8 LM	G	C	O & M	1-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	5 units	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	3 units	F	C	3 encapsulations	1-2	A58, A59, A60
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	0.8 LM	F	C	3 encapsulations	1-2	A61, A62, A63
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) Cond.: Two damaged mud joint compound fittings requires two encapsulations (2 units). 2) Cond.: One damaged section of aircell pipe insulation requires one encapsulations (0.2 LM). 3) Steam: Three damaged mud joint compound fittings requires three encapsulations (3 units). 4) Steam: Two open ends of aircell pipe insulation requires two encapsulations (0.4 LM).	Functional Space (FS #): 1007 Location: Room 102 Lunch room Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	1	Adhesive Puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	5 LM	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	3 units	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	8 LM	G	C	O & M	1-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	3 units	G	C	O & M	1-1	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	2 unit	F	C	2 encapsulations	1-2	A51, A52
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	0.2 LM	F	C	1 encapsulation	1-2	A53
	3	MJC FI	Steam	Y	Y	50% Chrysotile	3 units	F	C	3 encapsulations	1-2	A54, A55, A56
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	0.4 LM	F	C	2 encapsulations	1-2	A57
		FG PI & FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	8	MJC FI	Chiller	Y	Y	45% Chrysotile	4 units	G	C	O & M	1-1	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 4, 2008 Project #: PR-08-043	Notes: 1) No access under the carpet. 2) All ACM's were observed to be in good condition during the survey. 3) Samples M22-1a-1c, M22-2a, M22-3a were collected here. 4) Lead sample M22-L1 was collected here.	Functional Space (FS #): 1008 Location: Room 101 Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	1	Adhesive Puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	9 LM	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	4 units	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	8 LM	G	C	O & M	1-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	4 units	G	C	O & M	1-1	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 5, 2008 Project #: PR-08-043	Notes: 1) No access to area under the carpet. 2) Steam: Three damaged mud joint compound fittings requires three encapsulations (3 units). 3) DHW: One damaged mud joint compound fitting requires one encapsulation (1 unit). 4) DHW: One damaged section of aircell pipe insulation requires one encapsulation (0.2 LM).	Functional Space (FS #): 1009 Location: Rooms 101a, 101b, 101c Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	9	12" x 12" CT (uniform hole)	Deck	N	--	NAD	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	15 LM	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	7 units	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	15 LM	G	C	O & M	1-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	15 units	G	C	O & M	1-1	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	3 units	F	C	3 encapsulations	1-2	A64, A65, A66
	2	Aircell PI	DCW	Y	Y	50% Chrysotile	9 LM	G	C	O & M	1-1	--
	4	MJC FI	DCW	Y	Y	50% Chrysotile	5 units	G	C	O & M	1-1	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	9 LM	G	C	O & M	1-1	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	5 units	G	C	O & M	1-1	--
	3	MJC FI	DHW	Y	Y	50% Chrysotile	1 unit	F	C	1 encapsulation	1-2	A67
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	0.2 LM	F	C	1 encapsulation	1-2	A68
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 5, 2008 Project #: PR-08-043	Notes: 1) Steam: One damaged section of aircell pipe insulation requires one encapsulation (0.4 LM). 2) Steam: Six damaged mud joint compound fittings requires six encapsulations (6 units).	Functional Space (FS #): 1010 Page 1 of 2 Location: Rooms 100, 100f, 100g, 100h, 100i, 100j, 100k, Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	Post 1986	--	--
	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Cloth partition panel	Wall	N	--	--	--	--	--	--	--	--
	--	Glass panel	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	9	12" x 12" CT (uniform hole)	Deck	N	--	NAD	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	HWH	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	27 LM	G	C	O & M	1-1	
	3	MJC FI	Steam	Y	Y	50% Chrysotile	30 units	G	C	O & M	1-1	
	--	FG PI & FI with aluminium casing	Steam	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	0.4 LM	F	C	1 encapsulation	1-2	A70
	3	MJC FI	Steam	Y	Y	50% Chrysotile	6 units	F	C	6 encapsulations	1-2	A78, A81, A84, A85, A88

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22	Notes:	Functional Space (FS #): 1010
	3) DHW: Nine damaged sections of aircell pipe insulation requires nine encapsulations 1.8 LM).	
	4) DCW: Eight damaged sections of aircell pipe insulation requires eight encapsulations (1.8 LM).	
Date: Dec. 5, 2008	5) Comp. air: Ten damaged sections of aircell pipe insulation requires ten encapsulations (2.2 LM).	Location: Rooms 100, 100f, 100g, 100h, 100i, 100j, 100k,
	6) Comp. air: Five open ends of aircell pipe insulation requires fiv encapsulations (1 LM).	
	7) DCW: Three open ends of aircell pipe insulation requires three encapsulations (0.6 LM).	
Project #: PR-08-043	8) DHW: Three open ends of aircell pipe insulation requires three encapsulations (0.6 LM).	Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Above Ceiling	--	FG PI & FI	DCW	N	--	--	--	--	--	--	--	--
	2	Aircell PI	DCW	Y	Y	50% Chrysotile	25 LM	G	C	O & M	1-1	--
	2	Aircell PI	DCW	Y	Y	50% Chrysotile	2.2 LM	F	C	11 encapsulations	1-2	A69, A71, A72, A74, A77, A79, A80, A82, A83, A86, A87
	--	FG PI & FI	DHW	N	--	--	--	--	--	--	--	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	25 LM	G	C	O & M	1-1	--
	2	Aircell PI	DHW	Y	Y	50% Chrysotile	2.6 LM	F	C	12 encapsulations	1-2	A69, A71, A72, A74, A77, A79, A80, A82, A83, A86, A87
	2	Aircell PI	Comp. air	Y	Y	50% Chrysotile	21 LM	G	C	O & M	1-1	--
	2	Aircell PI	Comp. air	Y	Y	50% Chrysotile	3.4 LM	F	C	15 encapsulations	1-2	A71, A72, A73, A74, A75, A76, A77, A79, A80, A82, A83, A86, A87
	3	MJC FI	Comp. air	Y	Y	50% Chrysotile	1 unit	G	C	O & M	1-1	--
	--	Horsehair PI & FI	Drain	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 9, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): 1011 Location: Rooms 100B, 100C, 100D, 100E Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
	--	12" x 12" FT (off white)	Floor	N	--	--	--	--	--	Post 1986	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Glass panel	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
	--	Glass panel	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	HWH	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec.9, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): 1012 Location: Rooms 100A Wheelchair WC Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	9" x 9" ceramic tile	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
	--	Drywall	Ceiling	N	--	--	--	--	--	--	--	--
Above Ceiling	--	Metal	Deck	N	--	--	--	--	--	--	--	--
	--	Concrete Block	Wall	N	--	--	--	--	--	--	--	--
	--	Metal	Duct	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 9, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey. 2) Suspect mould was observed on the ceiling tile in one location.	Functional Space (FS #): 1013 Location: Room 104 Womans WC Inspector (s): SB & RT

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	9" x 9" ceramic tile	Floor	N	--	--	--	--	--	--	--	--
	--	2" x 2" ceramic tile	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	2" x 2" ceramic tile	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Metal	Duct	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Steam	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	--	Suspect Mould	CT	N	--	--	--	--	--	1 location	1-3	M4
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22

Date: Dec. 5, 2008

Project #: PR-08-043

Notes:
1) No ACM's were observed during the survey.

Functional Space (FS #): 1014

Location: Room 104a

Inspector (s): SB & RT

Building Materials:				ACM Assessment:							Report Reference:	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Walls												
	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--
Above Ceiling	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	LPS	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 9, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): 1015 Location: Room 105 Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	9" x 9" ceramic tile	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Cement	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Metal	Duct	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): 1016 Location: Hallway Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
	--	Terrazo	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Metal	Duct	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	LPS	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Cond.	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) Cond.: One open end of aircell pipe insulation requires one encapsulation (0.2 LM). 2) Cond.: One damaged mud joint compound fitting requires one encapsulation (1 unit). 3) Cond.: ACM debris (aircell pipe insulation) requires clean-up (<1.0 m2) .	Functional Space (FS #): 1017 Location: Foyer Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Rubber mat	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete block	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	2	Aircell PI	Steam	Y	Y	50% Chrysotile	4 LM	G	C	O & M	1-1	--
	3	MJC FI	Steam	Y	Y	50% Chrysotile	3 units	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	4 LM	G	C	O & M	1-1	--
	2	Aircell PI	Cond.	Y	Y	50% Chrysotile	0.2 LM	F	C	1 encapsulation	1-2	A89
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	6 units	G	C	O & M	1-1	--
	3	MJC FI	Cond.	Y	Y	50% Chrysotile	1 Unit	F	C	1 encapsulation	1-2	A90
	2	ACM debris (Aircell PI)	Cond.	Y	Y	50% Chrysotile	< 1.0 M^2	F	C	clean-up	1-1	A91
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
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DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No access under the carpet. 2) No ACM's were observed during the survey.	Functional Space (FS #): 2001 Location: Rooms 201, 212, 213 Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
	--	Cloth Partition	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Metal Duct	Duct	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
	--	FG PI & FI	Chiller	N	--	--	--	--	--	--	--	--
	--	Strofoam PI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	Strofoam FI with aluminium casing	Chiller	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey. 2) Suspect mould on deck surface above the ceiling tiles, in two locations. 3) No access under the carpet.	Functional Space (FS #): 2002 Location: Room 211 Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Suspect mould	Deck	N	--	--	--	--	--	2 locations	2-1	M5, M6
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
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PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
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Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey. 3) No access under the carpet.	Functional Space (FS #): 2003 Location: Room 210 Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Carpet	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Metal	Duct	N	--	--	--	--	--	--	--	--
	--	FG DI	Duct	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
FG: Fibreglass
FT: Floor Tile
CT: Ceiling Tile

Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): SW01 Location: Stairwell 1 Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	6	12" x 12" FT (white with grey)	Floor	N	--	NAD	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
	1	Adhesive puck (residual backing)	Deck	N	--	NAD	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
FI: Fitting Insulation:
PI: Pipe Insulation
DI: Duct Insulation
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FT: Floor Tile
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Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during the survey.	Functional Space (FS #): SW02 Location: Stairwell 2 Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	Terrazo	Floor	N	--	--	--	--	--	--	--	--
Walls	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	2' x 4' CT	Ceiling	N	--	--	--	--	--	Post 1986	--	--
Above Ceiling	--	Concrete	Deck	N	--	--	--	--	--	--	--	--
	--	Drywall	Wall	N	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

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Criteria for Condition of an ACM:
G: ACM is in GOOD condition; No damage
F: ACM is in FAIR condition; Less than 2% damage
P: ACM is in POOR condition; Greater than 2% damage

Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
B: Restricted to building staff only.
C: Areas of the building behind walls or ceiling system.

Building ID: M-22 Date: Dec. 10, 2008 Project #: PR-08-043	Notes: 1) No ACM's were observed during survey.	Functional Space (FS #): EX01 Location: Building exterior Inspector (s): SB

Building Materials:				**ACM Assessment:**							**Report Reference:**	
Location:	Homo. Mat. #:	Material Description:	System:	ACM (Y/N):	Friable (Y/N):	ACM Type:	Quantity:	Condition (G,F,P):	Access (A,B,C):	Response / Comments:	Drawing #:	Photo #:
Floor	--	--	--	--	--	--	--	--	--	--	--	--
Walls	--	Metal Siding	Wall	N	--	--	--	--	--	--	--	--
	--	Stucco	Wall	N	--	--	--	--	--	--	--	--
Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Above Ceiling	--	--	--	--	--	--	--	--	--	--	--	--
Below Ceiling	--	--	--	--	--	--	--	--	--	--	--	--

Material Description:
MJC: Mud Joint Compound
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Criteria for Access to an area containing ACM:
A: All building occupants may have access to this area.
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C: Areas of the building behind walls or ceiling system.

Functional Space Forms

The functional space form provides a general guide of information collected in each room or area of the facility and is considerate of but is not limited to the following:

(a) Building Materials - Each building material is given a description as to the location, homogenous material number, location and system;

(b) ACM Assessment - Each building material that is found to contain ACM is assessed as to friability, ACM type, quantity, condition, access and appropriate response;

(c) Report Reference - Report references to building materials with respect to drawings and photographs numbers is made available for convenience. Drawings and photographs are located in the Appendices section of this report.

Each functional space is assigned a four digit number beginning with 1001 for the first floor, 2001 for the second floor, 3001 for the third floor, and so on. Functional spaces are determined on a room-to-room or area-to-area basis. Also, included on each form is: building, date, Oakhill job number, functional space area name, inspector and notes. In the notes section important additional comments are made regarding ACM found in this area, samples collected and any areas within this functional space that were considered inaccessible at the time of inspection.

The functional space form is a useful tool for the collection of survey data and communication of such data for your record keeping purposes.

Criteria for Assessing Condition of ACM

The following criteria were used for evaluating the condition of ACM:

GOOD (G): The building material has no evidence of exposed ACM and exhibits no signs of damage or deterioration

***FAIR (F)*:** The building material has minor damage (less than 2%) and the potential for an airborne release of asbestos is low to moderate.

POOR (P): The building material has moderate to major damage (greater than 2%) and the potential for an airborne release of asbestos is moderate to moderate to high.

The evaluation of the potential for an airborne release of asbestos from an ACM is also considerate of fibre generating mechanisms. This involves any form of action that can cause deterioration of the ACM resulting in the generation of airborne asbestos fibres. Typical fibre generating mechanisms may include: water damage, grinding, vibration, air movement, etc. This determination is made based on the best professional judgement of the experienced inspector.

Criteria for Assessing Access to ACM

The accessibility of ACM identified was rated as:

Access A: All building occupants may have access to this area.

***Access B*:** Restricted to building staff only.

Access C: Areas of the building located behind walls or ceiling systems.

Response

Each ACM material, after all considerations, is given an appropriate response. The following is an explanation of each response that may be given:

Removal: For extensively damaged materials that cannot sustain encapsulation or materials that pose a significant potential for an airborne release and exposure to building occupants (i.e. debris). Requires immediate attention and encapsulation is not an option.

Encapsulation: Encapsulation involves the repair of damaged materials (i.e. canvas and lagging of damaged ACM pipe insulation). Materials that require encapsulation pose a potential risk of an airborne release ranging from low to high but restoration of the ACM is still a viable option. Encapsulation is not applicable if the material is severely deteriorated.

O & M Operations & Maintenance: These materials were found in good condition and should be periodically inspected.

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Asbestos Assessment

Buildings M-36 and M-22
1200 Montreal Road, Ottawa, ON

Prepared for:

National Research Council
1200 Montreal Road
Ottawa, ON K1A 0R6

Attention: Abbey Saunders
Mechanical Engineer

May 8, 2015

Pinchin File: 104430.001

MEMBER OF PG THE PINCHIN GROUP

Issued to:	**National Research Council**
Contact:	**Abbey Saunders** **Mechanical Engineer**
Issued on:	**May 8, 2015**
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EXECUTIVE SUMMARY

National Research Council (Client) retained Pinchin Ltd. (Pinchin) to conduct an asbestos building materials assessment of Buildings M-36 and M-22 located at 1200 Montreal Road, Ottawa, ON. The assessment was performed on April 20, 2015.

The objectives of the assessment were to identify specified asbestos containing building materials in preparation for renovation of rooms B-410, B-155, B-100, Men's Washroom, B-127C, and Closet on 2nd floor in building M-36 and room 120 (Zone Office) in building M-22. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

The assessed area was limited to rooms B-410, B-155, B-100, Men's Washroom, B-127C, and a closet on 2nd floor of Building M-36, and room 120 (Zone Office) in building M-22.

The buildings were occupied at the time of the assessment work.

SUMMARY OF FINDINGS

Asbestos-containing materials (ACM) were confirmed to be present as follows:

- Pipe insulation containing chrysotile asbestos, including parging cement and aircell, is present on pipes in the building and assumed to be present behind solid ceilings and walls.
- Plaster, containing chrysotile asbestos, present as wall and ceiling finishes throughout the assessed area in M-36.
- Vinyl 9"x9" floor tiles, containing chrysotile asbestos, present in Room 103 in Building M-36.
- Cementitious parge, containing chrysotile asbestos, present as a wall and ceiling finishes throughout the assessed area in M-22

SUMMARY OF RECOMMENDATIONS

The following is a summary of significant recommendations; refer to the body of the report for detailed recommendations:

1. Prepare plans and specifications for asbestos material removal which will or may be affected by the planned work or is otherwise scheduled for removal. The specifications should include and address the scope of work, safe work practices, personal protective equipment, respiratory protection, and disposal of waste materials.

2. Provide this report and the detailed plans and specifications to the contractor prior to bidding or commencing work.
3. Retain a qualified consultant to specify, inspect and verify the successful removal of asbestos materials.

Please refer to Section 4.0 of this report for detailed recommendations regarding administrative and renovation activities.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION AND SCOPE

National Research Council (Client) retained Pinchin Ltd. (Pinchin) to conduct an asbestos building materials assessment of Buildings M-36 and M-22, located at 1200 Montreal Road, Ottawa, ON.

The assessment was performed by Paul Bliss, Project Manager on April 20, 2015. The surveyor was accompanied by Abbey Saunders during the assessment. The building was occupied at the time of the assessment.

The objective of the assessment was to identify specified asbestos building materials in preparation for renovation. This assessment is intended to be used for pre-construction purposes only, and does not provide sufficient detail for long term management of asbestos materials as required by Health and Safety regulations. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

1.1 Scope of Assessment

The assessment was performed to establish the location and type of specified asbestos building materials incorporated in the structure(s) and its finishes. The assessed area was limited to the interior of M-36 which consisted of B-410, B-155, b-100, Men's Washroom, b-127C, and Closet on 2nd floor, and room 120 (zone office) in building M-22

2.0 BACKGROUND INFORMATION

2.1 Building Description

Item	Details
Building Use	Offices
Number of Floors/Levels	3 stories plus 1 below grade
Area of Scope	Approximately 4,000 SF, various rooms throughout building.
Year of Construction	1960's
Structure	Cast in place concrete
Exterior Cladding	Pre-cast concrete
HVAC	Hydronic radiators
Roof	Not in Scope
Flooring	Vinyl tile, carpet and exposed concrete

Item	Details
Interior Walls	Drywall, plaster and cementitious parge
Ceilings	Drywall, lay-in acoustic ceiling tiles and plaster

2.2 Existing Reports

Pinchin was provided excerpts from and instructed to rely upon, the following reports:

- "Designated Substance Survey, Building M-36, Ottawa", dated January 2009 prepared by Oakwood Environmental.

3.0 FINDINGS

3.1 Asbestos

3.1.1 Suspect Building Materials Not Found

The following types of building materials may historically contain asbestos but were not observed in the assessed area and are not discussed in the report findings:

- Spray-applied fireproofing or thermal insulation;
- Texture finishes (acoustic/decorative);
- Vermiculite;
- Acoustic ceiling tiles;
- Vinyl sheet flooring;
- Firestopping; and
- Sealants, caulking, and putty.

3.1.2 Thermal Systems Insulation (TSI)

3.1.2.1 Pipe Insulation

Parging cement, containing chrysotile asbestos, is present on pipe fittings (elbows, valves, tees, hangers etc.), as per report prepared by Oakhill Environmental. Parging cement is assumed to be present on pipes above solid ceilings and walls in the assessed areas.. Parging cement is a friable insulation,. Parging cement was visible on two fittings in room 120 in M-22, jacketed with canvas and in good condition.

A white corrugated paper insulation (trade name Aircell), containing chrysotile asbestos, is present on straight sections of pipe in the building as per report prepared by Oakhill Environmental. Aircell is assumed to be present on pipes above solid ceilings and walls in the assessed areas. Parging cement is a friable insulation. Aircell was visually identified and visible at the ceiling in room 120 in M-22, jacketed with canvas and in good condition.

3.1.3 Plaster

Plaster, containing chrysotile asbestos in the base layer, is present on walls and ceilings in the rooms assessed in B-36 (Samples 0001A-C, 0002A-C, 0003A-C, 0004A-C and 0005A-C). Plaster sampled in the closet on the second floor did not contain asbestos (Samples 0006A-C); however, based on the remaining samples results, should be treated as asbestos containing. Plaster is non-friable while in place, but generates friable dust upon removal. All plaster is painted and is in good condition.

Photo 1, B-100, plaster containing chrysotile asbestos in plaster base coat(sample 0003A-B)

Photo 2, 2nd floor closet, plaster does not contain asbestos,(sample 0006A-C)

3.1.4 Drywall Joint Compound

Asbestos in drywall joint compound was banned in Canada in 1980. Drywall joint compound on the drywall ceiling in the storage closet in M-36 was installed after 1985 (1980 plus a reasonable non-compliance period based on our experience) and is assumed to not contain asbestos.

3.1.5 Mastic

Vinyl floor tiles are present as follows:

Size, Pattern, Colour and Photo Number	Locations (Quantity)	Sample Number	Asbestos Type (tile)	Asbestos Type (mastic)
White, 9" X 9" vinyl floor tile,	Room B-103	0007A-C	Assumed to contain based on Oakhill report	None Detected

The vinyl floor tiles and mastic are non-friable and are in good condition.

Photo 3, Asbestos-containing 9"x 9" vinyl floor tile. Mastic does not contain asbestos. (sample 0007A-C)

3.1.6 Other Building Materials

Cementitious parge, containing chrysotile asbestos, is present on walls and the ceiling in Room 120 (Zone office) in building M-22(LAB ID 1507733 Sample 0001A-C). Cementitious parge is non-friable while in place but may generate friable dust upon removal. The material is in good condition.

Photo 4 – Cementitious parge on walls and ceiling, containing chrysotile asbestos, room 120, building M-22, (LAB ID 1507733 Sample 0001A-C)

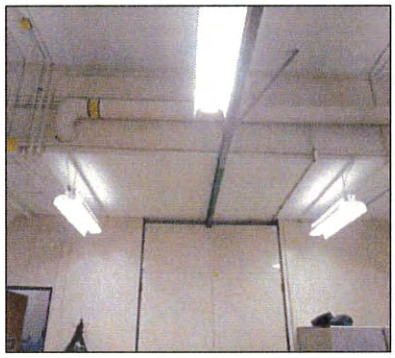


Photo 5 – Cementitious parge at ceiling, beginning of room 120

3.1.7 Presumed Asbestos Materials

A number of materials which might contain asbestos were not sampled during our assessment due to limitations in scope and methodology. Where present in the assessed area, these materials must be presumed to be an asbestos material and are best sampled during project planning and preparation of contract documents for their removal. Materials presumed to contain asbestos include:

- concrete floor levelling compound;
- elevator and lift brakes; and
- fire resistant doors.

4.0 RECOMMENDATIONS

4.1 General

1 Prepare plans and specifications for asbestos material removal which will or may be affected by the planned work or is otherwise scheduled for removal. The specifications should include

and address the scope of work, safe work practices, personal protective equipment, respiratory protection, and disposal of waste materials.

2 Investigate any items excluded from the scope of work of this report. Ideally this investigation will be performed as part of the development of the specifications, or at a minimum immediately prior to commencing renovations when the areas are no longer occupied.

3. Provide this report and the detailed plans and specifications to the contractor prior to bidding or commencing work.

4. Retain a qualified consultant to specify, inspect and verify the successful removal of asbestos materials.

4.2 Remedial Work

Remedial action is not required at this time.

4.3 Building Renovation Work

Remove all asbestos-containing materials (ACM) prior to renovation if ACM may be disturbed by the work.

If the identified ACM will not be removed prior to commencement of the work, disturbance of ACM must follow the appropriate asbestos precautions for the classification of work being performed.

Asbestos-containing materials must be disposed of at a landfill approved to accept asbestos waste.

5.0 LIMITATIONS

The work performed by Pinchin Ltd. was conducted in accordance with generally accepted engineering or scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied by furnishing written reports or findings. The Client acknowledges that subsurface and concealed conditions may vary from those encountered or inspected. Pinchin Ltd. can only comment on the environmental conditions observed on the date(s) the survey is performed. The work is limited to those materials or areas of concern identified by the Client or outlined in our proposal. Other areas of concern may exist but were not investigated within the scope of this assignment.

Pinchin Ltd. makes no other representations whatsoever, including those concerning the legal significance of its findings or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issue, regulatory statutes are subject to interpretation and these interpretations may change over time. Pinchin Ltd. accepts no responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The liability of Pinchin or our officers, directors, shareholders or staff will be limited to the lesser of the fees paid or actual damages incurred by the Client. Pinchin will not be responsible for any consequential or indirect damages. Pinchin will only be liable for damages resulting from the negligence of Pinchin. Pinchin will not be liable for any losses or damage if the Client has failed, within a period of two years following the date upon which the claim is discovered (Claim Period), to commence legal proceedings against Pinchin to recover such losses or damage unless the laws of the jurisdiction which governs the Claim Period which is applicable to such claim provides that the applicable Claim Period is greater than two years and cannot be abridged by the contract between the Client and Pinchin, in which case the Claim Period shall be deemed to be extended by the shortest additional period which results in this provision being legally enforceable.

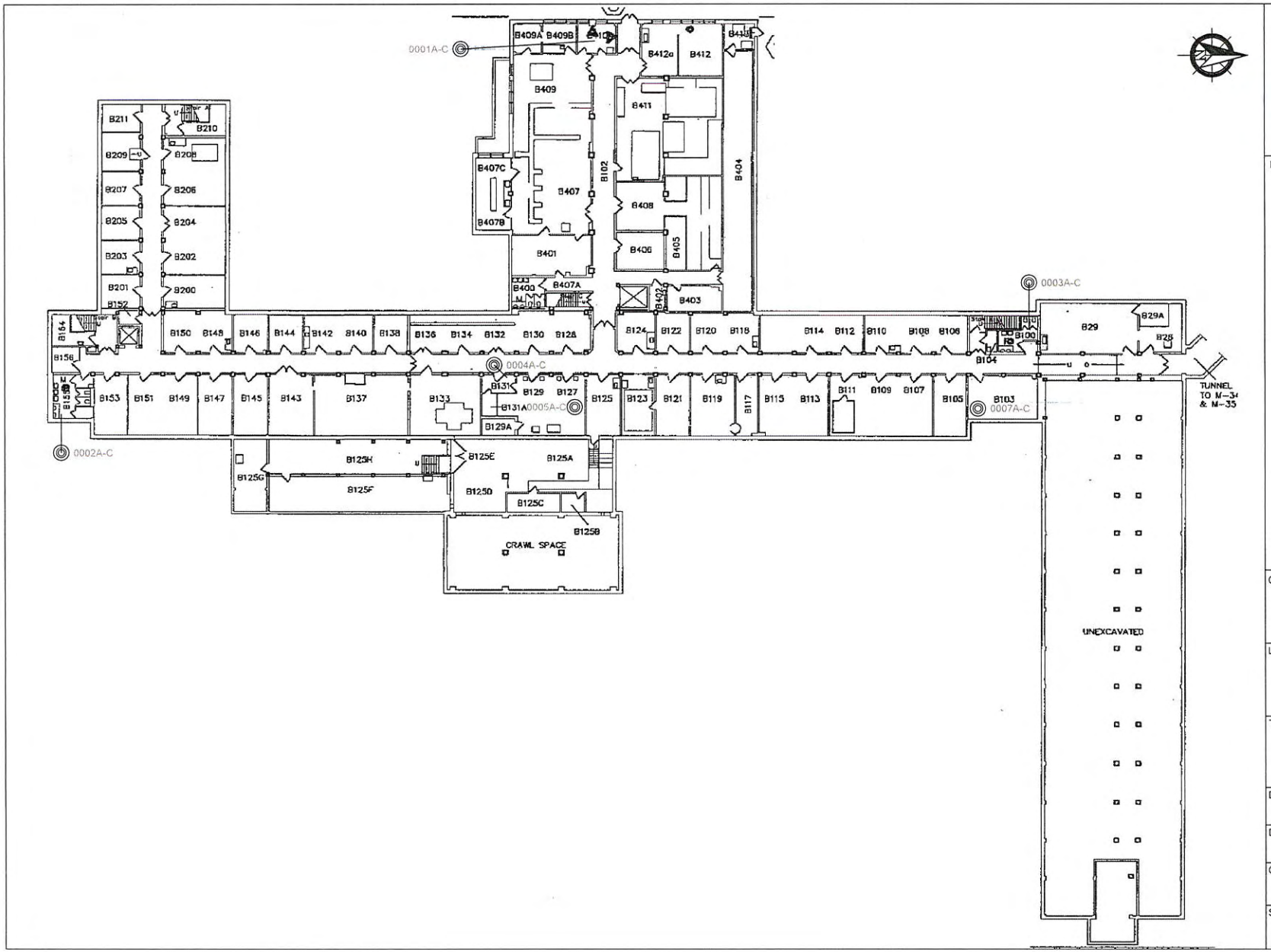
Information provided by Pinchin Ltd. is intended for Client use only. Pinchin Ltd. will not provide results or information to any party unless disclosure by Pinchin Ltd. is required by law. Any use by a third party of reports or documents authored by Pinchin Ltd. or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin Ltd. accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

6.0 REFERENCES

The following legislation and documents were referenced in completing the assessment and this report:

1. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05.
2. Designated Substances, Ontario Regulation 490/09.

APPENDIX I
Drawings



PINCHIN

LEGEND:

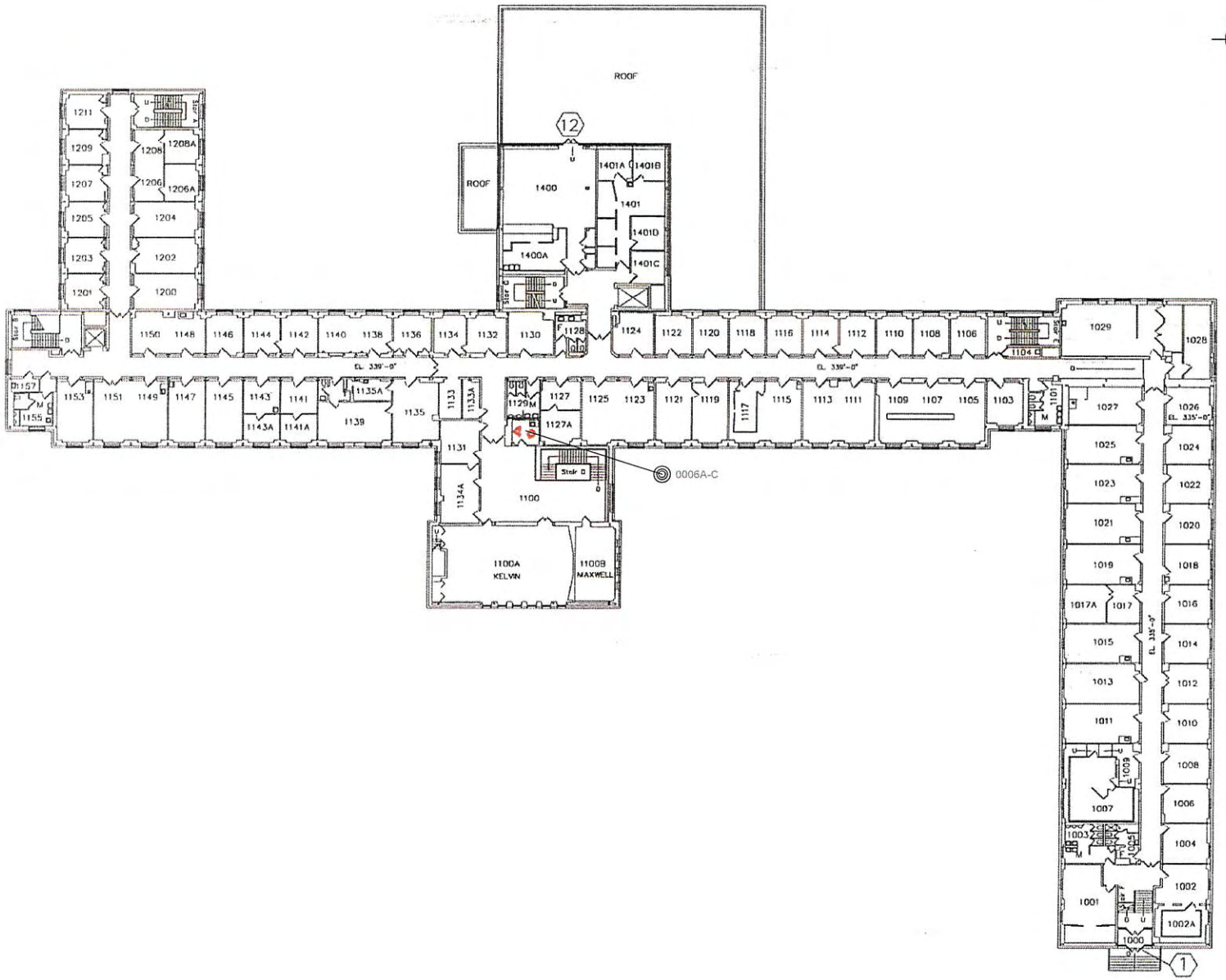
◎ ASBESTOS BULK SAMPLE

CLIENT:
NATIONAL RESEARCH COUNCIL
1200 MONTREAL ROAD
OTTAWA, ONTARIO

LOCATION:
1200 MONTREAL ROAD
OTTAWA, ONTARIO

TITLE:
ASBESTOS ASSESSMENT
BUILDING M-36
BASEMENT

DATE:	PROJECT # :
2015/05/08	104430.001
DRAWN BY: NCM	DRAWING:
CHECKED BY: MH	1 OF 3
SCALE: NTS	



PINCHIN

LEGEND:

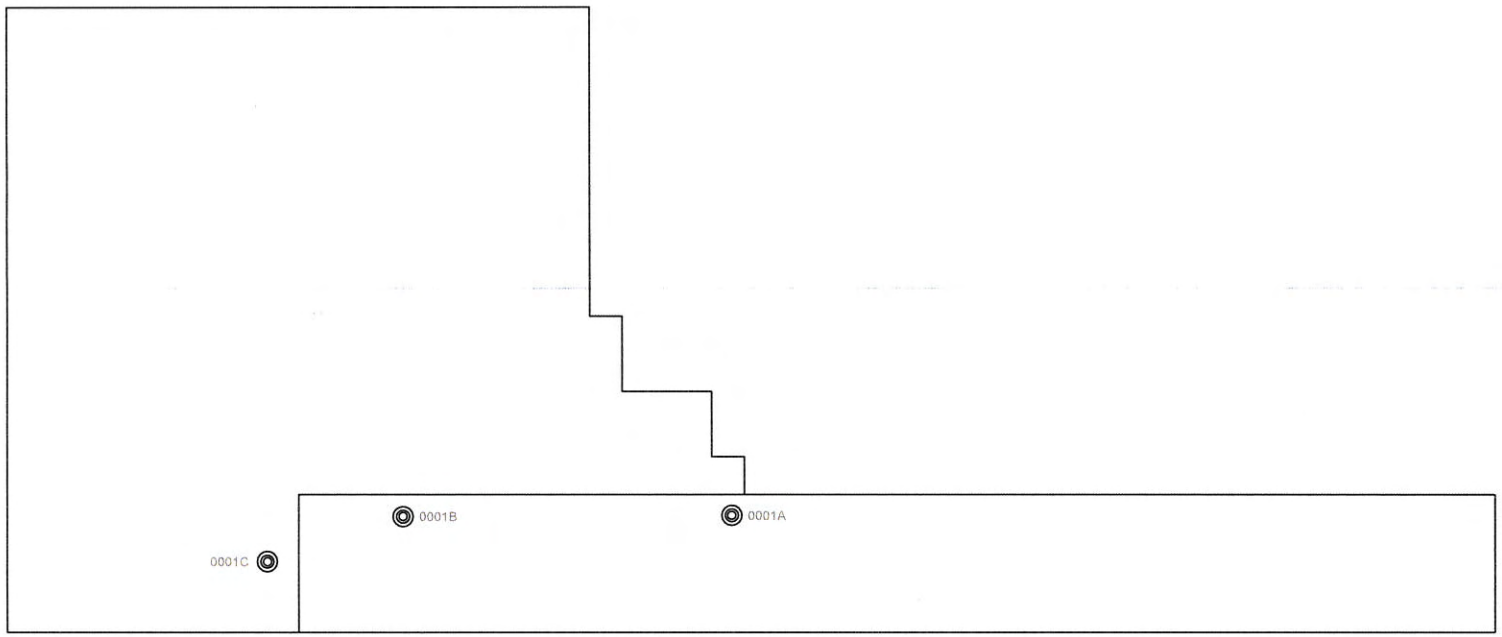
ASBESTOS BULK SAMPLE

CLIENT:
NATIONAL RESEARCH COUNCIL
1200 MONTREAL ROAD
OTTAWA, ONTARIO

LOCATION:
1200 MONTREAL ROAD
OTTAWA, ONTARIO

TITLE:
ASBESTOS ASSESSMENT
BUILDING M-36
SECOND FLOOR

DATE:	PROJECT # :
2015/05/08	104430.001
DRAWN BY: NCM	DRAWING:
CHECKED BY: MH	2 OF 3
SCALE: NTS	



PINCHIN

LEGEND:

ASBESTOS BULK SAMPLE

CLIENT:
NATIONAL RESEARCH COUNCIL
1200 MONTREAL ROAD
OTTAWA, ONTARIO

LOCATION:
1200 MONTREAL ROAD
OTTAWA, ONTARIO

TITLE:
ASBESTOS ASSESSMENT
BUILDING M-22
GROUND FLOOR

DATE:	PROJECT # :
2015/05/08	104430.001
DRAWN BY: NCM	DRAWING: 3 OF 3
CHECKED BY: MH	
SCALE: NTS	

APPENDIX II

Asbestos Analytical Certificates

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020

AIHA LAP, LLC ACCREDITED LABORATORY LAB #173190

NVLAP Lab Code: 200664-0

Customer: Pinchin Ltd.
555 Legget Drive
Kanata ON K2K 2X3

Attn: Paul Bliss
Gordon Gillespie

Lab Order ID: 1507733
Analysis ID: 1507733_PLM
Date Received: 4/22/2015
Date Reported: 4/27/2015

Project: 104430, Pinchin Ltd. 555 Legget Drive, Suite 1001, Tower A, Kanata, Ont, M-22, 1200 Montreal Road, Ottawa, ON K1A 0R6

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
0001A *1507733PLM_1*	Cementious parge, M-22, Ceiling end, Room 120	1% Chrysotile		99% Other	Gray Non Fibrous Heterogeneous Crushed
0001B *1507733PLM_2*	Cementious parge, M-22, Ceiling Zone office.	Not Analyzed			
0001C *1507733PLM_3*	Cementious parge, M-22, Room 120, Right side curve, basin	Not Analyzed			

Sharon Donald (3)

Analyst

Approved Signatory

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

150733

Version 1-15-2012

Client:	Pinchin Ltd.	***Instructions:***
Contact:	Paul Bliss / Gord Gillespie	*Use Column "B" for your contact info*
	555 Legget Drive, Suite 1001, Tower A	
Address:	Kanata, ON K2K 2X3	
Phone:	613-592-3387	*To See an Example Click the*
Fax:	613-592-5897	*bottom Example Tab.*
Email:	pbliss@pinchin.com	
	ggillespie@pinchin.com	***Enter samples between "<<" and ">>"***
Project:	104430, Pinchin Ltd. 555 Legget Drive, Suite 1001, Tower A, Kanata, Ont, M-22, 1200 Montreal Road, Ottawa, ON K1A 0R6	***Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.***
Client Notes:		*Only Enter your data on the first sheet "Sheet1"*
P.O. #.	104430	*Note: Data 1 and Data 2 are optional*
Date Submitted:	April 21 2015	*fields that do not show up on the official report, however they will be included*
Analysis:	PLM - Stop Positive	*in the electronic data returned to you*
TurnAroundTime:	4 days	*to facilitate your reintegration of the report data.*

Invoice to:

Contact name here
Email address here

Scientific Analytical Institute

4604 Dundas Dr.
Greensboro, NC 27407
Phone: 336.292.3888
Fax: 336.292.3313
Email: lab@sailab.com

Sample Number	Data 1 (Lab use only)	Sample Description	Data 2 (Lab use only\)
<<			
0001A		Cementious parge, M-22, Ceiling end, Room 120	
0001B		Cementious parge, M-22, Ceiling Zone office.	
0001C		Cementious parge, M-22, Room 120, Right side curve, basin	
>>			

Accepted ☑

Rejected ☐

4/22 10:30pm

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020

AIHA LAP, LLC ACCREDITED LABORATORY
LAB #173190

NVLAP Lab Code: 200664-0

Customer: Pinchin Ltd.
555 Legget Drive
Kanata ON K2K 2X3

Attn: Paul Bliss
Gordon Gillespie

Project: 104430.001

Lab Order ID: 1507730
Analysis ID: 1507730_PLM
Date Received: 4/22/2015
Date Reported: 4/29/2015

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes / Treatment
0001A - A	Plaster, Wall, M-36, B-410, West Wall	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_1	*finish*				Crushed
0001A - B	Plaster, Wall, M-36, B-410, West Wall	0.6% Chrysotile		99.4% Other	Gray Non Fibrous Heterogeneous
1507730PLM_22	*base*				Crushed
0001B - A	Plaster, Wall, M-36, B-410, North Wall	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_2	*finish*				Crushed
0001B - B	Plaster, Wall, M-36, B-410, North Wall	Not Analyzed			
1507730PLM_23	*base*				
0001C - A	Plaster, Wall, M-36, B-410, West middle wall	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_3	*finish*				Crushed
0001C - B	Plaster, Wall, M-36, B-410, West middle wall	Not Analyzed			
1507730PLM_24	*base*				
0002A - A	Plaster, Ceiling, M-36, B-155, Mens Washroom	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_4	*finish*				Crushed
0002A - B	Plaster, Ceiling, M-36, B-155, Mens Washroom	0.6% Chrysotile		99.4% Other	Gray Non Fibrous Heterogeneous
1507730PLM_25	*base*				Crushed

Dorlos Ammerman (39)
Analyst

Approved Signatory

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

NVLAP Lab Code: 200664-0

Customer: Pinchin Ltd.
555 Legget Drive
Kanata ON K2K 2X3

Attn: Paul Bliss
Gordon Gillespie

Project: 104430.001

Lab Order ID: 1507730
Analysis ID: 1507730_PLM
Date Received: 4/22/2015
Date Reported: 4/29/2015

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
0002B - A	Plaster, Ceiling, M-36, B-155, Mens Washroom	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_5	*finish*				Crushed
0002B - B	Plaster, Ceiling, M-36, B-155, Mens Washroom	Not Analyzed			
1507730PLM_26	*base*				
0002C - A	Plaster, Ceiling, M-36, B-155, Mens Washroom doorway	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_6	*finish*				Crushed
0002C - B	Plaster, Ceiling, M-36, B-155, Mens Washroom doorway	Not Analyzed			
1507730PLM_27	*base*				
0003A - A	Plaster, Ceiling, M-36, B-100, Ladies Washroom, above toilets	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_7	*finish*				Crushed
0003A - B	Plaster, Ceiling, M-36, B-100, Ladies Washroom, above toilets	0.6% Chrysotile		99.4% Other	Gray Non Fibrous Heterogeneous
1507730PLM_28	*base*				Crushed
0003B - A	Plaster, Ceiling, M-36, B-100, Ladies Washroom, entrance door	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_8	*finish*				Crushed
0003B - B	Plaster, Ceiling, M-36, B-100, Ladies Washroom, entrance door	Not Analyzed			
1507730PLM_29	*base*				

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommended that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Estimated MDL is 0.1%.

Dorlos Ammerman (39)

Analyst

Approved Signatory

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE LAB #173190

NVLAP Lab Code: 200664-0

Customer: Pinchin Ltd.
555 Legget Drive
Kanata ON K2K 2X3

Attn: Paul Bliss
Gordon Gillespie

Project: 104430.001

Lab Order ID: 1507730
Analysis ID: 1507730_PLM
Date Received: 4/22/2015
Date Reported: 4/29/2015

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes / Treatment
0003C - A	Plaster, Ceiling, M-36, B-100, Ladies Washroom, behind light	**None Detected**		**100% Other**	White Non Fibrous Homogeneous
1507730PLM_9	*finish*				Crushed
0003C - B	Plaster, Ceiling, M-36, B-100, Ladies Washroom, behind light	**Not Analyzed**			
1507730PLM_30	*base*				
0004A - A	Plaster, Ceiling, M-36, Mens Washroom, ceiling above urinals	**None Detected**		**100% Other**	White Non Fibrous Homogeneous
1507730PLM_10	*finish*				Crushed
0004A - B	Plaster, Ceiling, M-36, Mens Washroom, ceiling above urinals	**0.6% Chrysotile**		**99.4% Other**	Gray Non Fibrous Heterogeneous
1507730PLM_31	*base*				Crushed
0004B - A	Plaster, Ceiling, M-36, Mens Washroom, left ceiling	**None Detected**		**100% Other**	White Non Fibrous Homogeneous
1507730PLM_11	*finish*				Crushed
0004B - B	Plaster, Ceiling, M-36, Mens Washroom, left ceiling	**Not Analyzed**			
1507730PLM_32	*base*				
0004C - A	Plaster, Ceiling, M-36, Mens Washroom, middle ceiling	**None Detected**		**100% Other**	White Non Fibrous Homogeneous
1507730PLM_12	*finish*				Crushed
0004C - B	Plaster, Ceiling, M-36, Mens Washroom, middle ceiling	**Not Analyzed**			
1507730PLM_33	*base*				

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommended that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Estimated MDL is 0.1%.

Dorlos Ammerman (39)
Analyst

Approved Signatory

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

NVLAP Lab Code: 200664-0

Customer: Pinchin Ltd.
555 Legget Drive
Kanata ON K2K 2X3

Attn: Paul Bliss
Gordon Gillespie

Project: 104430.001

Lab Order ID: 1507730
Analysis ID: 1507730_PLM
Date Received: 4/22/2015
Date Reported: 4/29/2015

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
0005A - A *1507730PLM_13*	Plaster, Ceiling, M-36, B-127C, Right side *compound*	**None Detected**		**100% Other**	Gray Non Fibrous Homogeneous Crushed
0005A - B *1507730PLM_34*	Plaster, Ceiling, M-36, B-127C, Right side *plaster*	**None Detected**		**100% Other**	Gray Non Fibrous Heterogeneous Crushed
0005B - A *1507730PLM_14*	Plaster, Ceiling, M-36, B-127C, middle of room *finish*	**None Detected**		**100% Other**	White Non Fibrous Heterogeneous Crushed
0005B - B *1507730PLM_35*	Plaster, Ceiling, M-36, B-127C, middle of room *base*	**0.6% Chrysotile**		**99.4% Other**	Gray Non Fibrous Heterogeneous Crushed
0005C - A *1507730PLM_15*	Plaster, Ceiling, M-36, B-127C, left side *finish*	**None Detected**		**100% Other**	White Non Fibrous Homogeneous Crushed
0005C - B *1507730PLM_36*	Plaster, Ceiling, M-36, B-127C, left side *base*	**Not Analyzed**			
0006A - A *1507730PLM_16*	Plaster, Ceiling, M-36, Closet 2nd floor south wall *finish*	**None Detected**		**100% Other**	White Non Fibrous Homogeneous Crushed
0006A - B *1507730PLM_37*	Plaster, Ceiling, M-36, Closet 2nd floor south wall *base*	**None Detected**		**100% Other**	Gray Non Fibrous Heterogeneous Crushed

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommended that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Estimated MDL is 0.1%.

Dorlos Ammerman (39)
Analyst

Approved Signatory

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 LAB #173190

NVLAP Lab Code: 200664-0

Customer: Pinchin Ltd.
555 Legget Drive
Kanata ON K2K 2X3

Attn: Paul Bliss
Gordon Gillespie

Project: 104430.001

Lab Order ID: 1507730
Analysis ID: 1507730_PLM
Date Received: 4/22/2015
Date Reported: 4/29/2015

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes / Treatment
0006B - A	Plaster, Ceiling, M-36, Closet 2nd floor, middle south wall	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_17	*finish*				Crushed
0006B - B	Plaster, Ceiling, M-36, Closet 2nd floor, middle south wall	None Detected		100% Other	Gray Non Fibrous Heterogeneous
1507730PLM_38	*base*				Crushed
0006C - A	Plaster, Ceiling, M-36, Closet 2nd floor, end south wall	None Detected		100% Other	White Non Fibrous Homogeneous
1507730PLM_18	*finish*				Crushed
0006C - B	Plaster, Ceiling, M-36, Closet 2nd floor, end south wall	None Detected		100% Other	Gray Non Fibrous Heterogeneous
1507730PLM_39	*base*				Crushed
0007A	Mastic, 9" x 9", Floor tiles, B-103, (MASTIC ONLY)	None Detected		100% Other	Black Non Fibrous Heterogeneous
1507730PLM_19					Dissolved
0007B	Mastic, 9" x 9", Floor tiles, B-103, (MASTIC ONLY)	None Detected		100% Other	Black Non Fibrous Heterogeneous
1507730PLM_20					Dissolved
0007C	Mastic, 9" x 9", Floor tiles, B-103, (MASTIC ONLY)	None Detected		100% Other	Black Non Fibrous Heterogeneous
1507730PLM_21					Dissolved

Dorlos Ammerman (39)
Analyst

Approved Signatory

1507730

Version 1-15-2012

Client:	Pinchin Ltd.
Contact:	Paul Bliss / Gord Gillespie
	555 Legget Drive, Suite 1001, Tower A
Address:	Kanata, ON K2K 2X3
Phone:	613-592-3387
Fax:	613-592-5897
Email:	pbliss@pinchin.com
	ggillespie@pinchin.com
Project:	104430.001, Pinchin Ltd. 555 Legget Drive, Suite 1001, Tower A, Kanata, Ont, M-36, 1200 Montreal Road, Ottawa, ON K1A 0R6
Client Notes:	
P.O. #:	104430.001
Date Submitted:	April 21 2015
Analysis:	PLM - Stop Positive
TurnAroundTime:	4 days

Instructions:

Use Column "B" for your contact info

To See an Example Click the bottom Example Tab

Enter samples between "<<" and ">>"

Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.

Only Enter your data on the first sheet "Sheet1"

Note: Data 1 and Data 2 are optional fields that do not show up on the official report however they will be included in the electronic data returned to you to facilitate your reintegration of the report data

Invoice to:

Contact name here

Email address here

Scientific Analytical Institute

4604 Dundas Dr.

Greensboro, NC 27407

Phone: 336.292.3888

Fax: 336.292.3313

Email: lab@sailab.com

Sample Number	Data 1 (Lab use only)	Sample Description	Data 2 (Lab use only\)
<<			
0001A		Plaster, Wall, M-36, B-410, West Wall	
0001B		Plaster, Wall, M-36, B-410, North Wall	
0001C		Plaster, Wall, M-36, B-410, West middle wall	
0002A		Plaster, Ceiling, M-36, B-155, Mens Washroom	
0002B		Plaster, Ceiling, M-36, B-155, Mens Washroom	
0002C		Plaster, Ceiling, M-36, B-155, Mens Washroom doorway	
0003A		Plaster, Ceiling, M-36, B-100, Ladies Washroom, above toilets	
0003B		Plaster, Ceiling, M-36, B-100, Ladies Washroom, entrance door	
0003C		Plaster, Ceiling, M-36, B-100, Ladies Washroom, behind light	
0004A		Plaster, Ceiling, M-36, Mens Washroom, ceiling above urinals	
0004B		Plaster, Ceiling, M-36, Mens Washroom, left ceiling	

Accepted ☑

Rejected ☐

4.22 10A

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0004C	Plaster, Ceiling, M-36, Mens Washroom, middle ceiling
0005A	Plaster, Ceiling, M-36, B-127C, Right side
0005B	Plaster, Ceiling, M-36, B-127C, middle of room
0005C	Plaster, Ceiling, M-36, B-127C, left side
0006A	Plaster, Ceiling, M-36, Closet 2nd floor south wall
0006B	Plaster, Ceiling, M-36, Closet 2nd floor, middle south wall
0006C	Plaster, Ceiling, M-36, Closet 2nd floor, end south wall
0007A	Mastic, 9" x 9", Floor tiles, B-103, (MASTIC ONLY)
0007B	Mastic, 9" x 9", Floor tiles, B-103, (MASTIC ONLY)
0007C	Mastic, 9" x 9", Floor tiles, B-103, (MASTIC ONLY)

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APPENDIX III
Methodology

1.0 GENERAL

Pinchin Ltd. conducts a room-by-room survey (rooms, corridors, service areas, exterior, etc.) to identify the asbestos building materials as defined by the scope of work.

Information regarding the location and condition of asbestos building materials encountered and visually estimated quantities are recorded. The locations of any samples collected are recorded on small-scale plans.

1.1 Scope Limitations

The assessment excludes the following:

- Owner or occupant articles (e.g. stored items, furniture, appliances, etc.);
- Underground materials or equipment (e.g. vessels, drums, underground storage tanks, pipes, etc.);
- Building envelope, structural components, inaccessible or concealed materials or other items where sampling may cause consequential damage to the property;
- Energized systems (e.g. internal boiler components, elevators, mechanical or electrical components);
- Controlled products (e.g. stored chemicals, operational or process-related substances); and
- Materials not typically associated with construction (e.g. settled dust, spills, residual contamination from prior spills, etc.).

In occupied facilities, Pinchin only undertakes non-intrusive testing. Concealed spaces such as those above solid ceilings and within shafts and pipe chases are accessed via existing access panels only. Pinchin does not conduct demolition of walls, solid ceilings, structural items, interior finishes or exterior building finishes, to determine the presence of concealed materials.

1.2 Asbestos

Pinchin Ltd. conducts an inspection for the presence of friable and non-friable asbestos-containing materials (ACM). A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure.

A separate set of samples is collected of each type of homogenous material suspected to contain asbestos. A homogenous material is defined by the US EPA[1] as material that is uniform in texture and

1 Environmental Protection Agency

appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material. The homogeneous materials are determined by visual examination, available information on the phases of the construction and prior renovations.

Pinchin collects samples at a rate that is in compliance with Table 1 of O.Reg. 278/05.

The sampling strategy is also based on known ban dates and phase out dates of the use of asbestos; sampling of certain building materials is not conducted after specific construction dates. In addition, to be conservative, several years past these dates are added to account for some uncertainty in the exact start/finish date of construction and associated usage of ACM.

In some cases, manufactured products such as asbestos cement pipe are visually identified without sample confirmation.

Flooring mastic or adhesive is sampled and analyzed if present on the underside of flooring samples (vinyl floor tile and vinyl sheet flooring).

Pinchin Ltd. submits the bulk samples to a NVLAP[2] accredited laboratory for analysis. The analysis is performed in accordance with Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, July 1993.

The asbestos analysis is completed using a stop positive approach. Only one result of greater than the regulated criteria (0.5%) is required to determine that a material is asbestos-containing, but all samples must be analysed to conclusively determine that a material is non-asbestos. The laboratory stops analysing samples from a homogeneous material once a result greater than the regulated criteria is detected in any of the samples of that material. All samples of a homogeneous material are analysed if no asbestos is detected. In some cases, all samples are analysed in the sample set regardless of result. Where building materials are described in the report as non-asbestos, this means that either no asbestos was detected by the analytical method utilized or, if detected, it is below the lower limit of an asbestos-containing material in the applicable regulation.

Asbestos materials are evaluated in order to make recommendations regarding remedial work. The priority for remedial action is based on several factors:

- Friability (friable or non-friable);
- Condition (good, fair, poor, debris);
- Accessibility (ranking from accessible to all building users to inaccessible);
- Visibility (whether the material is obscured by other building components);

[2] National Voluntary Laboratory Accreditation Program

- Efficiency of the work (for example, if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition).