PURCHASING SECTION
13450 – 104 Avenue, Surrey BC V3T 1V8
Tel: 604-590-7274
E-mail: purchasing@surrey.ca

ADDENDUM #1

REQUEST FOR QUOTATIONS (RFQ) NO.:	**1220-040-2017-138**
TITLE:	**SURREY FIRE HALL #8 BUILDING ENVELOPE REPLACEMENT**
ADDENDUM ISSUE DATE:	**January 23, 2018**
REVISED CLOSING DATE:	**prefer to receive Quotations on or before: February 13, 2018**

INFORMATION FOR CONTRACTORS

This Addendum is issued to provide additional information to the RFQ for the above named project, to the extent referenced and shall become a part thereof. No consideration will be allowed for extras due to the Contractor not being familiar with this Addendum. This Addendum No. 1 contains 38 pages in total.

REVISED CLOSING DATE:

1) The City would prefer to receive Quotations on or before **Tuesday, February 13, 2018**. The City's office hours are 8:30 a.m. to 4:00 p.m., Monday to Friday, except statutory holidays.

GENERAL:

2) Surrey Fire Hall #8 must remain open and in full operational capacity during construction. The Contractor must not affect Surrey Fire Hall #8 response time for any calls received.

SPECIFICATIONS:

3) The attached LED Slim Wall Pack and Stockholm light fixture cut-sheets are hereby added to and form part of Appendix 2 - Supplementary Specifications (Project).

4) The attached Hazardous Materials Survey – Fire Hall No. 8, 17572 57th Avenue, Surrey, BC dated May 25, 2010 by Pacific Environmental Consulting Services is hereby added to and form part of Appendix 2 - Supplementary Specifications (Project).

5) The attached Asbestos Identification and Management Program Fire Hall #8 dated June 2010 by Astech Consulting Ltd. is hereby added to and form part of Appendix 2 - Supplementary Specifications (Project).

6) The following are approved alternatives:

a) Alternate vapour permeable membrane: IKO COMMERCIAL AQUABARRIER VP.
b) Alternate self-athering air & vapout barrier: IKO COMMERCIAL AVB - AIR/VAPOUR BARRIER.

UNIT PRICE:

7) The Contractor is to provide the following unit pricing:

UP-1: Provide unit price ($/sqr.ft.) for exterior sheathing repair, including insulation and wood framing: $ _____.

LIST OF SEPARATE PRICES:

8) The List of Separate Prices as stated in Schedule C – Quotation, Point 10 are hereby deleted and replaced by the following:

10. The following is a list of Separate Price(s) to the Work and forms part of this RFQ, upon the acceptance of any or all of the Separate Price(s). The Separate Prices are an addition or a deduction to the Total Quotation Price and do not include GST. DO NOT state a revised Total Quotation Price.

SP #	Description	Addition	Deduction
SP-1	Provide replacement double glazed windows on west elevation only, to match existing. Include demolition of existing windows, installation of replacement window and waterproofing.	$	$
SP-2	Provide exterior signage where noted on drawings.	$	$
SP-3	Provide storefront window at north east corner. Include demolition and framing modifications for window opening.	$	$
SP-4	Performance Bond at 50% of total contract value	$	$
SP-5	Labour and Material Payment Bond at 50% of total contract value	$	$

QUESTIONS AND ANSWERS:

Q1: I would like to inquire if the peel and stick Bakor Blueskin product specified on the drawings is intended to be a vapour permeable membrane or a non-permeable.

A1: It is intended to be a vapour permeable membrane.

Q2: The Quotation notes a start date of March 5th and end date of April 30th. The Quotation form has an area to put in start and completion dates, the schedule as noted will not be achievable – do we simply put in what we expect the time frame to be?

A2: Yes, if the Contractor cannot achieve the desired project schedule then the Contractor should provide what they expect the schedule to be.

Q3: I have a question regarding the attachments 1 – 3 for the above mentioned RFQ.

Please confirm that only Schedule C – Quotation is required to be submitted and that attachments 1 through 3 do not need to be completed and attached with the submission?

A3: Attachments 1 through 3 will form part of the Agreement and are provided for reference. They do not need to be submitted with the Quotation.

END OF ADDENDUM #1

All Addenda will become part of the RFQ Documents.

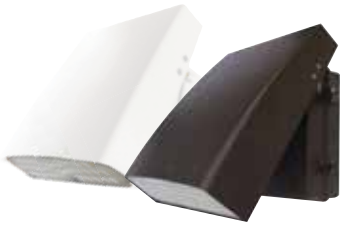
LED Slim Wall Pack

Slim wall pack luminaires offer a sleek design with adjustable tilt to ensure light is being directed where needed. They are perfect for a variety of applications such as entrances, walkways or building perimeters in residential or commercial applications.

- Adjustable tilt up to 90°
- 0-10 V dimming on some models

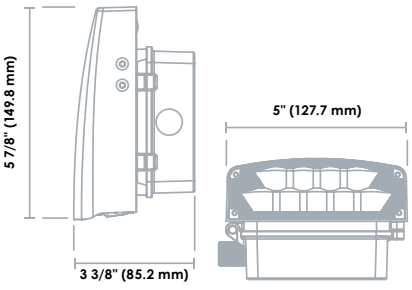
12 W

30, 40, 50 W

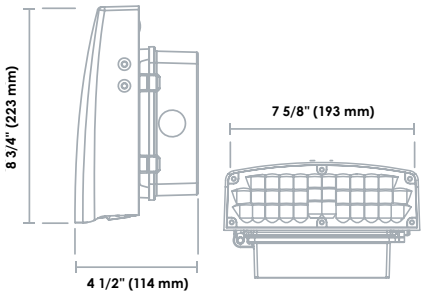


80 W

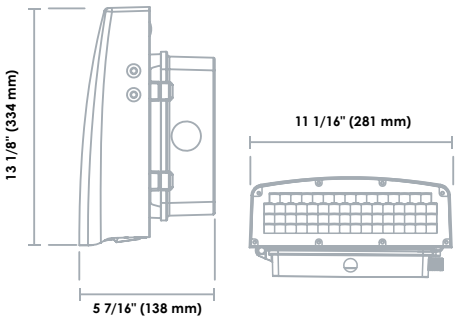
Order code	Description	Watts	Volts	Colour temp.	CRI	Life L70	Lumen output	Finish	Dimming capability	Traditionnal equivalent (W)		Case qty
		(W)	(VAC)	(K)		(hrs)	(lm)		(Yes/No)	MH	HPS	(master)
65571	LWP/SLM/S2/12W/40K/120-277/BRZ/STD	12	120-277	4 000	≥80	50 000	1 324	Bronze	No	50	-	8
65572	LWP/SLM/S2/30W/40K/120-277/BRZ/STD	30	120-277	4 000	≥80	50 000	3 337	Bronze	No	100	100	4
65573	LWP/SLM/S2/30W/40K/120-277/WH/STD	30	120-277	4 000	≥80	50 000	3 337	White	No	100	100	4
65578	LWP/SLM/S2/40W/40K/347/BRZ/STD	40	347-480	4 000	≥80	50 000	4 204	Bronze	Yes	150	100	4
65574	LWP/SLM/S2/50W/40K/120-277/BRZ/STD	50	120-277	4 000	≥80	50 000	5 349	Bronze	No	175	150	4
65575	LWP/SLM/S2/50W/40K/120-277/WH/STD	50	120-277	4 000	≥80	50 000	5 349	White	No	175	150	4
65576	LWP/SLM/S2/80W/40K/120-277/BRZ/STD	80	120-277	4 000	≥80	50 000	9 328	Bronze	Yes	250	200	2
65577	LWP/SLM/S2/80W/40K/120-277/WH/STD	80	120-277	4 000	≥80	50 000	9 328	White	Yes	250	200	2



12 W



30, 40, 50 W



80 W

ADJUSTABLE WALL PACK | IP65 RATING | WET | -40°C TEMPERATURE | 5 YEARS WARRANTY

Lumen values are derived from photometric testing
For a complete list of compatible dimmers and DLC qualified products, please visit www.standardpro.com

Stockholm

EURO WALL PACK FAMILY
Surface Mount High Abuse Series

We reserve the right to revise the design or components of any product without notice.

CATALOG #		TYPE
PROJECT/LOCATION		
APPROVED BY		

SPECIFICATIONS

- DRIVER — Universal Voltage 120/277v Electronic Driver is standard.
- DIFFUSER — Opal White Injection Molded Polycarbonate. Optional Ribbed Clear (RC) or Frosted (RF) Prismatic Polycarbonate.
- EMERGENCY — LED Remote Emergency Battery.
- FASTENERS — (4) Stainless steel tamperproof Torx screws to secure lens to backplate.
- FINISH— Extremely durable oven baked Polyester Powder Coat is Standard. Finishes include Black, Bronze or White.
- GASKETING — One Piece Die Cut 3/16" Thick Black EPDM.
- HOUSING — Marine Grade cast aluminum with injection-molded polycarbonate trim & diffuser.
- LIGHT ENGINE — Energy Efficient Light Emitting Diode (LED).
- COMPLIANCE — Built to comply with U.S. and Canadian Safety Standards. Suitable for Wet Locations.

STYLE A

STYLE B

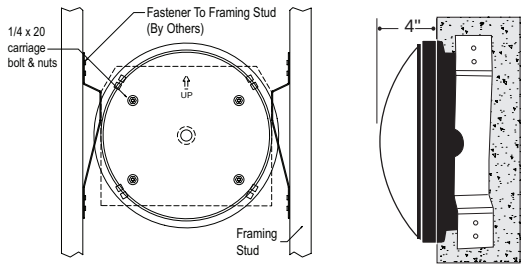
STYLE C

STYLE D

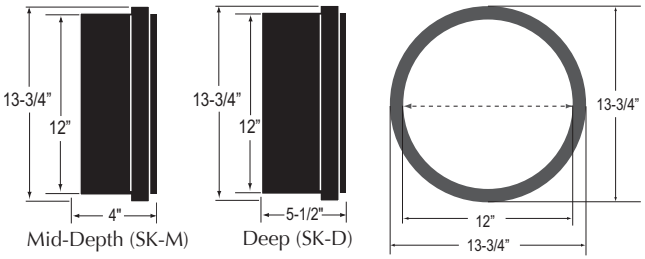
STYLE E

OPTIONS

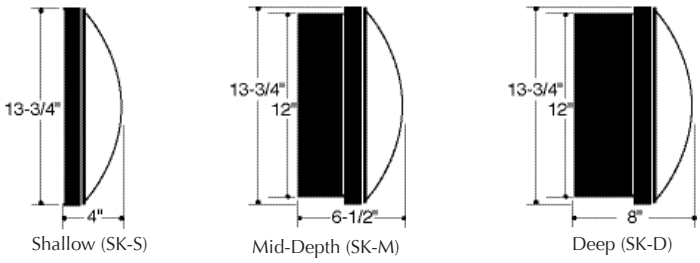
Shown with Semi-Recessed Option (SR)



Shown with Flat Lens Option (FL)—Available for LED ONLY



DIMENSIONS



9245 W. Ivanhoe St. I Schiller Park, IL 60176
P: 847-260-0333 I F:847-260-0344 I E: quotes@eclipselightinginc.com I W: eclipselightinginc.com

Stockholm

EURO WALL PACK FAMILY
Surface Mount High Abuse Series
LED

LAMP TYPE/QTY/WATTAGE[1] Visit www.eclipselightinginc.com for available IES files				
Fixture		STOCKHOLM Shallow	⚡STOCKHOLM Mid-Depth	STOCKHOLM Deep
Dimensions - W x H x D		13¾" dia. x 4" (ADA)	13¾" max dia. x 6½"	13¾" max dia. x 8"
Light Emitting Diode	LED	15/25w	⚡15w / ⚡25w / ⚡30w / ⚡40w / 50w	
**Consult Factory for CFL, HID, and Induction Lamping*				

⚡ SPEED OF LIGHT QUICK SHIP PROGRAM

- **Orders of 20pcs or Less Ship in 2 Weeks**
- **Options that are highlighted and feature the ⚡symbol are eligible for the Speed of Light quick ship program**

ORDERING GUIDE:

Series	Style	Lamp/Wattage	Color	Voltage	Finish	Options

SERIES
SK-S = Stockholm Shallow Casting Series (4" deep, ADA) —Not for Use with Side Conduit Entry
⚡SK-M = **Stockholm Mid-Depth Casting Series (6.5" deep)**
SK-D = Stockholm Deep Casting Series (8" deep)

STYLE
A = Style A: with Cage
⚡B = **Style B: no Cage**
⚡C = **Style C: Eyelid with Vertical Bar**
⚡D = **Style D: Eyelid**
E = Style E: Horizontal Bar

LAMP TYPE/QUANTITY/WATTAGE
Refer to Above Chart

LED COLOR TEMPERATURE
3K = ±3000K range
⚡4K = **±4000K range**
5K = ±5000K range
6K = ±6500K range

VOLTAGE
⚡120 = **120 Volts**
⚡277 = **277 Volts**
347 = 347 Volts
⚡EBU = **Universal Volt (120-277v) Electronic Driver**
2EBU = Two 120/277v Electronic Drivers

FINISH
BK = Black Finish
⚡BZ = **Bronze Finish**
SGR = Titanium Silver Gray – Standard
WH = White Finish

OPTIONS
9002 = Torx Tamperproof Screwdriver
9206 = Photocell – 120V (SK-M; SK-D Only)
9221 = Photocell – 277V (SK-M; SK-D Only)
9328 = Universal Photocell – 120/277V (SK-M; SK-D Only)
FUS = Single Fusing
GTD = Generator Transfer Device (Bodine)
RC = Ribbed Clear Lens[38]
RF = Ribbed Frosted Opal Lens
SR = Semi-Recessed[19]

LED OPTIONS
BL1 = Bi-Level Light (High/Low) — Single AC Input Feed, with Switch Sensor (Required)
BL2 = Bi-Level Light (High/Low) — Wired for Dual AC Input Feeds
D7 = 0-10V low-voltage dimming (100-30% Standard, Consult Factory for Other)
FLO = Opal White Flat Lens (LED Only; Not Avail. for SK-S)
FLP = Clear Prismatic Flat Lens (LED Only; Not Avail. for SK-S)
MSE = Motion Sensor External—Single circuit-all on, all off Specify Finish: White (WH)/Bronze (BZ)
MSE2 = Motion Sensor External— Dual circuit, half on half off Specify Finish: White (WH)/Bronze (BZ)
SG = 10KA Surge Protection for LED fixtures SK-M; SK-D Only (meets ANSI spec C62.41.2)

EMERGENCY BATTERY OPTIONS[3][55]
No onsite Emergency Power (AC or DC) is provided
Specify Fixture Voltage: 120V or 277V Power Feed
A=120V or B=277V

Integral Emergency Battery Options
EL82 = LED 4 Watt
EL85 = LED 20 Watt
EL88 = LED 16 Watt
NOTE: Integral Emergency Battery Option / Size Compatibility
- SK-S: None
- SK-M/D: All EL Options

Remote Emergency Battery Options[50]
REL61 = LED 12 Watt (Premium)
REL63 = LED 23 Watt (Premium)
REL67 = LED 23 Watt Cold Weather (Premium)
REL69 = LED 23 Watt (Premium)
REL82 = LED 4 Watt
REL85 = LED 20 Watt
REL88 = LED 16 Watt
REL98 = LED 14 Watt Cold Weather
REL109 = LED 10 Watt (CEC Compliant)
REL110 = LED 20 Watt (CEC Compliant)

NOTES:
[1] Consult Factory with requests regarding lamp sources, including LED, color temp., wattages or voltages not shown.
[3] Consult Factory for additional Emergency Battery options.
[19] Semi-Recessed: Medium & Deep Cast Only; 50w Max
[38] Ribbed Clear Lens with LED lamping should be used only with cage Style **"C"** or **"D"** if wall mounted
[50] Max WHIP length with the REL provided by the factory is 8 feet.
[52] Consult Factory for other Voltage
[55] Due to form and fit, final selection of the Battery Pack under discretion of Factory

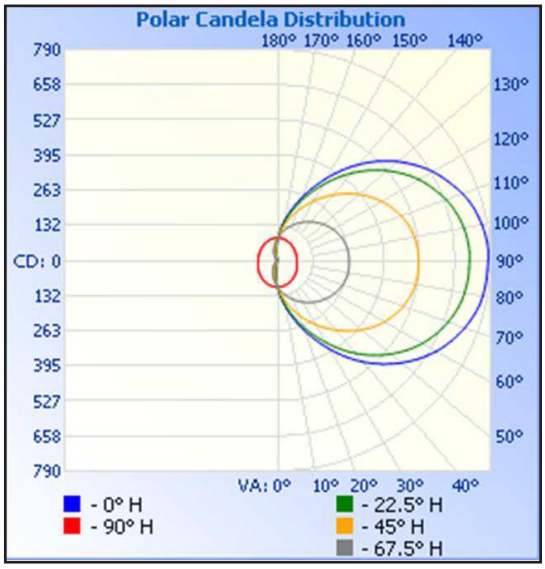
Tested in accordance with LM-79-80
The results contained in this summary report pertain only to the tested sample

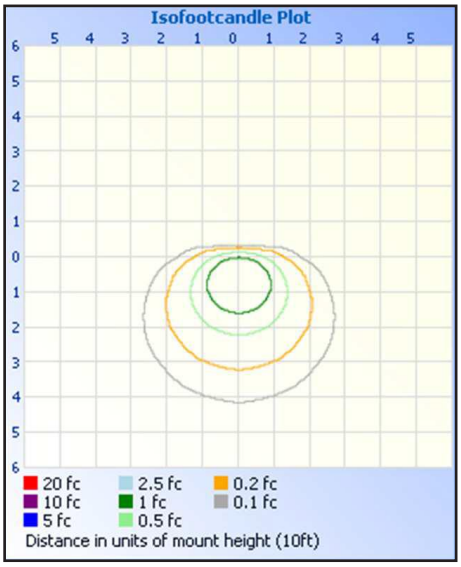
Electrical Test Condiotions						
Temp	Voltage	Current	Power	Power Factor	Current THD	BUG Rating
25ºC (±1ºC)	120	387.7mA	45.84	0.985	8.91%	B0-U4-G3

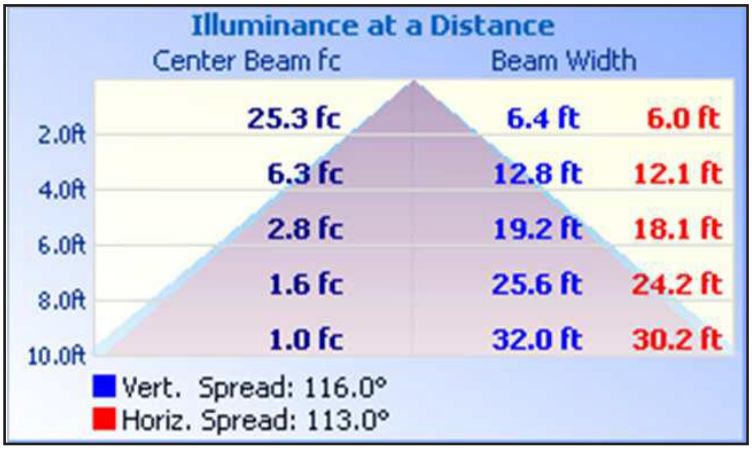
Summary of Results	
Total Lumen Output	2601
Efficacy *(Lm/W)*	56.74
CRI	85.7
CCT	4937
Duv	0.001

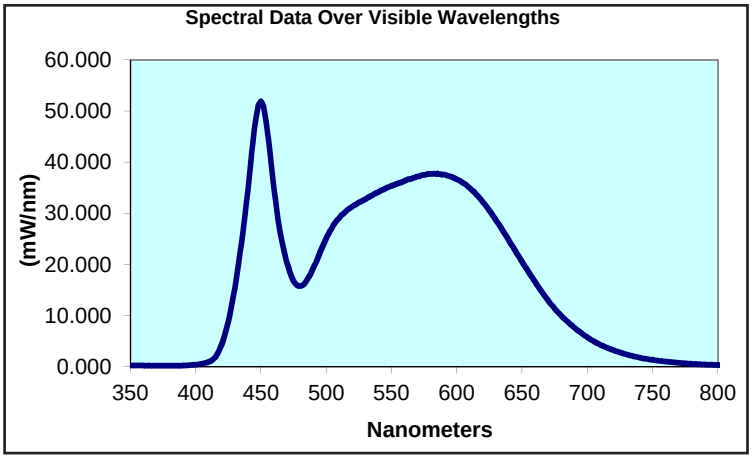
Zonal Lumen Summary		
Zone	Lumens	%Luminaire
0-30	101.9	4.1
0-40	200.1	8.0
0-60	529.4	21.1
60-90	746.8	29.8
0-90	1276	50.9
90-180	1230	49.1
0-180	2506	100.0

Chromaticity Coordinates	
Chromaticity (x)	0.347
Chromaticity (y)	0.354
Chromaticity (u')	0.212
Chromaticity (v')	0.486









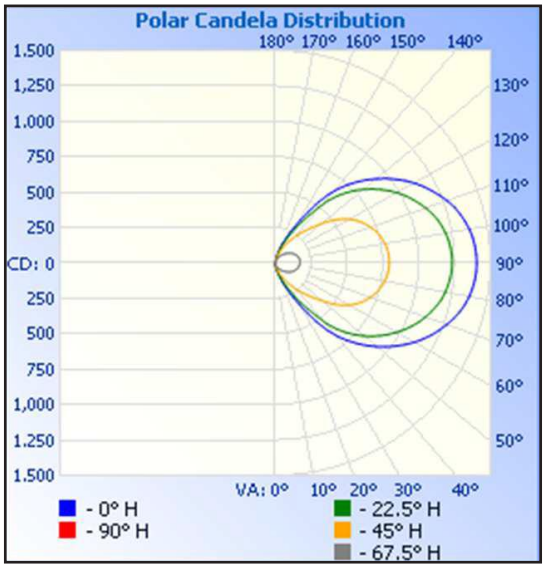
Tested in accordance with LM-79-80
The results contained in this summary report pertain only to the tested sample

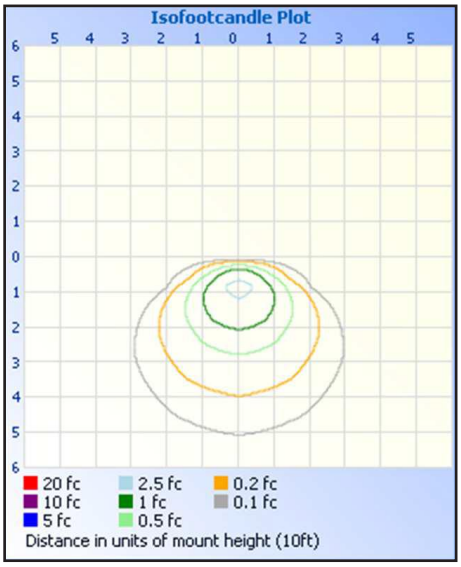
Electrical Test Condiotions						
Temp	Voltage	Current	Power	Power Factor	Current THD	BUG Rating
25ºC (±1ºC)	120	386.9mA	45.75	0.985	8.89%	B0-U5-G3

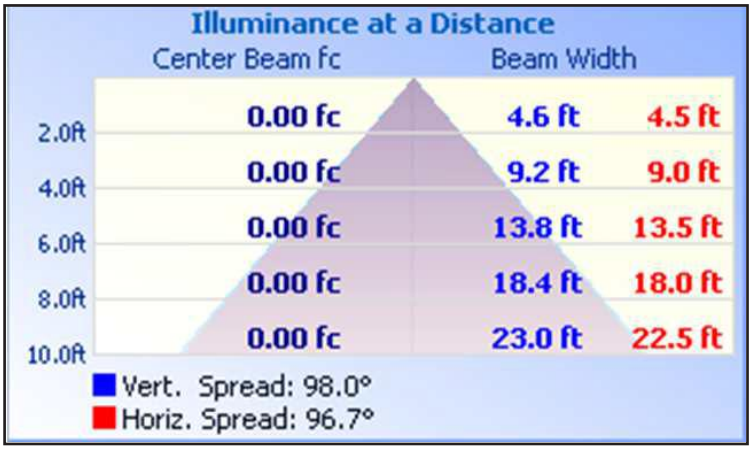
Summary of Results	
Total Lumen Output	3249
Efficacy *(Lm/W)*	71.02
CRI	84.6
CCT	5114
Duv	0.000

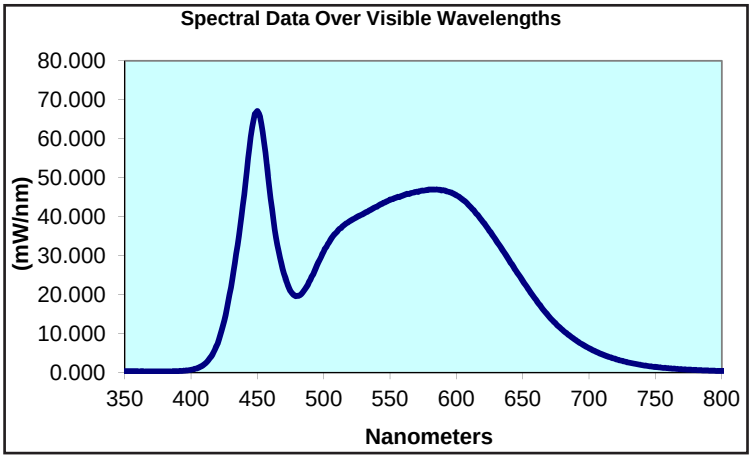
Zonal Lumen Summary		
Zone	Lumens	%Luminaire
0-30	32.8	1.1
0-40	105.3	3.4
0-60	477.4	15.4
60-90	1056	34.1
0-90	1533	49.6
90-180	1560	50.4
0-180	3093	100.0

Chromaticity Coordinates	
Chromaticity (x)	0.342
Chromaticity (y)	0.349
Chromaticity (u')	0.210
Chromaticity (v')	0.483









May 25, 2010

Pacific Ref: FV636 – R1

City of Surrey
Corporate Facilities
14245 - 56 Avenue
Surrey, BC
V3X 3A2

Attention: **Ryan Cole, *Engineering Assistant, Operations & Maintenance***
Email: ***rwcole@surrey.ca***

Reference: **Hazardous Materials Survey – Fire Hall No. 8, 17572 57th Avenue, Surrey, BC**

In reference to the above subject matter, **Pacific Environmental Consulting (PEC)** has, in accordance with your request, completed a hazardous materials survey of the planned renovation areas of the building located at the above address to document the presence of asbestos-containing materials and any other hazardous materials prior to renovations. This survey was completed on May 17th, 2010 and we report the following.

1.0 Site Inspection

.1 Asbestos - Containing Materials

All accessible areas of the renovation areas were inspected and representative samples of building materials suspected of containing asbestos were collected for analysis for the presence of asbestos fibres. The renovation areas including the scope of work for each work area include the following:

Ground Floor:
1. East Truck Bay: installation of two partition walls.
2. North Wall, Roll-up Door: removal of roll-up door and installation of window.
3. South Entrance to Fire Truck Bay: removal of wood door and wood door frame.

Upper Floor:
4. South-East Stairs: removal of wood door and wood door frame.
5. North-West Lounge: removal of elevated platform and vinyl floor tile.
6. Locker Room, Men's Washroom: installation of mop sink.

A total of nine (9) samples of materials suspected of containing asbestos were collected including; drywall joint compound, sheet vinyl flooring and vinyl floor tile. All samples were analyzed at the in-house laboratory of **Pacific Environmental Consulting** in accordance with the NIOSH Analytical Method 9002.

All samples will be stored at our laboratory for a period of one month before being disposed of. Should you wish to keep these samples for longer please notify us within this period.

.2 Lead - Paint

A total of three (3) samples of paint suspected of containing lead were collected. The samples were submitted in a labelled and sealed container to Maxxam Analytics for lead analysis using Inductively Coupled Plasma Spectroscopy (ICAP) and/or Inductively Coupled Plasma/Mass Spectroscopy.

2.0 Results

.1 Asbestos-Containing Materials

A summary of identified asbestos-containing materials is given below:

Table 1. Asbestos Containing Materials

Location	Description
Upper Floor, South-East Stairs Upper Floor, Elevated Platform and Floor, North-West Lounge	Beige/Brown Vinyl Floor Tile

A copy of our complete laboratory Asbestos Bulk Sample Spreadsheet is attached to this report for your information and records.

.2 Lead - Paint

The Hazardous Products Act requires a level of 0.06% or lower for lead in paint (or 600 μg/g) in new products. If the Hazardous Products Act is applied, the samples collected do not show elevated levels of lead.

Table 2. Lead Results

Sample Number	Location	Lead Concentration (ug/g)	Hazardous Products Act (ug/g)
L01	Yellow Paint, Wood Door Frame, South Entrance to Fire Truck Bay	**178**	**600**
L02	Beige Paint, South Entrance to Fire Truck Bay	**66**	
L03	Dark Beige Paint, Wood Door Frame, Upper Floor South-East Stairs	**39**	

3.0 Conclusions & Recommendations

.1 Asbestos - Containing Materials

Six bulk samples of drywall joint compound were collected and tested. All samples of drywall joint compound were non asbestos-containing.

Two bulk samples of sheet vinyl flooring were collected and tested. The sample of sheet flooring collected from the south entrance to the Fire Truck Bay is non asbestos-containing. The sample of sheet flooring collected from the upper floor locker room in the Men's Washroom is non asbestos-containing.

One representative bulk sample of vinyl floor tile was collected and analyzed. The vinyl floor tile collected from the upper floor south-east stairs was found to be **asbestos containing**. This vinyl floor tile is also present on the elevated platform and floor of the north-west lounge area on the upper floor.

Please note that there may be concealed materials in this building that have not been identified. If untested materials are uncovered during renovations. **PEC** recommends that work stop immediately until it has been tested for the presence of asbestos.

All materials found to be asbestos-containing must be removed be a reputable asbestos abatement contractor before any renovation work is carried out. Removal of asbestos containing materials must be done in accordance with WorkSafe BC regulations, see section 4.0.

.2 Lead – Paint

The samples collected do not show elevated levels of lead.

4.0 WorkSafeBC Regulatory Requirements

Prior to the performance of any work that may disturb asbestos-containing materials it is a regulatory requirement that a qualified person perform a Risk Assessment. This requirement is in compliance with the WorkSafeBC Occupational Health & Safety (OH&S) Regulation *Part 6 "Substance Specific Requirements";* specifically Section 6.6 subsections (1), (2), (3) and (4).

The abatement of the asbestos-containing vinyl floor tile must be carried out using **Moderate Risk** asbestos abatement procedures, and must include as a minimum requirement.

- Supply appropriate notification to WorkSafeBC,
- Personal Protective Equipment must include HEPA-equipped half face air purifying respiratory protection and approved disposable coveralls,
- Application of water to the asbestos materials being disturbed,
- Segregation of the work area by the use of polyethylene sheeting, warning signs and banner tape,
- HEPA equipped vacuum(s),
- Air monitoring.

To comply with Part 6 of the WorkSafeBC OH&S Regulation, specifically Section 6.32 pertaining to documentation, the **City of Surrey** should acquire copies of the asbestos abatement contractor's Notice of Project (NOP), abatement procedures, any air monitoring results and all documentation submitted to WorkSafeBC. These documents are required to be maintained for a period of 10 years.

The successful asbestos abatement contractor must not list **PEC** as the Consultant on their NOP and asbestos abatement procedures unless **PEC** is actually engaged as the Consultant during the abatement phase. If **PEC** is engaged solely as the air monitoring agency, then this distinction must be clearly indicated.

5.0 Limitations

This report is intended for the exclusive use of the **City of Surrey** to determine the likely locations of asbestos-containing materials prior to renovations to this property. The use of this document for any other purpose is at the sole risk of the user.

This report is not a Specification or Scope of Work and the use of this document as such will be at the sole risk of the user.

The contents of this report were based on a site visit conducted by **Pacific Environmental Consulting** personnel. Please note that some asbestos products may not have been accessible on the day of our survey, and may remain unidentified following our survey. Asbestos products are sometimes used behind wall partitions or on mechanical systems located in pipe chases or other concealed areas.

6.0 Statement of Qualifications

Pacific Environmental Consulting and Occupational Hygiene Services have been providing consulting services in the environmental and industrial hygiene fields since 1990. Our industrial hygiene expertise ensures that all projects are performed in accordance with the WorkSafe BC Occupational Health and Safety Regulation. Our staff includes the following:

- Professional Engineer(s) (BC)
- Certified Industrial Hygienist (CIH)
- Registered Professional Biologist (RPBio.)
- Canadian Registered Safety Professional(s) (CRSP)
- Certified Health and Safety Consultant (CHSC)
- Applied Science Technologist(s) (AScT)
- Registered Occ. Hygiene Technologists (ROHT)

Pacific Environmental Consulting and Occupational Hygiene Services (Vancouver) also carries Environmental Errors & Omissions Liability and Comprehensive General Liability Insurance.

Pacific Environmental Consulting thanks you for the opportunity of performing this work on your behalf. Should you have any outstanding questions or require any additional information, please contact the writer.

Yours truly,

Anna Goulet, B.Sc.
Project Manager
Field Work and Report

Norman Richardson, AScT, CRSP, CHSC
Senior Project Manager
Reviewt

Bulk Sample Results

Project Number: FV636
Client Name: City of Surrey

NO.	DATE	SAMPLE INFORMATION		DESCRIPTION	ASBESTOS	OTHER	ANALYST
1	18-May-2010	Ground Floor	1	White Paint	None Detected	NF 100%	HA
		S Entrance	2	White Chalky Mix	None Detected	2% Cell, 98% NF	
		To Fire Truck Bay					
		Drywall Joint Compound					
2	18-May-2010	Ground Floor	1	White Vinyl	None Detected	2% Cell, 98% NF	HA
		S Entrance	2	Grey Fibrous Backing	None Detected	60% Cell, 40% NF	
		To Fire Truck Bay					
		Sheet Vinyl Flooring					
3	18-May-2010	Upper Floor	1	Beige Vinyl	Chrysotile (1-10%)	2% Cell, 96% NF	HA
		SE Stairwell	2	Black Mastic	None Detected	5% Cell, 95% NF	
		Vinyl Floor Tile					
4	18-May-2010	Ground Floor	1	White Paint	None Detected	NF 100%	HA
		E Bay	2	White Chalky Mix	None Detected	2% Cell, 98% NF	
		Drywall Joint Compound					
5	18-May-2010	Ground Floor	1	White Paint	None Detected	NF 100%	HA
		N Roll up Door	2	White Chalky Mix	None Detected	2% Cell, 98% NF	
		Drywall Joint Compound					

Analysis by NIOSH 9002 AIHA BAPAT Lab #185672 Method detection limit is 1%. NF=Non Fibrous, Cell=Cellulose, FG=Fibre Glass Report printed on 20-May-2010

Bulk Sample Results

Project Number: FV636
Client Name: City of Surrey

NO.	DATE	SAMPLE INFORMATION		DESCRIPTION	ASBESTOS	OTHER	ANALYST
6	18-May-2010	Upper Floor	1	White Paint	None Detected	NF 100%	HA
		SE Stairwell	2	White Chalky Mix	None Detected	2% Cell, 98% NF	
			3	White Gypsum	None Detected	2% Cell, 98% NF	
		Drywall Joint Compound					
7	18-May-2010	Upper Floor	1	White Vinyl	None Detected	2% Cell, 98% NF	HA
		SW Locker Room	2	Grey Fibrous Backing	None Detected	60% Cell, 40% NF	
		Men's WC					
		Sheet Vinyl Flooring					
8	18-May-2010	Upper Floor	1	White Paint	None Detected	NF 100%	HA
		SW Locker Room	2	White Chalky Mix	None Detected	2% Cell, 98% NF	
		Men's WC					
		Drywall Joint Compound					
9	18-May-2010	Upper Floor	1	Gypsum	None Detected	2% Cell, 98% NF	HA
		NW Lounge Area	2	NCP		NO COMPOUND PRESENT	
		Drywall Joint Compound					

Total Number of Samples 9

Analysis by NIOSH 9002 AIHA BAPAT Lab #185672 Method detection limit is 1%. NF=Non Fibrous, Cell=Cellulose, FG=Fibre Glass Report printed on 20-May-2010

Your C.O.C. #: G002991

Attention: Anna Goulet
PACIFIC ENVIRONMENTAL
NORTH VANCOUVER
1336 Main Street
North Vancouver, BC
CANADA V7J 1C3

Report Date: 2010/05/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B034227
Received: 2010/05/18, 15:48

Sample Matrix: PAINT
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICP-AES (acid extr. solid)	3	2010/05/19	2010/05/19	65-S-60	Based on BCMOE-SALM

* Results relate only to the items tested.

Encryption Key

Crystal Ireland
21 May 2010 09:25:23 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

CRYSTAL IRELAND, Burnaby Customer Service
Email: Crystal.Ireland@MaxxamAnalytics.com
Phone# (604) 638-5016

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

PACIFIC ENVIRONMENTAL

Maxxam Job #: B034227
Report Date: 2010/05/21

LEAD IN PAINT CHIPS (PAINT)

Maxxam ID		U20784	U20785	U20786		
Sampling Date		2010/05/18	2010/05/18	2010/05/18		
	Units	**L01**	**L02**	**L03**	**RDL**	**QC Batch**
Total Metals by ICP						
Total Lead (Pb)	mg/kg	178	66	39	2	3967027

RDL = Reportable Detection Limit

Maxxam Job #: B034227
Report Date: 2010/05/21

General Comments

PACIFIC ENVIRONMENTAL

Maxxam Job #: B034227
Report Date: 2010/05/21

QUALITY ASSURANCE REPORT

			Method Blank		RPD	
QC Batch	Parameter	Date	Value	Units	Value (%)	QC Limits
3967027	Total Lead (Pb)	2010/05/19	<2	mg/kg	0.5	35

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

CLIENT:

CITY OF SURREY

14245 - 56th Avenue

Surrey, BC

PROJECT:

AIM PROGRAM

Asbestos Identification and Management Program

FIRE HALL #8

17572 - 57th Avenue

Surrey, BC

REF: **9020FH8.E-AIM**

DATE: **June 2010**

AIM E-Copy

#101-Bldg.C-17802-66th Avenue
Cloverdale, BC, Canada V3S 7X1
Tel: 604-575-1122 Fax: 604-575-1152

TABLE OF CONTENTS

ANNUAL REVIEW OF AIM PROGRAM

The Workers' Compensation Board of British Columbia Occupational Health and Safety Regulation requires that this program be reviewed at least annually. The annual review shall incorporate a reassessment of the potential hazard by a qualified person, remedial action as required, review and update of the asbestos materials inventory.

LOCATION OF AIM REPORT COPIES

Copy #1 of 3 - Contact: Mr. Farhad Alizadeh, Facilities, Maintenance & Operations Manager
Location: City of Surrey
Facilities Management, Operations and Maintenance
6645 - 148th Street, Surrey, BC
Phone: 604-590-7297
Fax: 604-599-8794

Copy #2 of 3 - _____

_____

Copy #3 of 3 - _____

_____

1.0 INTRODUCTION

"Asbestos" is a generic term that describes a variety of naturally occurring mineral silicates that separate into fibres. Asbestos fibres are incombustible, possess high tensile strength, yet remain flexible, and have outstanding thermal and electrical insulating properties. Asbestos fibres also have excellent acoustical properties, and good chemical resistance. These unique physical properties are the reason asbestos became a popular ingredient or component in a wide variety of industrial and commercial building products.

Respiratory diseases such as asbestosis, lung cancer, and mesothelioma have been associated with occupational exposure to asbestos fibres in shipbuilding, mining, milling, fabricating and construction industries where asbestos products were manufactured or used. Most of the medical knowledge concerning the adverse health effects associated with the inhalation of asbestos fibres has come from the study of workers who were routinely exposed to high levels of airborne asbestos fibres over extended time periods. A latency period of between 10 and 35 years is common between initial exposure and recognizable symptoms of asbestos related disease. Medical evidence also indicates that cigarette smoking greatly enhances the disease potential of asbestos exposure.

In the past, asbestos containing building materials were used extensively in the construction of public and commercial buildings. Asbestos was commonly used in floor tiles, sheet flooring, gypsum board filling compound, acoustic plaster, acoustic ceiling tiles, thermal and electrical insulation, fireproofing, cement pipe, cement sheeting, insulation on boilers pipes and ducts, firedoor liners, textiles, coatings, mastics, and roofing materials.

Certain types of asbestos containing materials are considered more hazardous than others. The term "friable" refers to a material that when dry can be easily crumbled, pulverized, or reduced to powder by hand pressure. "Friable" may also describe a previously non-friable material that has deteriorated or becomes broken or damaged by mechanical force. The asbestos fibres in "non-friable" materials are bound within a matrix, or are mixed with binder agents, and do not become airborne as easily as friable materials. In general the more friable an asbestos containing material is, the greater the potential for airborne fibre release.

The mere presence of asbestos containing materials in a building does not necessarily mean that the health of the building occupants is endangered. Intact asbestos containing materials that are not damaged or disturbed are not likely to release asbestos fibres into the air, and therefore do not pose a health risk. Asbestos containing materials may, however, become hazardous as a result of damage, deterioration, or a physical disturbance such as renovations or maintenance activities.

The hazards associated with asbestos can be eliminated by preventing the occurrence of airborne asbestos fibres. The **A**sbestos **I**dentification and **M**anagement (**AIM**) Program that has been installed in this facility is designed to ensure that the day to day operations and maintenance of the building is performed in a manner that avoids the release of asbestos fibres into the air, and ensures proper control and cleanup if asbestos containing materials are inadvertently disturbed.

The principal objective of the **AIM Program** is to incorporate a plan of education, training, surveillance, and safe work practices to maintain asbestos containing materials in good condition, while preventing the exposure of custodial and maintenance personnel, contracted trades, and building occupants to asbestos fibres.

Conscientious administration of the **AIM Program** can control the release of asbestos fibres until the asbestos containing materials in the building are removed during a scheduled maintenance, renovation, or demolition project.

2.0 AIM PROGRAM PARTICIPANTS AND RESPONSIBILITIES

2.1 AIM PROGRAM MANAGER

The **AIM Program Manager** for this facility is:

Mr. Farhad Alizadeh, Facilities, Maintenance & Operations Manager
City of Surrey
Facilities Management, Operations and Maintenance
6645 - 148th Street, Surrey, BC
Phone: 604-590-7297 **Fax:** 604-599-8794

Overall responsibility and authority for the administration of the **AIM Program** has been assigned to the **AIM Program Manager** who shall:

a) Implement and manage the **AIM Program** in a conscientious manner, and be qualified through training and experience in the safe handling of asbestos, in accordance with the Workers' Compensation Board of British Columbia requirements. The **AIM Program Manager** must be actively involved in the planning of renovations and maintenance activities, and all asbestos related work activities.

b) Ensure that the location of asbestos containing materials and presence of potential asbestos containing materials are documented in a written inventory. The condition, friability, and accessibility of asbestos containing materials must be assessed to determine the potential for fibre release. Damaged, deteriorated or exposed friable asbestos containing materials are to be repaired or removed as required to prevent the release of airborne asbestos fibres.

c) Inform building occupants, custodial and maintenance personnel as well as contracted trades about the presence and location of asbestos containing materials, the hazards of asbestos exposure including safe work procedures that must be followed when working in close proximity to, or contacting asbestos containing materials, in order to prevent asbestos fibres from becoming airborne.

d) Develop and implement a surveillance program to monitor the condition of asbestos containing materials throughout the facility. Damaged or deteriorated asbestos containing materials must be promptly removed, enclosed, or encapsulated to prevent the release of airborne asbestos fibres. A formal reevaluation of the **AIM Program** must be performed at least annually. The annual reevaluation shall incorporate reassessment of the potential hazard, remedial action as required, and an update of the written inventory.

e) Ensure that a "Notice of Project Asbestos" (N.O.P.A.) is sent to the Workers' Compensation Board of British Columbia prior to having a qualified contractor perform work activities that involve asbestos containing materials. Detailed site specific work procedures and risk assessment by the qualified contractor must be submitted with the N.O.P.A.

f) Develop and maintain written work procedures for all service and maintenance activities involving asbestos containing materials, if and when necessary.

g) Monitor and review work performed by custodial and maintenance personnel including contracted trades to ensure that their work activities are not disturbing asbestos containing materials.

h) Renovations and maintenance activities increase the potential for disturbance of asbestos containing materials. Prior to conducting renovation and maintenance projects, the **AIM Program Manager** will review the project in order to determine if asbestos containing materials may be disturbed, and take

appropriate action as necessary to prevent airborne fibre release. The **AIM Program Manager** will ensure that safe work practices in accordance with the Workers' Compensation Board of British Columbia requirements will be followed by trained and qualified personnel prior to authorizing renovation or maintenance projects involving asbestos containing materials. The **AIM Program Manager** must also see Section 2.4 of this report for project planning.

2.2 MAINTENANCE AND CUSTODIAL PERSONNEL (Including Contracted Trades and Services)

Maintenance and custodial personnel shall:

a) be familiar with the presence and location of asbestos containing materials, and the **AIM Program**.

b) avoid disturbing asbestos containing materials to prevent asbestos fibres from becoming airborne.

c) if required to contact asbestos containing materials or perform work in close proximity to asbestos containing materials be trained in the safe handling of asbestos containing materials and have a clear understanding of the Workers' Compensation Board **Occupational Health and Safety Regulation Part 6: Substance Specific Requirements, Sections 6.1 to 6.32**. All asbestos related work activities must be authorized by the **AIM Program Manager** prior to starting work.

d) have all renovation, maintenance or service work at risk of disturbing asbestos containing materials authorized by the **AIM Program Manager** prior to commencing work.

e) inform the **AIM Program Manager** immediately when damage or disturbance of asbestos containing materials occurs or is discovered.

2.3 INSPECTION BY TRAINED PERSONNEL (QUALIFIED PERSON)

Trained Personnel shall:

a) inspect all asbestos containing materials, at least annually, for damage and deterioration, and submit the findings in a written report to the **AIM Program Manager** for updating existing documentation.

2.4 OWNER'S RESPONSIBILITY AND PROJECT PLANNING

Prior to a renovation or demolition project, the Owner must conduct a separate survey of all hazardous building materials within the subject area(s) of the building(s) in accordance with WCB Occupational Health and Safety Guideline G20.112. Listed below is the applicable regulation from the Workers' Compensation Board of British Columbia Occupational Health and Safety Regulation regarding pre-project hazardous building material assessments, which is required regardless of the contents of this report. However, this report which is designed to meet the requirements of regulation 6.4 may be a "useful aid in conducting the inspection specified in [Regulation] section 20.112".

PART 20: CONSTRUCTION, EXCAVATION AND DEMOLITION

Hazardous materials 20.112 Before work begins on the demolition or salvage of machinery, equipment, buildings or structures, the employer or owner must

(a) inspect the site to identify any asbestos, lead or other heavy metal or toxic, flammable or explosive materials that may be handled, disturbed or removed.

(b) have the inspection results available at the worksite, including any drawings, plans or specifications, as appropriate, to show the locations of any hazardous substances,

(c) ensure that any hazardous materials found are safely contained or removed, and

(d) if hazardous materials are discovered during demolition work that were not identified in the inspection required by paragraph (a), ensure that all work ceases until such materials are contained or removed.

3.0 AIM INVENTORY REPORT

It is the intention of this section of the report to document the type and location of accessible asbestos containing materials at Fire Hall #8 located at 17572 - 57th Avenue, Surrey, BC.

3.1 ASBESTOS CONTAINING MATERIALS AND POTENTIAL ASBESTOS CONTAINING MATERIALS

The following is a general description of **asbestos containing** and potential asbestos containing materials throughout the building:

a) **Flooring** - The floor tiles located in several areas of the building have been sampled and identified as **asbestos containing**. The floor tile adhesives, sheet flooring, jute backed sheet flooring, paper backed sheet flooring, and some ceramic tile grouts and mortars have been sampled and identified as non-asbestos. Other ceramic tile grouts and mortars, and flooring materials not specifically sampled and/or concealed beneath other flooring materials and carpets, should be considered as **asbestos containing** until such time as laboratory analysis determines otherwise. Asbestos and potential asbestos fibres are encapsulated within a non-asbestos vinyl compound or cementitious matrix, and in their present undisturbed condition do not pose a hazard to building occupants.

b) **Filling Compounds on Gypsum Board** - Filling compounds on gypsum board wall and ceiling systems have been sampled and identified as non-asbestos.

c) **Loose Fill Vermiculite Insulation** - Loose fill vermiculite insulation may be located within the cavities of concrete block walls at the building. Loose fill vermiculite insulation can be described as a friable potential **asbestos containing** material that is considered to be concealed and safely enclosed within the wall cavities, and in an undisturbed condition does not pose a hazard to building occupants.

d) **Mechanical Insulations** - The insulation on the mechanical piping system has been identified as non-asbestos.

e) **Mastic on Joints of Ductwork** - The grey mastic on joints of ductwork has been sampled and identified as non-asbestos. The potential mastic on joints of some ductwork within inaccessible wall cavities and/or ceiling spaces and other undiscovered mastics not specifically sampled and identified as non-asbestos, should be considered as **asbestos containing** until such time as laboratory analysis determines otherwise. The concealed/undiscovered mastics can be described as non-friable potential **asbestos containing** materials that are considered to be safely encapsulated within a non-asbestos asphaltic matrix, and in their present undisturbed condition do not pose a hazard to building occupants.

f) **Firestop Grout** - The firestop grout located at chimney penetrations in the Furnace Room has been sampled and identified as **asbestos containing**. The firestop grout located around the firedoor of the Furnace Room has been sampled and identified as non-asbestos. Firestop materials not specifically sampled and identified as non-asbestos, should be considered as **asbestos containing** until such time

as laboratory analysis determines otherwise. The **asbestos containing** firestop grout can be described as a non-friable **asbestos containing** material that is considered to be safely encapsulated within a non-asbestos cementitious matrix, and in its present undisturbed condition does not pose a hazard to building occupants.

g) **Firestop Putty** - The firestop putty located at telephone cabinet penetrations in the Electrical Closet has been sampled and identified as **asbestos containing**. Firestop materials not specifically sampled and identified as non-asbestos, should be considered as **asbestos containing** until such time as laboratory analysis determines otherwise. The **asbestos containing** firestop putty can be described as a non-friable **asbestos containing** material that is considered to be safely encapsulated within a non-asbestos putty-like matrix, and in its present undisturbed condition does not pose a hazard to building occupants.

h) **Paper Tape on Ductwork** - The potential paper tape located on ductwork within inaccessible wall cavities and ceiling spaces should be considered as **asbestos containing** until such time as laboratory analysis determines otherwise. The concealed/undiscovered paper tape can be described as a friable potential **asbestos containing** material that is considered to be safely enclosed within the wall cavities and ceiling spaces of the building, and in its present undisturbed condition does not pose a hazard to building occupants.

i) **Stucco on Exterior Walls** - Stucco concealed on former exterior wall (east wall of West Vehicle Bays) and may be concealed beneath wood on other exterior walls has been sampled and identified as non-asbestos.

j) **Sealant in Window Units** - The concealed sealants in the Captain's Office interior window and in exterior windows at the building should be considered as **asbestos containing** until such time as laboratory analysis determines otherwise. The sealant can be described as a non-friable potential **asbestos containing** material that is considered to be safely encapsulated within a non-asbestos putty-like matrix, and in its present undisturbed condition does not pose a hazard to building occupants or the environment.

k) **Roofing Materials** - In order to avoid damaging membrane roofing systems, roofing materials have not been sampled. Roof membranes and mastics should be sampled prior to roof repair, membrane replacement, or demolition. All roof membranes and mastics should be considered as **asbestos containing** until such time as laboratory analysis determines otherwise. The fibrated roofing membranes, papers, felts, mastics, sealants, and caulkings can be described as non-friable potential **asbestos containing** materials that are considered to be safely encapsulated within a non-asbestos asphaltic matrix, and in their present undisturbed condition do not pose a hazard to building occupants or the environment.

In order to facilitate the day to day operations of the building, the **AIM Program** survey format is concerned primarily with friable accessible asbestos containing materials. This program makes no attempt to investigate areas such as inaccessible floor cavities, wall cavities, or ceiling cavities that would require dismantling portions of the building in order to gain access.

Prior to initiating renovations, maintenance, or service activities that would involve disturbing potential asbestos containing materials, bulk material samples must be collected and analyzed to determine the presence or absence of asbestos. **See Section 2.4 of this report**.

In the meantime, if it becomes necessary to either cut, drill, abrade, or otherwise disturb these asbestos containing or potential asbestos containing building materials, the work must be performed by a qualified contractor's trained personnel in accordance with the Workers' Compensation Board of British Columbia **Occupational Health and Safety Regulation Part 6: Substance Specific Requirements, Sections 6.1 to 6.32**.

3.2 MAIN FLOOR

Furnace Room
- **Asbestos** containing grey firestop grout at exhaust pipe and other chimney penetrations (some concealed).
- Non-asbestos grout around metal firedoor.
- Non-asbestos red sealant at chimney penetration.

Workshop
- Non-asbestos grey mastic on ductwork.
- No asbestos materials observed.

Rear Entrance Foyer
- No asbestos materials observed.

Rear Hallway to East Vehicle Bays, and
Washroom (adjacent to Rear Entrance Foyer)
- Potential **asbestos** containing ceramic tile grouts and mortars.

Lounge
- Potential **asbestos** containing flooring materials (concealed beneath carpet).

Exercise Room (former East Vehicle Bay),
East Vehicle Bays/Storage Area,
Hose Tower, and
Gear Room (Former Vehicle Bay)
- No asbestos materials observed.

Electrical Closet (accessed from Gear Room)
- **Asbestos** containing firestop putty at telephone cabinet penetrations (some concealed).

Former Centre Vehicle Bay (north of Gear Room)
- No asbestos materials observed.

Front Entrance Foyer/Dispatch,
Bedroom (south of Front Entrance Foyer/Dispatch), and
Storage Room beneath Stairwell
- **Asbestos** containing floor tiles (some concealed).

Front Stairwell to Second Floor, and
Rear Stairwell to Second Floor
- **Asbestos** containing floor tiles (some concealed) at top landings.
- Non-asbestos vinyl flooring and adhesive on stairs and risers.

West Vehicle Bays
- Non-asbestos grey mastic on joints of vehicle exhaust system ductwork.
- No asbestos materials observed.

Wall Cavities and Ceiling Spaces
- Potential **asbestos** containing loose fill vermiculite insulation concealed within concrete block walls.
- Potential **asbestos** containing paper and/or paper tape on ductwork, wood, and at registers.
- Non-asbestos stucco on former exterior wall(s) (viewed from Electrical Closet).

3.3 SECOND FLOOR

Main Hallway,
Southeast Corner Bedroom,
Kitchen,
Lounge,
Northwest Corner Meeting Room, and
Dorm

- **Asbestos** containing floor tiles (some concealed).

Captain's Office

- Potential **asbestos** containing sealant (concealed) in interior window unit.

Centre Washroom

- Non-asbestos sheet flooring.
- No asbestos materials observed.

West Washroom

- Non-asbestos ceramic floor tile grout and mortar.
- Non-asbestos paper backed sheet flooring in locker alcove.
- No asbestos materials observed.

Wall Cavities and Ceiling Spaces

- Potential **asbestos** containing loose fill vermiculite insulation concealed within concrete block walls.
- Potential **asbestos** containing paper and/or paper tape on ductwork, wood, and at registers.
- Non-asbestos stucco on former exterior wall(s) (viewed from Electrical Closet).

3.4 EXTERIOR

Walls

- Potential **asbestos** containing loose fill vermiculite insulation concealed within concrete block walls.

Windows

- Potential **asbestos** containing sealant in exterior window units (concealed).

Rooftops

- Potential **asbestos** containing roofing papers, felts, mastics, membranes, and patching compounds on rooftops.
- Potential **asbestos** containing caulkings/mastics/sealants at parapet walls, metal flashings, exhaust vents, electrical/plumbing penetrations, etc.

Ref: 9020FH8.AIM

Appendix A

Contingency Plan
Emergency Clean Up
Work Procedures

FIRE HALL #8
17572 - 57TH AVENUE, SURREY, BC

CONTINGENCY PLAN - EMERGENCY CLEAN UP WORK PROCEDURES

Special precautions will be required in order to minimize the spread of asbestos fibres in the event of an inadvertent disturbance or deterioration of asbestos containing materials. In the event of a fibre release incident the following procedures are to be observed.

a) Do not attempt to clean up asbestos containing materials without prior authorization from the **AIM Program Manager**.

b) Isolate the area from the rest of the building by closing doors and/or erecting barriers to restrict access to area.

c) Post signs at all conceivable entrances to the area to prevent personnel not involved in the clean up operation from inadvertently entering the area.

d) Where practicable, all heating, cooling, and air conditioning system (HVAC) components that are in, supply, or pass through the area must be shut down and isolated. All intake and exhaust vents in the area should be sealed with polyethylene and tape.

e) Contact the **AIM Program Manager**:

Mr. Farhad Alizadeh
Facilities, Maintenance and Operations Manager

City of Surrey
Facilities Management, Operations and Maintenance
6645 - 148th Street
Surrey, BC V3S 3C7

Phone: 604-590-7297 **Fax:** 604-599-8794

The **AIM Program Manager** will arrange for the cleanup to be performed by trained and qualified personnel following safe work practices in accordance with the Workers' Compensation Board of British Columbia Occupational Health and Safety Regulation.

FIRE HALL #8
17572 - 57TH AVENUE, SURREY, BC

WORK PROCEDURES FOR
CLEANUP OF MINOR AMOUNTS OF ASBESTOS CONTAINING DEBRIS

INTRODUCTION

The purpose of this work procedure is to allow trained workers to safely deal with areas in the building where minor amounts of friable asbestos debris are encountered. These work procedures are not adequate for removing more than a small amount of asbestos debris. Work activities which involve a significant amount of asbestos materials may require more stringent work procedures.

PART 1.0 - NOTICE OF PROJECT AND WORKER TRAINING:

1.1 Written notification of proposed work activities involving asbestos, along with site specific work procedures including schedule and location will be sent to the applicable Occupational Hygiene Officer at the Workers' Compensation Board of British Columbia. A copy of the Notice of Project and site specific Work Procedures will be maintained on site at all times while asbestos abatement activities are in progress.

1.2 Prior to commencement of asbestos related work activities, all personnel including foreman and supervisors will receive adequate instruction and training in the hazards of asbestos exposure, in the use and maintenance of respiratory protection and protective clothing, and the safe handling of asbestos materials.

PART 2.0 - RESPIRATORY PROTECTION:

2.1 Workers shall be provided with personally issued, individually identified, half-mask respirators, fitted with approved HEPA-filter cartridges.

2.2 All personnel will be trained in the maintenance, use and limitations of their respirators. Personnel will also be fit tested on their respirators, using a protocol acceptable to the Workers' Compensation Board of British Columbia (Irritant smoke testing in accordance with CSA Standard Z94.4). Fit Test results will be documented and filed with project information that will be maintained on site for the duration of the project.

2.3 All personnel must perform positive and negative fit check each time a respirator is put on.

2.4 No supervisors, authorized visitors, or workers shall wear facial hair that affects the respirator to face seal.

PART 3.0 - PROTECTIVE CLOTHING

3.1 Workers will wear full bodied impermeable disposable coveralls complete with attached head and footwear covering, designed to fit snugly at the wrists, and around the face. Disposable coveralls will be provided to all personnel.

3.2 Workers may wear non skid laceless steel-toe rubber boots over their disposable coveralls as an alternative to protective footwear within the disposal coveralls. These rubber boots are to remain in the work area until the completion of the asbestos abatement phase of the project, at which time they shall be thoroughly decontaminated with soap and water, prior to removal from the work area.

PART 4.0 - MATERIALS, EQUIPMENT & TOOLS

4.1 Polyethylene drop sheeting (minimum thickness 6-mil [0.15mm]) will be used to cover floors, walls, stationary objects, and other fixtures that are to remain in the work area.

4.2 Asbestos waste receptors: Two separate impermeable 6-mil (0.15mm) thick polyethylene disposal bags. The outer container will bear a pre-printed "Asbestos Waste" label and otherwise be acceptable to the disposal site, BC Ministry of Water, Land & Air Protection (Waste Management Branch), and the Workers' Compensation Board of British Columbia.

4.3 **Caution Asbestos Hazard** Signs and barrier tape warning unauthorized personnel not to enter the work area.

4.4 A sufficient supply of scaffolds, ladders, and hand tools (e.g. scrapers, utility knives, rags and sponges, etc.) shall be provided as required. These tools will be thoroughly decontaminated with soap and water or disposed of as contaminated waste at the completion of a work procedure.

4.5 Bakor 120-19 or other approved asbestos encapsulant.

4.6 Suitable spray equipment shall be provided for the application of amended water, and sealer as required (A garden type low-velocity sprayer will be used).

4.7 A HEPA-filtered vacuum system will be available in the work area for the duration of the project.

4.8 A ground fault interrupt circuit (GFI) receptacle shall be utilized for electrical equipment in areas where misted water will be used.

PART 5.0 - WORK AREA DESIGNATION & PREPARATION:

5.1 Prior to disturbing or contacting asbestos containing materials, clearly mark the boundary of the work area by the placement of banner tape and **Caution Asbestos Hazard** warning signs.

5.2 The entrance to the work area will be outfitted with a supply of clean water, sponges and towels for the cleaning of workers, respirators and equipment.

5.3 **Caution Asbestos Hazard** Signs will be posted at all conceivable approaches to work areas and other locations where airborne concentrations of asbestos may exceed ambient background levels. Signs will be posted sufficiently far enough away from the work area to permit all personnel to read the sign and take the necessary protective measures to avoid exposure.

5.4 Where practicable, all air handling equipment including heating, ventilation, and air conditioning system (HVAC) components that are in, supply, or pass through the area will be shut down and isolated. All intake and exhaust vents in the work area will be sealed with tape and polyethylene.

PART 6.0 - WORKER PROTECTION, & WORK AREA ENTRY AND EXIT PROCEDURES:

6.1 All personnel must be fully protected with HEPA-filtered respirator, and protective clothing immediately prior to the first disturbance of asbestos containing materials, and until final clean up is completed.

6.2 All workers and authorized visitors must, prior to entering the work area, be familiar with the regulations and emergency procedures, and put on appropriate respiratory protection, clean disposable coveralls, head covering, and foot covering. Hard hats, eye protection, and gloves shall

also be utilized as required. Clean respirators and protective clothing shall be provided and utilized by each person for each separate entry into the work area.

6.3 Eating, drinking, chewing, and smoking, are not permitted in the work area.

6.4 Before leaving the work area workers shall decontaminate their protective clothing using a HEPA-filtered vacuum or by damp wiping. Protective clothing is then removed and placed in a proper waste receptacle for disposal as asbestos waste, prior to exiting the work area.

6.5 Upon exiting the work area, but prior to removing respirator, workers will immediately wash hands, exposed areas of the face, and outside surfaces of the respirator.

6.6 Use tape to completely seal the inlets of the HEPA filters on the respirator, or dispose of filters as asbestos waste.

PART 7.0 - CLEANUP OF ASBESTOS DEBRIS

7.1 Place polyethylene drop sheets over equipment and objects that are to remain in the work area to prevent the possible spread of asbestos dust.

7.2 Use misting bottle to wet asbestos debris during procedure, unless such misting creates an electrical hazard to workers or equipment.

7.3 Workers wearing personal protective equipment shall carefully cleanup debris by placing material in labelled disposal bag or with HEPA filtered vacuum cleaner.

7.4 Thoroughly clean the drop sheets, floor, and all surfaces within the work area with HEPA-filtered vacuum equipment or by damp wiping. Carefully fold drop sheets to contain debris and place in labelled disposal bag as asbestos waste.

7.5 During the work and immediately upon completing the work, all materials containing asbestos will be wetted and placed in sealed, impermeable, labelled disposal bags.

7.6 Immediately before their removal from the work area to the designated storage area, each filled waste bag will be cleaned using damp cloths or HEPA-filtered vacuum, and sealed within a second clean disposal bag.

PART 8.0 - WORK AREA CLEANUP:

8.1 Frequently during the work and immediately after completion of the work, the workers will clean up dust, and debris using a HEPA-filtered vacuum or by damp wiping.

8.2 All materials containing asbestos will be placed in sealed impermeable labelled disposal bags. Drop sheets and disposable protective clothing will be treated as asbestos waste and will be wetted and folded to contain dust and then placed in disposal bags.

8.3 Immediately before their removal from the work area to the designated storage area, each filled waste bag will be cleaned using damp cloths, and sealed within a second clean disposal bag.

8.4 Personnel will then remove double-bagged and sealed waste from the work area and transfer to the designated asbestos holding area for eventual transport and disposal at an approved landfill site, in accordance with BC Ministry of Environment - Environmental Management Act - Hazardous Waste Regulation, and Transportation of Dangerous Goods (TDG) Legislation.

Appendix B

Bulk Sample Reports

BULK SAMPLE REPORT

Date: June 15, 2010

Client: **CITY OF SURREY**

Location: **Fire Hall #8**
17572 - 57th Avenue
Surrey, BC

Comments:
1) Analysed as per WCB of BC OH&S Regulation.
2) WCB defines asbestos containing material as 1% or more asbestos.
3) Quantitation limit for asbestos analysis is 1%.
4) Sample results report fibre composition only.
5) Samples will be disposed of after 90 days, unless the client requests otherwise.

Samples Collected on June 9, 2010

Bulk Sample # 9020BS01 : **Main Floor - Furnace Room**
Sample Type : Grout (Grey) (Around Firedoor)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS02 : **Main Floor - Furnace Room**
Sample Type : Gypsum Board Filling Compound (Wall) (Off-White)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS03 : **Main Floor - Furnace Room**
Sample Type : Gypsum Board Filling Compound (Wall at Former Window Location)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS04 : **Main Floor - Furnace Room**
Sample Type : Firestop Grout (Grey) (at Chimney Penetration)
Result : **1 - 5% Chrysotile Asbestos**

Bulk Sample # 9020BS05 : **Main Floor - Workshop**
Sample Type : Duct Mastic (Grey)
Result : 20 - 25% Cellulose Fibres
: No Asbestos Fibres Observed

#101-Bldg.C-17802-66th Avenue
Cloverdale, BC, Canada V3S 7X1
Tel: 604-575-1122 Fax: 604-575-1152

Bulk Sample # 9020BS06 : **Main Floor - Workshop**
Sample Type : Gypsum Board Filling Compound (Ceiling) (Off-White)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS07 : **Main Floor - Rear Entrance Foyer**
Sample Type : Sheet Flooring (Beige)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS08 : **Main Floor - Rear Entrance Foyer**
Sample Type : Gypsum Board Filling Compound (Wall) (White)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS09 : **Main Floor - Exercise Room**
Sample Type : Gypsum Board Filling Compound (Wall) (White)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS10 : **Main Floor - Electrical Closet**
Sample Type : Firestop Putty (Grey) (at Telecommunications Cabinet)
Result : **25 - 30% Chrysotile Asbestos**

Bulk Sample # 9020BS11 : **Main Floor - Former Centre Vehicle Bay (North of Gear Room)**
Sample Type : Gypsum Board Filling Compound (Wall) (Upper Portion) (White)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS12 : **Main Floor - Front Entrance Foyer/Dispatch**
Sample Type : 12" Floor Tile (Tan & Grey)
Result : **1 - 5% Chrysotile Asbestos**

Bulk Sample # 9020BS13 : **Main Floor - Front Entrance Foyer/Dispatch**
Sample Type : Floor Tile Adhesive (Black)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS14 : **Main Floor - Front Entrance Foyer/Dispatch**
Sample Type : Gypsum Board Filling Compound (North Wall) (White)
Result : 1 - 5% Cellulose Fibres

Bulk Sample # 9020BS15 : **Main Floor - West Vehicle Bays**
Sample Type : Gypsum Board Filling Compound (Wall at Former Opening) (White)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS16 : **Main Floor - West Vehicle Bays**
Sample Type : Gypsum Board Filling Compound (West Wall) (White)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS17 : **Second Floor - Northwest Corner Meeting Room**
Sample Type : 12" Floor Tile (Beige & Brown Streaks)
Result : **1 - 5% Chrysotile Asbestos**

Bulk Sample # 9020BS18 : **Second Floor - Northwest Corner Meeting Room**
Sample Type : Floor Tile Adhesive (Black)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS19 : **Second Floor - Captain's Office**
Sample Type : Jute Backed Sheet Flooring (Brown & Tan)
Result : 25 - 30% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS20 : **Second Floor - Northwest Corner Meeting Room**
Sample Type : Gypsum Board Filling Compound (Wall) (White)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS21 : **Second Floor - Kitchen**
Sample Type : Gypsum Board Filling Compound (Wall) (White)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS22 : **Second Floor - Centre Washroom**
Sample Type : Sheet Flooring (Cream & Brown)
Result : No Asbestos Fibres Observed

Bulk Sample # 9020BS23 : **Second Floor - West Washroom**
Sample Type : Ceramic Tile Grout & Mortar (Grey)
Result : 5 - 10% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS24 : **Second Floor - West Washroom**
Sample Type : Paper Backed Sheet Flooring (Off White) (in Locker Alcove)
Result : 30 - 35% Cellulose Fibres
: 5 - 10% Synthetic Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS25 : **Main Floor - East Wall Cavity of West Vehicle Bays**
Sample Type : Stucco (Light Grey) (Outer Layer)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Bulk Sample # 9020BS26 : **Main Floor - East Wall Cavity of West Vehicle Bays**
Sample Type : Stucco (Dark Grey) (Inner Layer)
Result : 1 - 5% Cellulose Fibres
: No Asbestos Fibres Observed

Appendix C

Floor Plans
(for reference only)