

**Golder Associates Ltd.**

500 - 4260 Still Creek Drive  
Burnaby, British Columbia, Canada V5C 6C6  
Telephone (604) 296-4200  
Fax (604) 298-5253



**REPORT ON**

**PHASE I ENVIRONMENTAL SITE ASSESSMENT  
220 ROYAL AVENUE  
NEW WESTMINSTER, BRITISH COLUMBIA**

Submitted to:

Sisters of Providence  
3005-119 Street  
Edmonton, Alberta  
T6J 5R5

**DISTRIBUTION:**

- 1 Copy - Sisters of Providence
- 1 Copy - Quantum Environmental Group Inc., Burnaby, BC
- 2 Copies - Golder Associates Ltd.

March 2, 2004

04-1412-036



## 1.0 INTRODUCTION

### 1.1 Background

Golder Associates Ltd. (Golder) was retained by the Quantum Environmental to conduct a Phase I Environmental Site Assessment (Phase I ESA) of the property located at 220 Royal Avenue, New Westminster, British Columbia (the "Site"; refer to Figure 1). This property is currently occupied and used by St. Mary's Hospital and owned by The Sisters of Providence. No legal description was available for the Site.

Authorization to proceed with the work was provided to Golder by Quantum Environmental Group Inc.

### 1.2 Scope of Work

The Phase I ESA was completed in general accordance with the Canadian Standards Association (CSA) document entitled "*Phase I Environmental Site Assessment*" (CSA document Z768-01), dated November 2001, as applicable to local conditions, information and database resources. The scope of the Phase I ESA was also generally consistent with the Stage 1 Preliminary Site Investigation (Stage 1 PSI) requirements, as outlined in the Contaminated Sites Regulation (CSR), under the Waste Management Act. The CSR is administered by the British Columbia Ministry of Water, Land and Air Protection ("MWLAP").

The activities completed as part of the Phase 1 ESA included a historical review of the Site and surrounding areas (within 200 metres (m) of the Site), a Site visit, observations of surrounding land uses (within 200 m of the Site) from publicly accessible areas, and a regulatory information review.

The regulatory, historical and information reviews included information requests to, and a review of information from, the following:

- BC Water Well Database;
- Insurers' Advisory Organization;
- BC Site Registry;
- City Directories;
- Historical aerial photographs obtained from the University of British Columbia; and,
- Geological and hydrogeological information in published government reports and maps.

The Site visit included a walk through of the interior of the Site building; a walking tour of the exterior areas of the Site; and an interview with Dave Neufeld, Manager of Environmental Services for St. Mary's Hospital, hereafter referred to as the "Site Representative".

Copies of information from regulatory agencies are provided in Appendix I, copies of selected City directories are provided in Appendix II, and selected Site photographs are provided in Appendix III.

Ms. Hayley Shearer of Golder conducted the Site reconnaissance February 16, 2004 along with the Site Representative. The Site visit included a visual evaluation of the following:

- The interiors of the building;
- The parking lots, open areas and boundaries of the Site; and
- Visual assessment from the Site of surrounding land use.

No sampling or testing of suspect hazardous construction materials, with the exception of asbestos (*i.e.*, PCBs, lead-based paints, etc.) was carried out to assess their potential presence as part of the Stage I ESA. Golder has tested the building for the presence of asbestos and the results are provided in a separate report. No assessment has been conducted for the presence of conditions that could indicate the potential for mould or other biological organisms to be present at the Site. Golder did not conduct a health and safety, engineering or structural evaluation of the Site as part of the Scope of Work, and no soil, water, liquid, biological, gas, product or chemical sampling and analytical testing at or in the vicinity of the Site was conducted as part of the Phase I ESA. The assessment included cursory observations of the neighbouring land uses, but did not constitute a rigorous evaluation of the adjacent properties.

## EXECUTIVE SUMMARY

Golder Associates Ltd. (Golder) was retained by Quantum Environmental on behalf of the Sisters of Providence in January 2004 to conduct a Phase I Environmental Site Assessment (Phase I ESA) of the property located at 220 Royal Avenue, New Westminster, British Columbia (hereafter referred to as the "Site"). The Site is presently St. Marys Hospital and consists of one building.

The Phase I ESA was completed in general accordance with the Canadian Standards Association (CSA) document entitled "*Phase I Environmental Site Assessment*" (CSA document Z768-01), dated November 2001, as applicable to local conditions, information and database resources. In particular, the activities completed included a historical review of the Site and surrounding areas (within 200 metres (m) of the Site), a Site visit, observations of surrounding land uses (within 200 m of the Site) from publicly accessible areas, and a regulatory information review.

The primary objective of the Phase I ESA was to identify potential environmental liabilities associated with the former and current operations on the Site and/or in the immediately surrounding area. The assessment was based on a review of available sources of information and observations of surface conditions during the Site visit.

Based on the review of historical information and the Site visit completed to date as part of the Phase I ESA no off-Site areas of potential environmental concern have been identified.

### On Site Areas of Potential Environmental Concern

**APEC 1:** A diesel underground storage tank was removed from the site in approximately 1994. There is no known documentation of the removal or the condition of the tank and/or soil following its removal. There is a potential of subsurface impacts from leaks or spills associated with the underground storage tank.

**Recommendation:** Conduct an intrusive investigation in the vicinity of the former UST to assess the potential for contamination associated with the former tank.

**APEC 2:** A 50,000 litre diesel underground storage tank was installed on the property in 1994. There was no information on the tank construction or leak detection available. There is a potential of subsurface impacts from the underground storage tank.

**Recommendation:** Conduct integrity testing on the tank and lines to assess

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**Management Issues**

**Hazardous Building Materials:** The potential presence of asbestos-containing materials, PCBs and lead paint located throughout the hospital. If buildings were to be renovated or demolished in the future, these issues would need to be assessed; and if present, managed in accordance with applicable regulatory requirements.

**Ozone Depleting Substances:** Ozone Depleting Substances such as CFC-11 and CFC-12, may be present in air-conditioning units in the buildings. Removal of CFCs from equipment requires handling and disposal of CFCs according to applicable regulations.

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## 2.0 SITE DESCRIPTION

### 2.1 Site Location and Setting

The Site is located in the City of New Westminster on Royal Avenue, approximately 400 m north of the Fraser River. The Site is bounded by Royal Avenue to the northwest, residential houses to the northeast, Agnes Street to the southeast and Merrivale Street to the southwest. The area surrounding the Site generally consists of single family and multi-unit residential properties (Figure 1).

The Site consists of one hospital building, two parking areas and a small grassed residential sized lot detached from the main hospital area along Agnes Avenue.

Services provided to the Site are summarized in the following table:

**Table 1: Service and Utility Providers for the Site**

SERVICE/UTILITY	PROVIDER
Water	City of New Westminster
Sanitary Sewer	City of New Westminster
Garbage Collection	City of New Westminster Waste Management
Biohazard Collection	HSS (private company)
Storm Sewer	City of New Westminster
Electricity	BC Hydro
Natural Gas	Terasen (formerly BC Gas)
Telephone	Telus

### 2.2 Site Geology and Hydrogeology

The local surficial geological unit in this area, as described by the Geological Survey of Canada, includes glacial drift (i.e., Vashon Drift). Vashon Drift (glacial drift) may include extensive deposits of coarse bouldery gravel to silt to till.<sup>□</sup>

A search of the water well database maintained by the BC MWLAP Groundwater Section indicated no water wells located within 500 metres of the Site.

<sup>□</sup> Geological Survey of Canada. Map 1484A, Surficial Geology – New Westminster, British Columbia, 1979.



The direction of local groundwater flow is unknown. However, based on the topography of the area, the local groundwater flow direction is anticipated to be southerly towards the Fraser River.

### **3.0 HISTORICAL RECORDS REVIEW**

The historical records review for the Site and the surrounding properties consisted of the collection of publicly available information, including historical aerial photographs, and information from selected government and private agencies. In addition, interviews were conducted with persons knowledgeable of the Site. A summary of the historical information pertaining to the Site is detailed in the following sections.

#### **3.1 Review of Aerial Photographs**

Aerial photographs were obtained from the University of British Columbia, Geographical Information Centre. Historical aerial photographs for the Site and surrounding land were made available from 1938, 1948, 1954, 1963, 1979, 1984, and 1999. The Site consists of the main hospital structure and property, a parking lot located to the east of the hospital and a small grassed residential lot located to the east of the hospital and to the south of the parking lot. The information obtained from the aerial photographs is summarized in the following table (Table 2), with copies of selected aerial photographs presented in Appendix I.

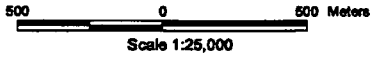
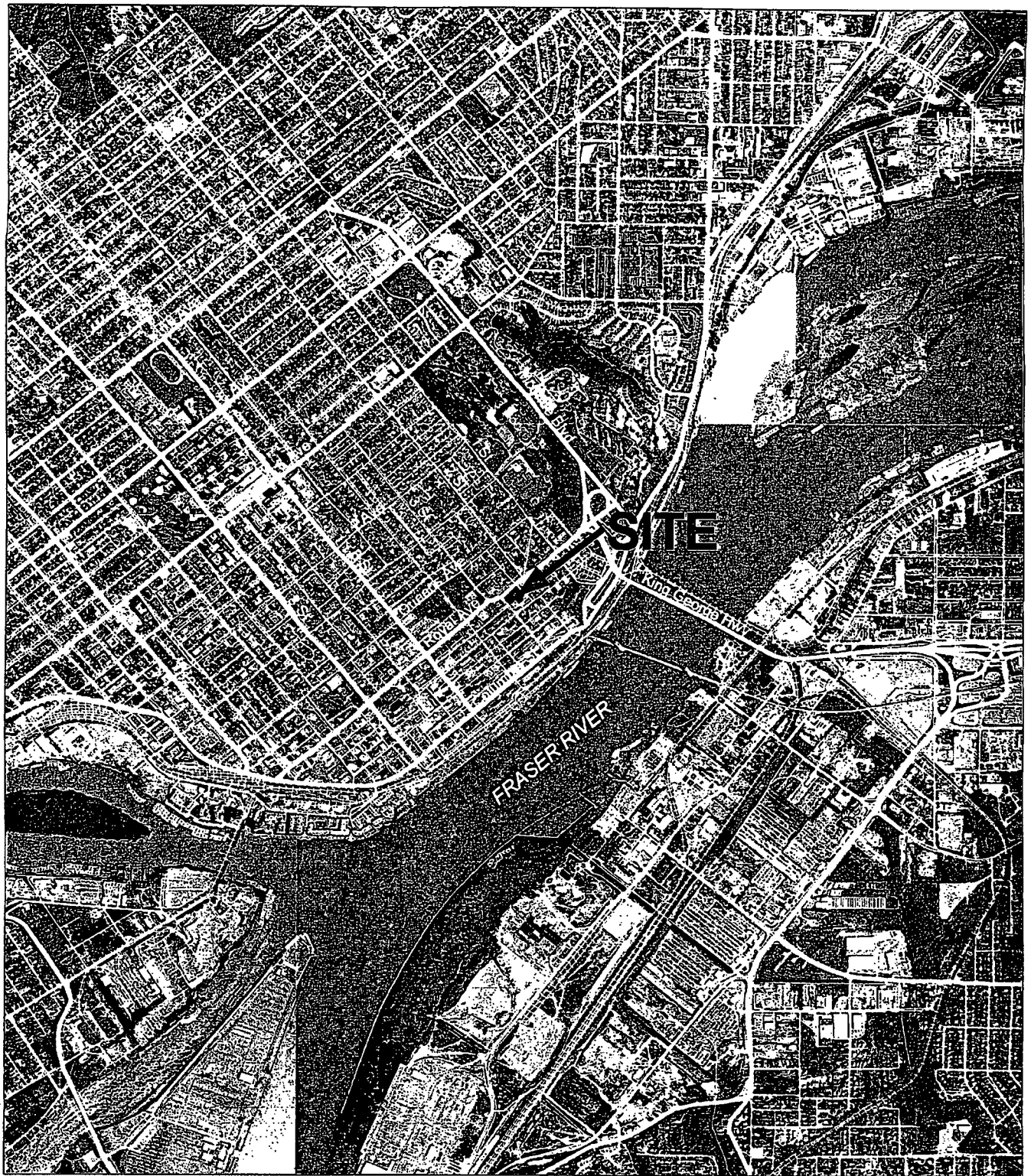
**TABLE 2: HISTORICAL AERIAL PHOTOGRAPH REVIEW**

<b>Date</b>	<b>Aerial Photographs</b>	<b>Site Description</b>	<b>Surrounding Area</b>
1938	A5985-32	The Site appears to be divided in two via an east-west road, inferred to be present day Cunningham road. The northern portion appears to be treed and have no buildings present. The southern portion includes one large building and two small buildings. The present day parking lot and residential lot appear to be used for residential purposes.	The surrounding area consists of residential land use.
1948	BC575-40 BC575-41	The southern portion of the Site appears to have approximately four to six buildings present in addition to the larger building. The parking lot area and residential lot appear similar to the previous 1938 aerial photograph.	Surrounding land use appears similar to the 1938 aerial photograph.
1954	BC1675-41	The northern portion of the Site appears to be cleared of trees. The southern portion of the Site was also cleared of vegetation and buildings, except for the large building. The parking lot and small residential lot remain similar to previous aerial photographs.	Surrounding land use appears similar to the 1948 aerial photograph.
1963	BC5063-24	The present day hospital building is present in the 1963 aerial photograph. All areas surrounding the building appear to be landscaped or paved. The parking lot and grassed residential lot appear similar to previous aerial photographs and remain as residential properties.	Surrounding land use appears to be similar with the exception that small buildings are being replaced with larger buildings.
1979	BC5581-085 BC5581-086	The hospital area appears similar to the 1963 aerial photograph. The parking lot is present in the 1979 aerial photograph. The small grassed parcel is vacant in the 1979 aerial photograph.	Surrounding land use in the 1979 aerial photograph is similar to the 1963 aerial photograph.
1984	A26511-145 A26511-146	The Site and surrounding area appear similar to the 1979 aerial	Surrounding land use in the 1984 aerial photograph is similar to the 1979 aerial photograph.
1999	SRS6064-98	The Site and surrounding area appear similar to the 1984 aerial	Surrounding land use is similar to the 1984 aerial photograph.

### 3.2 Review of Insurers' Advisory Organization Maps

A request for a Historical Environmental Information Report for the subject Site was submitted to Insurers' Advisory Organization (IAO). A representative for IAO stated that a 1957 Fire Insurance Map of the Site and surrounding area was on file. The IAO representative noted that no underground storage tanks were noted on the map and that no other items of potential concern (i.e., compressors, generators, etc) were noted on the Site property or surrounding area. The IAO response is attached in Appendix I.


N:\Bur-Graphical\Projects\Key-plans\04-1412-036.apr (Layout: Key-Plan (Orthophoto)) February 18, 2004



**REFERENCE**

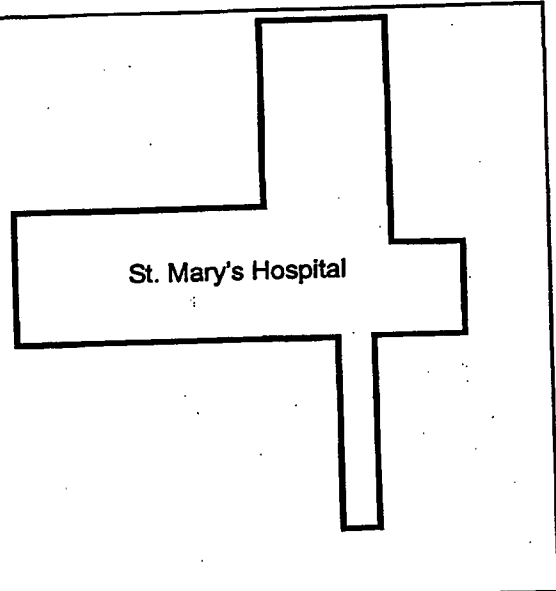
Source: Triathlon (1995 Orthophotos), DMTI Spatial  
Datum: NAD 83 Projection: UTM Zone 10



PROJECT		QUANTUM ENVIRONMENTAL GROUP INC. PHASE I ENVIRONMENTAL SITE ASSESSMENT NEW WESTMINSTER, B.C.	
TITLE		KEY PLAN	
 Golder Associates Burnaby, B.C.	PROJECT No.	04-1412-036	SCALE AS SHOWN
	DESIGN	HS 18 Feb. 2004	<b>FIGURE 1</b>
	GIS	GDH 18 Feb. 2004	
	CHECK	HS 18 Feb. 2004	
	REVIEW		
REV. 0			

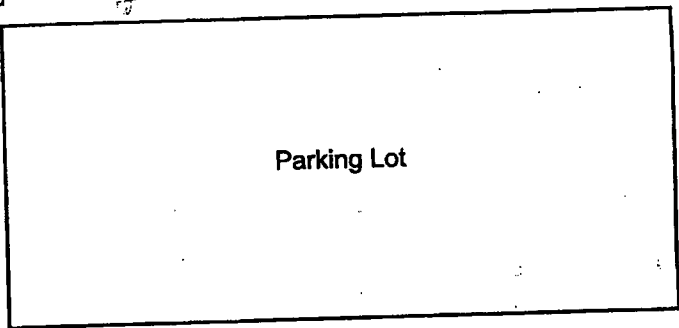


Road

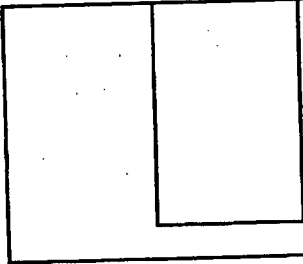


St. Mary's Hospital

St. Mary Street



Parking Lot



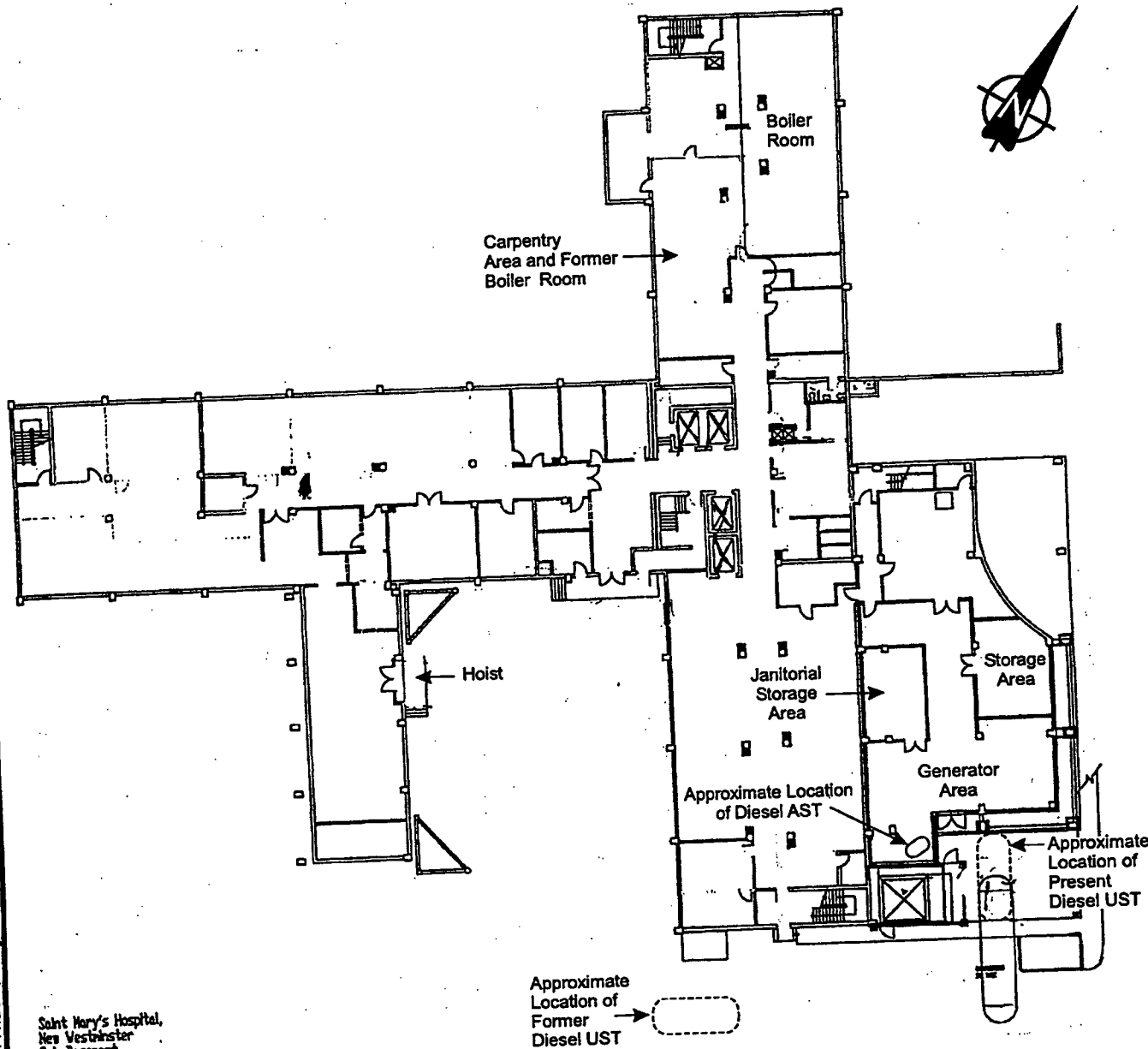
Grassed Residential Lot

Agnes Street

REVISION DATE: 20FEB04 BY: SS COREL FILE: \\NA\Bur-Graphics\Projects\2004\141204-1412-036\Drafting\correl\Plan.cdr

PROJECT					QUANTUM ENVIRONMENTAL GROUP INC. PHASE I ENVIRONMENTAL SITE ASSESMENT NEW WESTMINSTER, BC														
TITLE										SITE PLAN									
PROJECT No.					04-1412-036					FILE No.					PLAN				
DESIGN		LP		20FEB04		SCALE		REV.											
CADD		SS		20FEB04		FIGURE 2													
CHECK		LP		20FEB04															
REVIEW																			





Saint Mary's Hospital,  
 New Westminster  
 Sub-Basement  
 Scale 1/8" = 1' 0"  
 28 August 2000

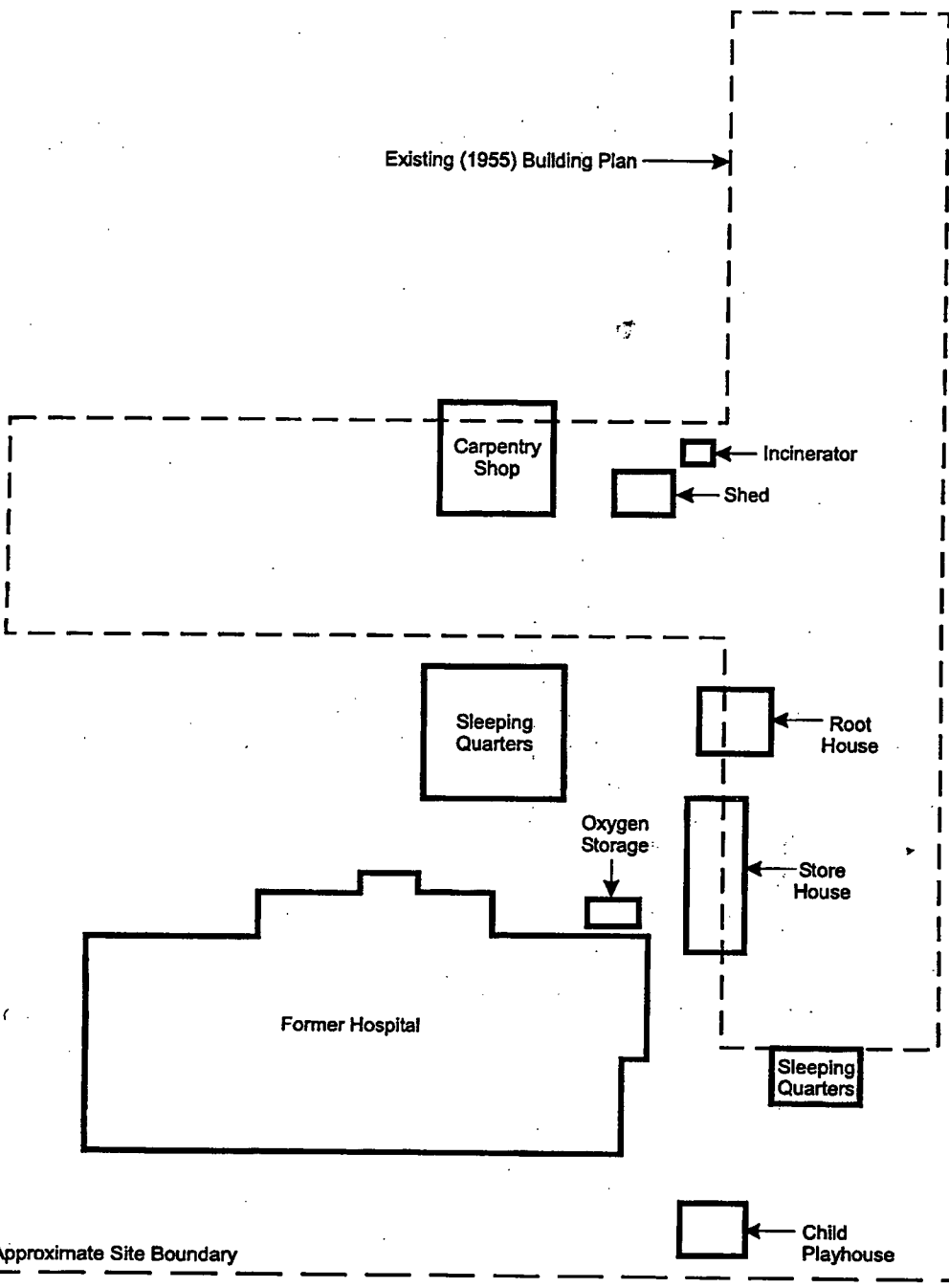
REVISION DATE: 20FEB04 BY: SS COREL FILE: N:\Bur-Graphics\Projects\2004\1412\04-1412-036\Drafting\coveal\Plan.cdr

PROJECT					<b>QUANTUM ENVIRONMENTAL GROUP INC.      PHASE I ENVIRONMENTAL SITE ASSESSMENT      NEW WESTMINSTER, BC</b>					
TITLE					<b>EXISTING HOSPITAL BUILDING</b>					
PROJECT No. 04-1412-036			FILE No. PLAN		DESIGN LP 20FEB04			SCALE NTS		REV.
CADD SS 20FEB04			CHECK LP 20FEB04		REVIEW			<b>FIGURE 3</b>		





Existing (1955) Building Plan →



Approximate Site Boundary

PROJECT **QUANTUM ENVIRONMENTAL GROUP INC.  
PHASE I ENVIRONMENTAL SITE ASSESMENT  
NEW WESTMINSTER, BC**

TITLE **FORMER HOSPITAL BUILDING**



PROJECT No.		04-1412-036	FILE No.		PLAN
DESIGN	LP	20FEB04	SCALE		REV.
CADD	SS	20FEB04			
CHECK	LP	20FEB04			
REVIEW					

**FIGURE 4**

REVISION DATE: 20FEB04 BY: SS COREL FILE: N:\Bur-Graphics\Projects\2004\1412\04-1412-036\Drafting\corel\Plan.cdr

### 3.3 Directory Search

City directories were searched for records of occupancy at the Site and in the surrounding area. A copy of the directory search is included in Appendix II.

The Site was first listed on Merrivale Street in the 1934 directory and remained as such until 1964, when it was then listed on Royal Avenue, where it presently remains listed. The staff parking lot located to the east of the hospital was first noted in the 1974 directory and last listed in the 1994 directory.

Listings for surrounding streets generally consisted of residential listings from 1934 until 1999.

Local directories were searched for the following streets in the area of the Site:

• Royal Avenue	• Manitoba Street
• 2 <sup>nd</sup> Street	• Clinton Place
• 3 <sup>rd</sup> Street	• Cunningham Street
• Peele Street	• St. Marys Street
• Agnes Street	• Merrivale Street

No title search of the subject Site was conducted, as sufficient land use information was obtained from the City Directories search.

### 3.4 BC Online Site Registry

The BC MWLAP maintains a Site Registry database that contains environmental information pertaining to non-contaminated, contaminated and previously contaminated (*i.e.*, subsequently remediated) sites. Using geographic location coordinates, this database was searched for records such as previous environmental investigations, waste management permits and pollution abatement orders.

A search of the Site's civic address was conducted on February 17, 2004. No records for the Sites civic address were identified during the Site Registry search. However, a search of the database, conducted within a 500 metre (0.5 kilometre) radius of the Site, returned seven registered sites. The seven properties are located approximately 270 m to 500 m in the downslope and assumed downgradient direction of the Site and as such, no reports were obtained for the identified Site Registry properties.



### **3.5 Previous Investigations**

According to the Site Representative, there have been no previous environmental investigations for the Site. As asbestos was removed from the Site in the early to mid 1990s, reports regarding the removal of asbestos have been submitted to the hospital. Copies of these reports were not obtained or reviewed for the Phase I ESA.

### **3.6 Former Site Plans**

Site plans for the former hospital, pre-1955, were available. These plans show the majority of the buildings located on the southern portion of the Site. Buildings identified from the Site plan that may be noted as potential environmental concerns to the Site include a carpentry shop, shed and incinerator. As the carpentry shop and shed may have contained fuels they are noted as potential areas of concern. It is not confirmed however that fuels were definitely stored in these buildings.

### **3.7 Summary of Historical Findings**

Based on available information sources, the Site initially began hospital services in 1887 as a fifteen bed hospital. In 1955 the construction of the present building began, and was followed by additions in 1966 (cafeteria and offices) and 1994 (lab, pharmacy and clinic).

The City directories and historical aerial photographs indicated that the surrounding land has been used for residential purposes throughout the historical search.

The BC Site Registry searches revealed seven properties located approximately 270 to 500 metres downgradient of the Site.

Building plans for the former hospital site were reviewed and noted to have an incinerator and carpentry shop present.

## 4.0 SITE VISIT FINDINGS

Ms. Hayley Shearer of Golder conducted the Site reconnaissance on February 16, 2004. As part of the Site visit, an interview was conducted with the Site Representative, Dave Neufeld, Manager of Environmental Services. The interview information is incorporated into the appropriate sections of the report. Ms. Shearer was accompanied by the Site Representative during the Site reconnaissance. Selected photographs taken during the Site visit are provided in Appendix III.

The buildings and related infrastructure were examined for visual or olfactory indications of potential environmental concern. Golder inspected the accessible mechanical, electrical and storage areas of the operation. The Site reconnaissance also included a cursory inspection of neighbouring properties from the Site and publicly accessible areas. The results of the Site reconnaissance are discussed below.

### 4.1 Site Description

The Site consisted of a seven floor hospital, a large parking lot and one small residential sized lot. All three areas together make up approximately 1.6 hectares in area. The parking lot is located to the east of the hospital and across St. Mary's Street while the small residential lot is located across St. Mary's Street and over two residential lots to the east to the south of the parking lot. (Figure 2).

The residential parcel is detached from the main hospital and parking lot by two residential sized lots with houses present. The parcel of land is presently vacant and grassed. The lot appears to contain concrete rubble and large rocks underneath the grass in some areas. In addition some small pieces of PVC pipe were noted on the Site. The PVC pipe consisted of white PVC lying along the ground, just below the grass and two short black pieces approximately 30 cm in length protruding out of the grass. The use of these PVC pipes is unknown however, they may potentially be related to irrigation lines or utilities associated with the former residence located on the property as identified during the aerial photograph review.

The main areas and rooms that may be an area of potential environmental concern located in the hospital include the boiler room, generator room (with diesel AST), carpentry area, former boiler room, and storage areas. In addition, the hospital contains five elevators throughout the building and one hoist in the loading area located on the southern side of the building. The Site representative noted that all floor drains located in buildings are connected to the City of New Westminster sanitary sewer system.

The boiler room contained two boilers and two steam generators. These boilers generally run on natural gas, although occasionally they run off of the diesel generator. Small pails were present where necessary to catch oil or lubricant drips. These pails appeared to be empty and no staining in the area of the pails or else where was observed. The general area of the boilers appeared to be well maintained with no evidence of leaking or dripping of oil or lubricants.

The former boiler room was located in the present day carpentry area/lunchroom. This area appeared to be in good condition with no staining noted on the floor. One floor drain was present in this area. The Site Representative stated that this floor drain was connected to the New Westminster sanitary sewer system.

The present day carpentry room, which was identified as the former boiler room, contained small quantities, approximately 10 - 0.5-litre containers, of lubricants and paints. Some minor staining was present at the foot of the work table.

A storage room containing approximately 40 four-litre and eight 20 litre pails of paint, approximately five 40 litre containers and one 100 litre container of antiseptic and 20 litre pails containing janitorial cleaners were present. In addition, limited quantities of paint thinner and TSP were stored in this room. This room appeared to have a secondary containment system present, as an approximately 0.15 m high concrete berm was located across the foot of the door. In addition, the floor and walls appeared to be concrete and cracking was not observed. No staining was present on the floor and no floor drain was noted at the time of the Site reconnaissance.

The janitorial storage room contained limited amounts of various cleaners. A large shallow tub with a floor drain was located in the janitorial room and was used for emptying dirty wash water into. The Site representative stated that the floor drain located in the tub was connected to the City of New Westminster sanitary sewer system.

The biohazardous waste is stored in a secured room and waste is picked up by a private disposal company once a week.

The Site Representative noted that four elevators are present in the hospital. The elevator shafts were not accessible for viewing, however the Site Representative stated that the elevators are cable elevators and the shafts are concrete lined. According to the Site Representative, the elevators are not known to leak lubricants or oils.

One above ground hoist was located in the loading area. This hoist was contained in a concrete box and not available for viewing. The Site Representative stated that all the hoist components are located above ground and are not known to leak lubricants or oils.

#### **4.2 Air Emissions**

The Site is subject to air pollution control regulations and, according to the Site Representative, holds a Greater Vancouver Regional District permit for natural gas emission from the boiler. Air emissions are not monitored by St. Mary's Hospital. Air emission sources identified at the Site included the natural gas chimney from the boiler room. According to the site representative, there have been no public complaints regarding air emissions in previous years. Golder did not note any odours external to the buildings resulting from air emissions.

#### **4.3 Water and Wastewater Discharges**

Potable water is supplied to the Site by the City of New Westminster water system. Wastewater and sewage are discharged into the City of New Westminster sanitary sewer system. Storm water in the parking lot area is discharged to the City of New Westminster storm sewer system.

#### **4.4 Waste Management**

Domestic waste produced on Site is collected in a garbage bin, and is removed each day by City of New Westminster waste management. The medical laboratory waste (including sharps) and the pathological waste are picked up once a week by a specialized waste company (HSS of Port Coquitlam) and disposed of off-Site.

#### **4.5 Material and Chemical Storage, Handling and Management**

The chemicals stored on-Site were observed or were identified to include:

- Diesel fuel (contained in one 50,000 L UST and one 220 L AST)
- Paint (limited quantities)
- Lubricants (limited quantities)
- Laundry Detergent, sanitizers and associated products
- Antiseptics (0.2 to 20 litre containers)

Other chemicals and/or cleaning agents may be, or have been used at the Site, that were not observed or noted during the Site visit.

The chemicals observed on-Site were primarily used for basic maintenance and cleaning of the hospital. In general, chemicals identified at the Site appeared to be appropriately stored.

#### **4.6 Asbestos-Containing Materials**

In general, asbestos can be found in plaster, mechanical insulation, gaskets, thermal insulation on pipes, refractory material, roofing felts, floor tiles, ceiling tiles and pargings, ceiling stipple, heat resistant panels, incandescent light fixture reflector plates and any other material requiring a high degree of durability and/or thermal resistance. The common use of potential friable (breakable by hand) asbestos-containing materials (ACMs) in construction voluntarily stopped in the late-1970s.

Asbestos is known to be formerly present on Site. Asbestos was reportedly removed from the building in 1990, 1991, 1992, 1993, and 1994. Golder has prepared a separate report on testing of building materials for the presence of asbestos.

#### **4.7 PCB-Containing Materials and Equipment**

The use of polychlorinated biphenyls (PCB)-containing dielectric fluids in electrical equipment such as transformers, fluorescent light ballasts and capacitors was common industry practice until about 1980.

The Site representative was not aware of any PCBs present at the Site. According to the Site Representative some transformers were installed and/or replaced in 1994. The Site Representative was not aware which transformers were replaced nor how the transformers removed were disposed of. Based on the age of the building, PCBs could be present in the building.

#### **4.8 Lead-Based Paints**

Although lead-based paints were banned from use on exterior and interior surfaces of buildings, and furniture and household products in the early 1970s, various commercial paints are still known to contain lead in concentrations greater than 0.5 percent by weight (e.g., road paint).

Based on the age of the building, the building surfaces could potentially have been painted with lead-based paints in the past. The Site representative was not aware of lead-based paint in the building.

#### **4.9 Ozone-Depleting Substances**

Equipment that has the potential to contain ozone-depleting substances (ODS) includes roof-mounted HVAC units and refrigeration units in the on-Site facilities. Both potential sources exist on the Site, but the Site Representative mentioned that all the facilities and equipment therein use refrigerants appropriate for use, and the equipment is maintained by qualified persons.

#### **4.10 Mercury**

With the exception of blood pressure monitors, the Site Representative was not aware of mercury present at the Site. However, mercury-containing thermostats may be present inside the building. Four blood pressure monitors were identified by the Site Representative to contain mercury. When removed, blood pressure monitors and any mercury-containing thermostats (and other mercury-containing equipment, if present) should be disposed of in accordance with applicable regulations.

#### **4.11 Radioactive Materials**

Based on the information review, Site visit and interviews with the Site Representative, no information was obtained that suggested the presence of radioactive materials on the Site. However, radioactive materials are likely present in x-ray equipment and rooms.

#### **4.12 Waste Disposal Sites, Dumps and Landfills**

The review of the aerial photographs, topographic maps, and observations made during the Site visit did not suggest the presence of a waste dump within 500 m of the Site. The reclamation of land that occurred on Site and on various adjacent properties might contain material that would be considered waste and might represent an area of potential environmental concern. Waste disposal or land filling does not occur on Site.

#### **4.13 Radon Gas**

Radon is a naturally occurring radioactive gas that cannot be seen, smelled or tasted. It evolves from the radioactive decay of uranium. High concentrations of radon can be found in soils and rocks containing uranium, granite, shale, phosphate and pitchblende. Radon gas is heavier than air and can collect in subsurface areas.

The surficial soils in the area are considered a low risk for radon generation.

#### **4.14 Herbicides and Pesticides**

The Site representatives stated that herbicides and pesticides are not used on Site. The Site representative reported that no herbicide or pesticide mixing, debulking or storage has been conducted on-Site. No pesticides or herbicides were identified on the day of the Site visit.

#### 4.15 Storage Tanks

Presently, one 220 litre above ground diesel storage tank (AST) and one 50,000 litre underground diesel storage tank (UST) are located on the Site and currently in use. These tanks, according to the Site Representative, have been present since 1994. The Site Representative stated that no known leaks or spills have been associated with the diesel AST or UST. The AST was noted to be located within a secondary containment structure (i.e., a 0.1 m high concrete berm) and no floor drains or staining was noted in the area of the AST. The diesel UST material of construction is not known. In addition, there was no information on integrity testing, or leak detection systems on the UST.

Two compressed oxygen pressure vessels are located on the southeastern portion of the Site. This oxygen is used for breathing assistance for hospital patients.

According to the Site Representative, one diesel UST was formerly located on the southeast portion of the Site and was removed in 1994. According to the Site Representative, no report or sampling of groundwater or soil surrounding the tank was completed following the UST removal. Presently a City of New Westminster storm drain catch basin is located in area of the former UST.

According to the Site Representative, no waste oil is stored in tanks, drums or pails on Site. The Site Representative was not aware of any heating oil tanks that may have formerly been present at the Site.

#### 4.16 Discharges, Releases and Staining

No significant surface staining or vegetation stress was observed at the Site (inside the buildings or on the surrounding exterior spaces) indicating that spills or releases had occurred. Storm water drains showed no evidence of staining that would suggest they were used for the disposing of hazardous and/or special wastes.

#### 4.17 Surrounding Land Use

Surrounding land use in the area of the Site is generally residential, including single family and multi-unit complexes. A public park is located to the northeast of the Site.

**4.18 Natural Environmental Receptors**

**4.18.1 Wetlands**

No wetlands or areas of naturally ponded water were observed on the Site, or within 200 m of the Site.

**4.18.2 Surface Water**

The nearest surface water body to the Site is the Fraser River which is located approximately 400 m south of the Site.



## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the review of historical information and the Site visit completed to date as part of the Phase I ESA no off-Site areas of potential environmental concern have been identified.

### On Site Areas of Potential Environmental Concern

**APEC 1:** A diesel underground storage tank was removed from the site in approximately 1994. There is no known documentation of the removal or the condition of the tank and/or soil following its removal. There is a potential of subsurface impacts from leaks or spills associated with the underground storage tank.

**Recommendation:** Conduct an intrusive investigation in the vicinity of the former UST to assess the potential for contamination associated with the former tank.

**APEC 2:** A 50,000 litre diesel underground storage tank was installed on the property in 1994. There was no information on the tank construction or leak detection available. There is a potential of subsurface impacts from the underground storage tank.

**Recommendation:** Conduct integrity testing on the tank and lines to assess

### Management Issues

**Hazardous Building Materials:** The potential presence of asbestos-containing materials, PCBs and lead paint located throughout the hospital. If buildings were to be renovated or demolished in the future, these issues would need to be assessed; and if present, managed in accordance with applicable regulatory requirements.

**Ozone Depleting Substances:** Ozone Depleting Substances such as CFC-11 and CFC-12, may be present in air-conditioning units in the buildings. Removal of CFCs from equipment requires handling and disposal of CFCs according to applicable regulations.

## 6.0 LIMITATIONS AND USE OF REPORT

This report was prepared for the exclusive use of the Sisters of Providence and Quantum Environmental Group Inc., and is intended to provide a preliminary assessment of the environmental conditions of the Site located at 220 Royal Avenue, New Westminster, British Columbia.

The inferences concerning the Site conditions contained in this report are based on information obtained during the environmental site assessment conducted by Golder personnel, and are based solely on the condition of the property at the time of the Site visit on February 16, 2004, supplemented by historical and interview information obtained by Golder, as described in this report. No soil, sediment, water, gas, building material, or other chemical sampling and testing was conducted by Golder as part of this assessment. Therefore, the potential remains for the presence of unknown, unidentified or unforeseen surface or subsurface contamination.

This report was prepared, based in part, on information obtained from historic information sources and interviews. In evaluating the subject Site, Golder has relied in good faith on information provided. We accept no responsibility for any deficiency or inaccuracy contained in this report as a result of our reliance on the aforementioned information.

The findings and conclusions documented in this report have been prepared for the specific application to this project, and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practising under similar conditions in the jurisdiction. Golder makes no other warranty, expressed or implied.

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. Golder accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken, based on this report.

If new information is discovered during future work, including excavations, soil borings, or other investigations, Golder should be requested to re-evaluate the conclusions of this report and to provide amendments, as required, prior to any reliance upon the information presented herein.

This report was not prepared for, and does not contain sufficient information for, the purposes of submission to MWLAP for review under the Contaminated Sites program. The report may not be relied upon by MWLAP or by others, without Golder's expressed written consent.

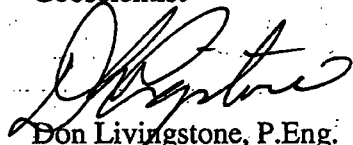
**7.0 CLOSURE**

We trust that the information presented in this report meets your current requirements. Should you have questions or concerns, please do not hesitate to contact the undersigned.

**GOLDER ASSOCIATES LTD**

for 

Hayley Shearer, GIT  
Geoscientist



Don Livingstone, P.Eng.  
Associate

HS/DL/jc  
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