Bersch & Associates Ltd.

George Ward Pool
Asbestos Survey Report

February 2014

Prepared For: **City Of Saskatoon- Infrastructure Services Department**
1101 Avenue P North, Saskatoon, SK.
Attn: Brent Anderson

Prepared By: **Bersch & Associates Ltd.**
Project No. : **B67SRB11**

1.0 EXECUTIVE SUMMARY

The survey of the George Ward Pool located at 1915 5th Street East in Saskatoon, Saskatchewan entailed the inspection of all accessible suspect asbestos containing material (ACM) located throughout the facility. Materials inspected included mechanical insulating material, vinyl floor covering, textured ceiling material, and fire-stop material.

Bulk sample analysis results indicate the presence of "Chrysotile" asbestos within the George Ward Pool located in Saskatoon, SK. Please refer to ***Appendix I*** **for Bulk Sample Analysis** results. The recommended actions to be implemented in reference to the ACM identified are Management. Please refer to section 5 Asbestos Abatement Discussion for definitions. It should be noted that the recommendation of "Management" as part of the asbestos action plan is based upon the premise that renovations are not scheduled throughout the area that would impact the asbestos containing material present. ***Prior to any major renovation/demolition activity, a destructive investigation is recommended to identify any inaccessible ACM that is physically concealed or isolated in areas such as enclosed wall/ceiling/floor cavities and pipe chases***. Asbestos was detected in the following forms throughout the facility:

- **Pipeline Fitting Mud Compound** is located on pipelines within rooms 107 and 109.

- **Heat Shield Material** is found within two light fixtures in 105 shower room.

The various types of accessible ACM within the facility have been clearly identified to eliminate uncertainty of asbestos content. The identification of these materials is as follows:

- The Asbestos Pipeline Fittings are identified with a red dot signifying they are asbestos containing.

Throughout the survey of the George Ward Pool the Asbestos Containing Materials were assessed and given a Priority Rating of One, Two or Three, with Priority One being the items requiring the most immediate attention. See the **Survey Spreadsheet Database** in **Appendix II** for a room-by-room account.

Bersch & Associates Ltd. implemented the use of doorjamb labels that are applied to all the doorjambs of the rooms containing asbestos within the facility. This permits anyone accessing the room to easily identify the ACM present without having to reference the written report. Legends providing explanation of the abbreviations used on door jambs were placed on the backside of all maintenance/custodial doors within the facility. Employees and contractors will use the legend as a reference to identify ACM within the areas they are working.

2.0 INTRODUCTION

Bersch & Associates Ltd. was retained by the City of Saskatoon to conduct an Asbestos Survey and Hazard Assessment of the George Ward Pool located in Saskatoon, SK. The survey entailed

the inspection of all accessible areas of the facility; including crawlspaces, ceiling spaces, pipe chases, and attics. The purpose of the survey was to locate, identify and assess the condition of all Asbestos Containing Materials (ACM) located throughout the facility. This report gives a detailed account of the inspection results and our firm's recommendations on control options to be implemented to bring the facility in compliance with the Province of Saskatchewan Occupational Health and Safety Act and Regulations. Bersch & Associates Ltd. conducted the survey in February 2014. A review of this report shall be conducted with all trades that are entering the facility to perform maintenance or renovation activity. This will ensure they are familiar with the types and locations of asbestos-containing materials present and prevent any uncontrolled disturbance and/or possible exposure to asbestos.

3.0 METHODOLOGY

Bersch & Associates Ltd. conducted the survey of the George Ward Pool in Saskatoon, SK in February of 2014. The primary documents for guidance and criteria in this survey were the Province of Saskatchewan "Occupational Health and Safety Act and Regulations, 1996", Province of Saskatchewan "Managing Asbestos", and the U.S. Environmental Protection Agency "Guidance for Controlling Asbestos Containing Materials in Buildings". The USEPA document identifies factors associated with the "condition" and the "potential for disturbance or erosion" of asbestos containing materials (ACM). These factors help to determine potential for exposure to ACM and were used to make a qualitative evaluation of the material. It should be noted that the recommendation of "Management" Asbestos Abatement Action is based upon the premise that renovations are not scheduled in that area that will require disturbing or violating the asbestos containing material. In the event that renovations are scheduled that impact upon the areas of asbestos containing material then pre-removal of the asbestos containing materials may be necessary.

In total, seventeen (17) bulk samples of suspect asbestos-containing materials were collected throughout the facility. Chrysotile asbestos was identified within two samples collected. Refer to Appendix I for a copy of the Bulk Sample Analysis Report. All bulk samples collected were analyzed by Bersch & Associates Ltd. laboratory in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as <1% by volume.

4.0 RECOMMENDATIONS:

Throughout the survey of the George Ward Pool the Asbestos Containing Materials were assessed and given a Priority Rating of One, Two or Three, with Priority One being the items requiring the most immediate attention. As a result, "Priority One" items were identified within the facility within the 107 Staff Room. Future planning should begin to address these areas as per the recommendations provided in the attached **Asbestos Survey Database found in**

***Appendix II*.** Priority Ratings for all other ACM identified is also found in the database on a room-by-room account.

5.0 ASBESTOS ABATEMENT DISCUSSION

Asbestos is a known carcinogen and is listed in the Province of Saskatchewan under the Occupational Health and Safety Appendix, Part V as a Hazardous Chemical Substance and any release of asbestos fibres into the atmosphere creates a potential health hazard. Although the mechanism and epidemiology of asbestos carcinogenisis is not yet well defined, accumulating evidence suggests the significance of exposure at even very low fibre concentrations and hence human exposure should be kept to a minimum. It should be noted however that asbestos is a natural mineral and a measurable background concentration can be detected in any location sampled (inside buildings, outside buildings, urban, rural, etc.). The recommendations of the report are therefore intended to keep the potential exposure to an absolute minimum with the knowledge that a zero exposure is not possible.

Asbestos containing materials have been used in a wide variety of applications. Of particular concern, is the group of so called friable products. A friable product is one that can be crumbled or reduced to powder or smaller fragments by hand pressure. Publications from the U.S.E.P.A. as early as 1977 have indicated the potential hazard of asbestos exposure in buildings containing these friable products. The two main uses of friable asbestos products are as spray insulation (thermal, acoustic or fireproofing) on deck and/or beams or as thermal insulation on piping or mechanical equipment. A large amount of non-friable asbestos-containing materials have also been used in building construction such as asbestos cement board and asbestos containing vinyl flooring.

The mere presence of a friable asbestos containing material does not imply that there is an actual presence of elevated airborne fibre. As numerous studies have indicated, elevated asbestos fibre levels are generally found when settled dust or the actual asbestos containing material itself is disturbed by maintenance, renovation, inadvertent contact or vibration. The factors considered in the Environmental Protection Agency (USEPA) exposure assessment (condition of material, water damage, activity, movement, exposed surface area, accessibility, friability and presence in an air stream) often give some indication of the likelihood of fibre release but are not in any way definitive in determining whether a hazard exists or not. That is, even if the most friable product exists in a building, elevated fibre levels will not likely occur unless there is some disturbance by physical contact, vibration or an air stream.

There are four possible approaches to control exposure to airborne asbestos once a friable material is identified in a building. These methods briefly are as follows:

A) Removal - Asbestos material is removed and disposed of by burial and replaced by non-asbestos materials.

B) Encapsulation - Asbestos material is coated with a bridging or penetrating sealant.

C) Enclosure - Asbestos containing materials are separated from the building environment by barriers such as suspended ceilings or cladding materials.

D) Deferred Action or Management and Custodial Control - The Province of Saskatchewan Human Resources, Labor and Employment Branch under the Occupational health and Safety Regulations publish a document outlining "The Management of Asbestos". In the guide for compliance, an action plan is outlined for management of the asbestos materials identified and in summary is:

1. Identification, which has been accomplished by this report.

2. Development of Written Handling Procedures for maintenance personnel or often arrangements are made for a qualified contractor to conduct the necessary removal or spot maintenance prior to the regular staff conducting maintenance.

3. Asbestos Abatement Awareness and Process Training if the regular maintenance personnel are required to conduct asbestos related activities.

4. Inspection on regular basis is conducted to determine the ongoing condition of the material. Sask. Occupational Health & Safety Regulations require an "annual" inspection of all "friable" asbestos materials by a competent person.

In the event renovations or maintenance is performed within areas containing asbestos materials, written procedures must be developed to conduct the activity or prior removal if the situation warrants.

6.0 REFERENCES

.1 Province of Saskatchewan “The Occupational Health and Safety Act and The Occupational Health and Safety Regulations" Office Consolidation, December 1996.

.2 Province of Saskatchewan Human Resources, Labor, and Employment “The Management of Asbestos" January, 1991.

.3 USEPA, 1985. U.S. Environmental Protection Agency, "Guidance for Controlling Asbestos-Containing Materials in Buildings". Washington, DC: Office of Toxic Substances, USEPA.

.4 Midwest Centre for Occupational Health & Safety St. Paul’s, Minnesota – Asbestos Training For Inspectors & Management Planners

.5 McCrone Research Institute Course Hayward California " Asbestos Identification"

.6 Environment Management and Protection Act, Saskatchewan Environment, October 2002

.7 Hazardous Substances and waste Dangerous Goods Regulations, Saskatchewan Environment, April 1989

APPENDIX I

BULK SAMPLE ANALYSIS REPORT

BERSCH & ASSOCIATES LTD.

February 12, 2014

City Of Saskatoon
Infrastructure Services Department
1101 Avenue P North
Saskatoon, Sk.
S7L 7K6

ATTENTION: Brent Anderson

SUBJECT: George Ward Pool Bulk Sample Analysis Report

Please find attached the laboratory results for the bulk analysis of the samples collected throughout the George Ward Pool located at 1915 5th Street East in Saskatoon, SK. The samples were analyzed in our laboratory for the identification of asbestos.

The results for the bulk samples were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client. If any questions arise on the results of the attached information please contact me at 306 222 7477. Thank you for this opportunity of service!

Sincerely,

Brad Berschiminsky
Bersch & Associates Ltd.
File: B67BLB11

Bersch & Associates Ltd.
Box 3568
Humboldt, Sask. S0K 2A0

B67BAE07

BULK SAMPLE ANALYSIS REPORT

PROJECT NO. B67.14
CLIENT: City of Saskatoon
Infrastructure Services - Facilities Branch
Contact: Brent Anderson
Location: George Ward Pool - 1915 5th Street East, Saskatoon, SK.

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	7-May-13	101 Mechanical Room- Boiler refractory on door	None detected		WB
2	7-May-13	101 Mechanical Room- Boiler door gasket	None detected		WB
3	7-May-13	107 Staff Room- Pipeline fitting on small brown line above sink	Chrysotile	60	WB
4	7-May-13	110 Exterior- Bulletin board adjacent entry gate	None detected		WB
5	11-Feb-14	101 Mechanical Room- Insulation on large line above boiler	None detected		WB
6	11-Feb-14	101 Mechanical Room- Boiler exhaust insulation	None detected		WB
7	11-Feb-14	101 Mechanical Room- Insulation on small line north of boiler, adjacent wall	None detected		WB
8	11-Feb-14	101 Mechanical Room- Insulation on medium line adjacent Water Heater	None detected		WB
9	11-Feb-14	101 Mechanical Room- Fire-stop material at pipe penetration into the center of the east wall	None detected		WB
10	11-Feb-14	105 Shower Room- Heat shield in light fixture	Chrysotile	60	WB

Bersch & Associates Ltd.
Box 3568
Humboldt, Sask. S0K 2A0

B67BAE07

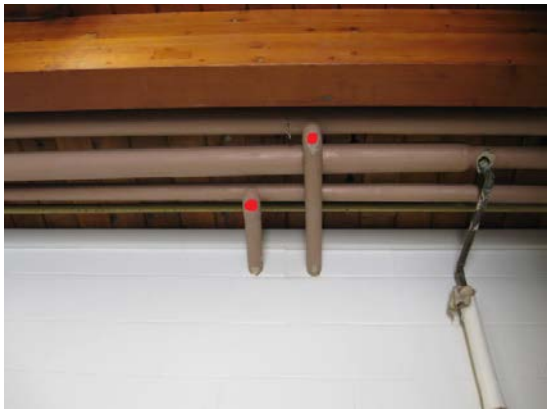
BULK SAMPLE ANALYSIS REPORT

PROJECT NO. B67.14
CLIENT: City of Saskatoon
Infrastructure Services - Facilities Branch
Contact: Brent Anderson
Location: George Ward Pool - 1915 5th Street East, Saskatoon, SK.

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
11	11-Feb-14	107 Staff Room- Insulation on small overhead line above the sink	None detected		WB
12	11-Feb-14	111 Women's Dressing Room- Wavy paneling on exterior south wall	None detected		WB
13	11-Feb-14	112 Men's Dressing Room- Insulation on overhead line above entry	None detected		WB
14	11-Feb-14	109 Storage- Countertop adjacent east entry	None detected		WB
15	11-Feb-14	109 Storage- Wall panel on east wall adjacent entry	None detected		WB
16	11-Feb-14	112 Men's Dressing Room- Concrete mortar on top of block wall straight in from entry	None detected		WB
17	11-Feb-14	Pipe chase between 115 and 118- Insulation on small line adjacent entry	None detected		WB

BULK SAMPLE PHOTOS

#3) Pipeline Fittings



#10) Heat Shield

APPENDIX II

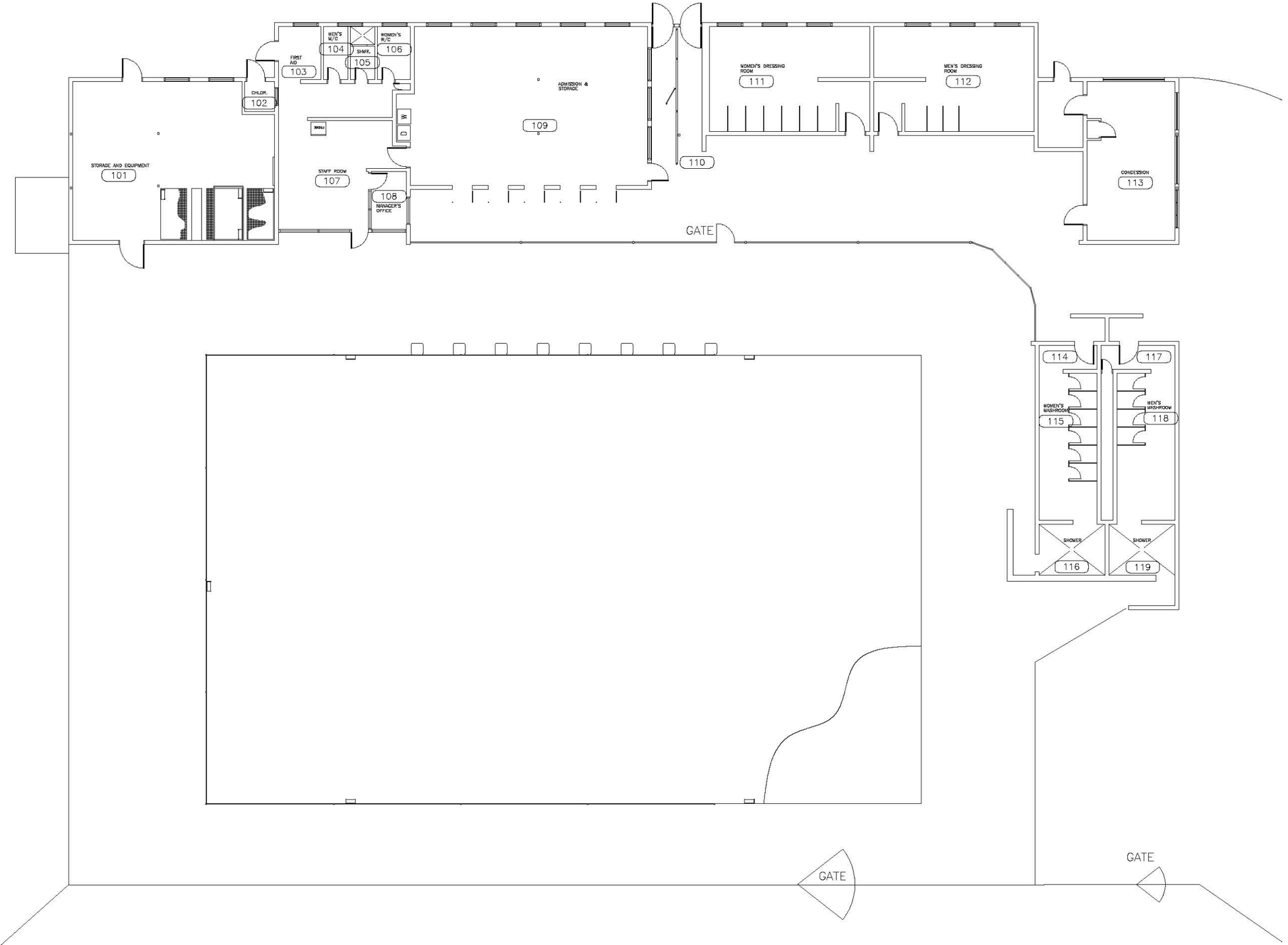
ASBESTOS SURVEY DATABASE

Bersch & Associates LTD.

			SAMPLE DATA												
	Room		SAMPLE	Sample	Date	Asbestos	% of	Tradename			Description of	Asbestos Content	Potential for	Recommended	
Floor	Number	Use	SAMPLE REP	ID	DD/MM/YY	Type	Asbestos	ACM Product	Condition	Priority	Sample Location	In Area	Disturbance	Action	Comments
M	101	Mechanical Room	Sample	B67-ASB.1	07-May-13		None	Boiler Refractory			101 Mechanical Room- Boiler refractory on door	No Accessible ACM			
M	101	Mechanical Room	Sample	B67-ASB.2	07-May-13		None	Gasket Material			101 Mechanical Room- Boiler door gasket	No Accessible ACM			
M	101	Mechanical Room	Sample	B67-ASB.5	11-Feb-14		None	Lineal Pipe Insulation			101 Mechanical Room- Insulation on large line above boiler	No Accessible ACM			
M	101	Mechanical Room	Sample	B67-ASB.6	11-Feb-14		None	Lineal Pipe Insulation			101 Mechanical Room- Boiler exhaust insulation	No Accessible ACM			
M	101	Mechanical Room	Sample	B67-ASB.7	11-Feb-14		None	Lineal Pipe Insulation			101 Mechanical Room- Insulation on small line north of boiler, adjacent wall	No Accessible ACM			
M	101	Mechanical Room	Sample	B67-ASB.8	11-Feb-14		None	Lineal Pipe Insulation			101 Mechanical Room- Insulation on medium line adjacent Water Heater	No Accessible ACM			
M	101	Mechanical Room	Sample	B67-ASB.9	11-Feb-14		None	Fire-Stop Material			101 Mechanical Room- Fire-stop material at pipe penetration into the center of the east wall	No Accessible ACM			
M	102	Chlorine Room										No Accessible ACM			
M	103	First Aid										No Accessible ACM			
M	104	Men's Washroom										No Accessible ACM			
M	105	Shower	Sample	B67-ASB.10	11-Feb-14	Chrysotile	60%	Heat Shield Material	Good	2	105 Shower Room- Heat shield in light fixture	Heat Shield Material	Moderate	Manage	Asbestos heat shields are found within the two light fixtures. Replace the globe on the one light fixture.
M	106	Women's Washroom										No Accessible ACM			
M	107	Staff Room	Sample	B67-ASB.3	07-May-13	Chrysotile	60%	Pipeline Fitting Compound	Poor	1	107 Staff Room- Pipeline fitting on small brown line above sink	Pipeline Fitting Compound	Mod/High	Remove	Remove remnants of two fittings on pipelines above the sink.
M	107	Staff Room	Sample	B67-ASB.11	11-Feb-14		None	Lineal Pipe Insulation			107 Staff Room- Insulation on small overhead line above the sink	Pipeline Fitting Compound			
M	108	Office										No Accessible ACM			
M	109	Storage	Sample	B67-ASB.14	11-Feb-14		None	Countertop			109 Storage- Countertop adjacent east entry	No Accessible ACM			
M	109	Storage	Sample	B67-ASB.15	11-Feb-14		None	Wall Board			109 Storage- Wall panel on east wall adjacent entry	No Accessible ACM			
M	109	Storage	Sample Rep	B67-ASB.3	07-May-13	Chrysotile	60%	Pipeline Fitting Compound	Good	3	107 Staff Room- Pipeline fitting on small brown line above sink	Pipeline Fitting Compound	Low/Mod	Manage	
M	110	Exterior	Sample	B67-ASB.4	07-May-13		None	Bulletin Board			110 Exterior- Bulletin board adjacent entry gate	No Accessible ACM			
M	111	Women's Dressing Room	Sample	B67-ASB.12	11-Feb-14		None	Wall Board			111 Women's Dressing Room- Wavy paneling on exterior south wall	No Accessible ACM			
M	112	Men's Dressing Room	Sample	B67-ASB.13	11-Feb-14		None	Lineal Pipe Insulation			112 Men's Dressing Room- Insulation on overhead line above entry	No Accessible ACM			
M	112	Men's Dressing Room	Sample	B67-ASB.16	11-Feb-14		None	Concrete Mortar			112 Men's Dressing Room- Concrete mortar on top of block wall straight in from entry	No Accessible ACM			
M	113	Concession													Inaccessible at time of survey. If pipeline fittings are found within the room consider to be ACM until testing proves otherwise.
M	114	Vestibule										No Accessible ACM			
M	115	Women's Washroom										No Accessible ACM			
M	116	Shower										No Accessible ACM			
M	117	Vestibule										No Accessible ACM			
M	118	Men's Washroom										No Accessible ACM			
M	119	Shower										No Accessible ACM			
M		Pipe Chase between 115 & 118	Sample	B67-ASB.17	11-Feb-14		None	Lineal Pipe Insulation			Pipe chase between 115 and 118- Insulation on small line adjacent entry	No Accessible ACM			The pipe chase was inaccessible to ensure there is no ACM. No ACM was observed from the entry but if any mud compound is on the pipelines or ground it should be considered to be ACM.

APPENDIX III

FLOOR PLANS



City of Saskatoon

Infrastructure Services Department

Facilities Branch
306-975-3300

GENERAL NOTES:

1. All dimensions are in millimetres
2. Drawings are not to be scaled.
3. All drawings to be read in conjunction with the specifications. unless otherwise noted.
4. Verify site conditions and location of all utilities prior to the start of construction.
5. Report all discrepancies to the Consultant.
6. If in doubt, ask.

REV	ISSUED FOR	DATE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	REQUESTED BY:
	MB	dt	LC

SCALE:	DATE:
1:200 (11x17)	15/4/2005

SHEET NAME: Asbuilt

Main Floor Base Plan

PROJECT TITLE

647 George Ward Pool

PROJECT NO.

SHEET REV. NO.