

APPENDIX 6

Remediation Plan



Stantec Consulting Ltd.
500-311 Portage Avenue
Winnipeg MB R3B 2B9
Tel. 204-489-5900

March 28, 2019
File: 144517067

Attention: Warren Rospad, Contaminated Sites Specialist
Manitoba Sustainable Development
1007 Century Street
Winnipeg, MB R3H 0W4

Dear Mr. Rospad,

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

At the request, and on behalf, of the City of Winnipeg, Stantec Consulting Ltd. (Stantec) has prepared the following Remediation Plan as required by Manitoba Sustainable Development (MSD) according to Section 14.1(1) of *The Contaminated Sites Remediation Act* (C.C.S.M., c. C205; 'the CSRA') for soil impacts, an on-site monitoring well, and an underground storage tank (UST) with associated potential residual petroleum hydrocarbon impacts identified at the Public Safety Building & Civic Center Parkade properties, 151 & 171 Princess Street in Winnipeg, Manitoba (herein referred to as "the Site") shown in **Figure 1**, attached.

The purpose of this Remediation Plan is to provide MSD with an update of the current environmental status of the Site and advise on the proposed Site activities (including handling of potentially impacted soil) in concert with planned demolition of the current buildings.

SITE FEATURES AND BACKGROUND INFORMATION

The Site location is presented in **Figure 1**. The Site is in the central portion of the City of Winnipeg and bounded to the north by James Avenue, to the east by King Street, to the south by William Avenue, and to the west by Princess Street. The western portion of the Site is predominantly occupied by a parking garage (Civic Center Parkade) with both above and below ground parking and shared parking with the commercial office building. Ingress and egress to the underground parking area is present on the south-central portion of the Site and an egress route is also located on the northeast portion of the Site. A commercial office building (Public Safety Building) is located at the southeast portion of the Site. The remaining areas of the Site consist of green space and sidewalks (**Figure 2**). The Site is located in an area that is predominantly commercial and residential development. The Red River, located approximately 575 m east of the Site, is the nearest surface water body.

Stantec was provided with and reviewed the following reports (appended to this letter):

- AMEC Environment and Infrastructure (AMEC), August 26, 2013 "Phase I Environmental Site Assessment, Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street, Winnipeg, Manitoba". Prepared for the City of Winnipeg Planning, Property & Development Department (AMEC Phase I ESA).

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

- AMEC, June 3, 2014 “Phase II Environmental Site Assessment, Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street, Winnipeg, Manitoba”. Prepared for the City of Winnipeg Planning, Property & Development Department, Municipal Accommodations Division (AMEC Phase II ESA).

In addition, Stantec obtained and reviewed the following documents from Manitoba Sustainable Development (MSD) (appended to this letter):

- Wardrop Engineering Inc. (Wardrop), December 18, 2003. “Remedial Action Plan, 151 Princess Avenue [sic], Winnipeg, Manitoba”. Prepared for Manitoba Conservation (now MSD). (Wardrop RAP).
- Response from Manitoba Conservation to Wardrop Engineering Inc., December 22, 2003 “Remedial Action Plan for Public Safety Building, 151 Princess Avenue [sic], Winnipeg, Manitoba”.

Stantec was also provided with an Underground and Aboveground Petroleum Tank Removal Report completed by a Licensed Petroleum Technician (LPT); however, the name of the contractor is not legible.

Based on our review of the above documents, the following was identified:

- Wardrop noted that previous environmental investigations completed at 151 Princess Street indicated the presence of petroleum hydrocarbon (PHC)-impacted soil at concentrations that may exceed the Canadian Council of Ministers of the Environment (CCME) commercial soil quality guidelines and the CCME Canada Wide Standards (CWS) for PHC in soil in a commercial land use setting.
- The Wardrop RAP for the Site included the following activities to be undertaken on December 19, 2003:
 - Excavation and off-site treatment of approximately 100 cubic metres of impacted soil.
 - Installation of a polyethylene liner if confirmatory soil samples from the excavation walls exceed applicable criteria (Wardrop used the CCME Environmental Soil Quality Guidelines and the CWS for PHC Eco Soil Contact).
 - Backfilling of the excavation with imported clean fill material.
- Manitoba Conservation acknowledged receipt of the Wardrop RAP and confirmed that verbal approval was granted to proceed with the work on December 18, 2003.

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

- The Underground and Aboveground Petroleum Tank Removal Report completed the LPT stated that a 500-gallon fuel tank was removed from 151 Princess Street and noted that impacted soil was observed at the bottom of the excavation, which Wardrop was sampling. The tank was disposed of at General Scrap on February 9, 2004. It was also noted in documentation with the tank removal that “samples would be taken, the excavation filled in until such a time as the results came back, and then the soil would be removed”.
- With regard to a closure report, MSD stated, “we did not receive a response from the consultant concerning the soil sampling, only a completion report from the LPT” (R. Reichelt, personal communication, May 7, 2018).
- The AMEC Phase I ESA identified six areas of actual or potential environmental concern (APECs). APECs of note include a former automotive service centre with USTs in the northeast corner of the Site, a former hydraulic hoist in the basement of the Site, and potential residual hydrocarbon impacts in the area of a 2,270 L diesel UST on the Site. A monitoring well was noted to the northeast of the Civic Center Parkade (was reported as northwest by AMEC) approximately 2 m east of the fill cap of the diesel UST. In addition, AMEC noted the potential for hazardous building materials and mould in the site buildings.
- In February 2014, AMEC completed a Phase II ESA at the Site. The Phase II was intended to investigate whether impacts existed at the Site as a result of the six APECs identified in the August 2013 Phase I ESA.
 - Fifteen test holes were advanced by AMEC in December 2013. 21 soil samples were submitted for laboratory analysis, with 18 of them submitted for analysis of benzene, toluene, ethylbenzene and xylene (BTEX) and petroleum hydrocarbon (PHC) fractions F1 to F4 (F1-F4), 10 for metals, 12 for volatile organic compounds (VOCs), and one for polychlorinated biphenyl (PCBs).
 - The results of the soil samples analyzed for VOCs and PCBs were below laboratory detection levels and below CCME guidelines.
 - Detectable PHC concentrations were contained in seven of the samples, though none of these concentrations exceed current Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for a commercial site with fine-grained soils.

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

- One of the samples submitted for metals analysis marginally exceeded the barium CCME guideline of 2,000 µg/g at a depth of 2.3 m below the concrete surface of the underground Civic Center Parkade; however, based on the approximate depth of the parkade floor beneath ground surface, the depth of the barium impact is approximately 6.8 m below ground surface (m BGS). The barium concentration in the sample submitted was 2,020 µg/g.
- AMEC recommended that the 2,270 L diesel UST located at the Site be removed and soil sampling be completed if the property was to be sold or redeveloped. AMEC recommended that if impacts were encountered in the area of the UST, the impacts be excavated when accessible.

In addition, on April 9, 2018, Stantec completed a site walk-through, accompanied by City of Winnipeg staff. The Site was observed for the presence of potential sources of environmental contamination. The following was identified:

- Two approximately 500 L day tanks were present within 151 Princess Street - one in the Generator Room in the basement and one in Generator Room #1 on the 6th floor.
- The fill cap for the existing UST was located in the flower bed along the north side of the northeast ramp.
- The on-site monitoring well was observed near the northeast corner of the Civic Centre Car Park as reported by AMEC.

The following sections describe the remediation objectives and proposed scope of work for the remediation activities at the Site.

REGULATORY GUIDELINES

The same regulatory framework that provided guidance in the determination of impacts in the prior assessment is proposed for use during demolition activities. This framework consisted of the following:

- Canadian Council of Ministers of the Environment (CCME). 1999. Canadian Environmental Quality Guidelines (CEQG) for the Protection of Environmental and Human Health. Report 1-896997-34-1. Publication No. 1299. Winnipeg, Manitoba (on-line summary tables).
- Canadian Council of Ministers of the Environment (CCME). 2001. Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil. Endorsed by CCME Council of Ministers, May 1, 2001, Winnipeg (Revised in January 2008).

The present use of the Site is commercial; however, future development for the Site may include residential land use. Accordingly, Stantec proposes remediation to the stipulated residential land use guidelines/standards located within these documents.

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

Additionally, the selected contractor will have regard to the *Manitoba Sustainable Development Guideline Treatment and Disposal of Petroleum Contaminated Soil, June 2016* in terms of the sampling program design for the excavation and the *Dismantling and Removal of Petroleum Product and Allied Product Storage Tank Systems, October 3, 2014* during the removal of the UST and ASTs.

As water is supplied to the Site and surrounding area by the City of Winnipeg municipal water system, the protection of potable groundwater exposure pathway has been eliminated.

PROPOSED REMEDIATION PLAN

Stantec's role is to develop tender documents for the demolition of the existing structure and removal of infrastructure present at the Site and then oversee the on-site activities on behalf of the City of Winnipeg. The available documentation outlined above, and this Remediation Plan will be included in the tender documentation to guide the bidding and selected contractor. Based on the findings of the previous environmental investigations and former activities at the Site as outlined above, the following are the proposed remediation plan for the Site to be completed during the building demolition activities which will be overseen by Stantec:

- With respect to the barium soil impact identified in the borehole advanced in the Civic Center Parkade at an approximate depth of 6.8 m BGS, does not appear to present a risk to human health. In addition, the concentration is below the soil quality guideline for human health (direct contact guideline, most stringent of the human health guidelines for a residential property) of 6,800 ug/g for a residential property, which is an appropriate pathway-specific guideline for this Site. Accordingly, it is proposed that no action be undertaken at this time with relation to the barium soil impacts.
- The day tanks located within the Public Safety Building will be removed under the direction of an LPT and be disposed of at an appropriate receiving facility.
- The 2,270 L diesel UST located northeast of the Civic Center Parkade will be removed under the direction of an LPT and disposed of at an appropriate receiving facility.
 - Stantec will collect verification soil samples for petroleum hydrocarbons from the excavation limits following UST removal. Should petroleum hydrocarbon impacted soil be identified during the removal of the UST, the identified impacted soil will be excavated for proper off-site disposal. Depending on the soil concentrations and disposal facility approval, the contractor will transport excavated impacted soil to either the Mid Canada Soil Treatment Facility located approximately 30 km from the Site in Ile des Chenes, Manitoba or to Prairie Green Landfill located approximately 17 km from the Site in Stony Mountain, Manitoba.
 - Stantec will use field visual observations and soil screening (RKI Eagle 2™ portable gas detector) during the verification soil sample collection following UST removal and subsequent excavation of identified soil impacts to guide excavation of petroleum

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

- hydrocarbon impacted soils, should they be identified. Laboratory analysis for petroleum hydrocarbons for floor and wall samples will confirm remediation completion.
- Excavation activities for petroleum hydrocarbon impacted soil, if present, as discussed above will not interfere with any of the surrounding roadways.
- Upon completion of the excavation and confirmation of remediation success through analytical results on the excavation floor and walls, the contractor will be required to backfill the excavation area in accordance with the tender specification for Site backfilling.
- Under Stantec's direction, the existing monitoring well located to the northeast of the Civic Center Parkade will be decommissioned in an appropriate manner during the removal of the UST.

SCHEDULE OF ACTIVITIES

The removal of the day tanks and UST including verification sampling activities following UST removal will be scheduled by the selected contractor but based on the project schedule are anticipated to be completed in concert with building demolition. The building demolition, tank removal, and remedial activities, as required, are anticipated to be completed between September 2019 and May 2020. Following AST and UST removal, remediation of impacted soils as required, Stantec will prepare a brief Remediation Plan Closure report to MSD.

Should additional areas of soil impacts be identified during the demolition activities at the Site, an update of the findings and proposed activities will be provided to MSD for review and approval.

REMEDIATION PLAN APPROVAL

At this time, the City of Winnipeg is seeking 'approval in principle' of the Remediation Plan outlined above from MSD, with the understanding that further details will be shared as they are confirmed and a more specific timeline for Site decommissioning is known and with the understanding that all remediation actions taken (whether on-site management, excavation, or risk assessment) will be reported in a Remediation Plan Closure report once Site activities are completed.

CLOSURE

This Remediation Plan is prepared for the sole benefit of Manitoba Sustainable Development and the City of Winnipeg. The plan may not be relied upon by any other person or entity without the express written consent of Stantec Consulting Ltd. and the City of Winnipeg. Limitations appended also extend to this letter.

Any use which a third party makes of this plan, or any reliance on decisions made based on it, is the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this plan.

March 28, 2019
Warren Rospad, Contaminated Sites Specialist
Page 7 of 7

Reference: Remediation Plan for the Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street in Winnipeg, Manitoba

We trust that the enclosed information is sufficient and request your approval of this Remediation Plan after which the outlined activities will be completed following the proposed schedule. If you have any questions or concerns, please do not hesitate to contact us.

This report was prepared by Scott Coughtrey, B.Env.Sc., EPt, and reviewed by and Karen Mathers, M.Sc., P.Geo. FGC, PMP.

Regards,

Stantec Consulting Ltd.



Scott Coughtrey B.Env.Sc., EPt
Project Manager, Environmental Services
Phone: (204) 928-7612
Scott.Coughtrey@stantec.com



Karen Mathers M.Sc., P.Geo. FGC, PMP
Principal, Environmental Services
Phone: (204) 924-5735
Karen.Mathers@stantec.com

Attachment: Limitations
Figure 1 – Site Location
Figure 2 – Site Diagram

Provided via FTP:

- Phase I Environmental Site Assessment, Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street, Winnipeg, Manitoba, dated August 26, 2013 (AMEC Phase I ESA)
- Phase II Environmental Site Assessment, Public Safety Building & Civic Center Parkade, 151 & 171 Princess Street, Winnipeg, Manitoba, dated June 3, 2014 (AMEC Phase II ESA)
- Remedial Action Plan, 151 Princess Avenue [sic], Winnipeg, Manitoba, dated December 18, 2003 (Wardrop RAP)
- Response from Manitoba Conservation to Wardrop Engineering Inc., dated December 22, 2003
- Tank Removal Report, dated December 22, 2003

c. Tracy Stople, City of Winnipeg
cs v:\1114\active\144517067_psb\remediation_plan\let_rem_plan_psb_final_20190328.docx

LIMITATIONS

This Remediation Plan has been prepared for the sole benefit of Manitoba Sustainable Development and may not be used by any other person or entity without the express written consent of Stantec Consulting Ltd. and the City of Winnipeg.

This plan documents a review of work that was completed by others. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this plan or the source documents provided to Stantec, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This plan provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information since provided to Stantec. There are no assurances regarding the accuracy and completeness of this information. All information received in the preparation of this plan has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

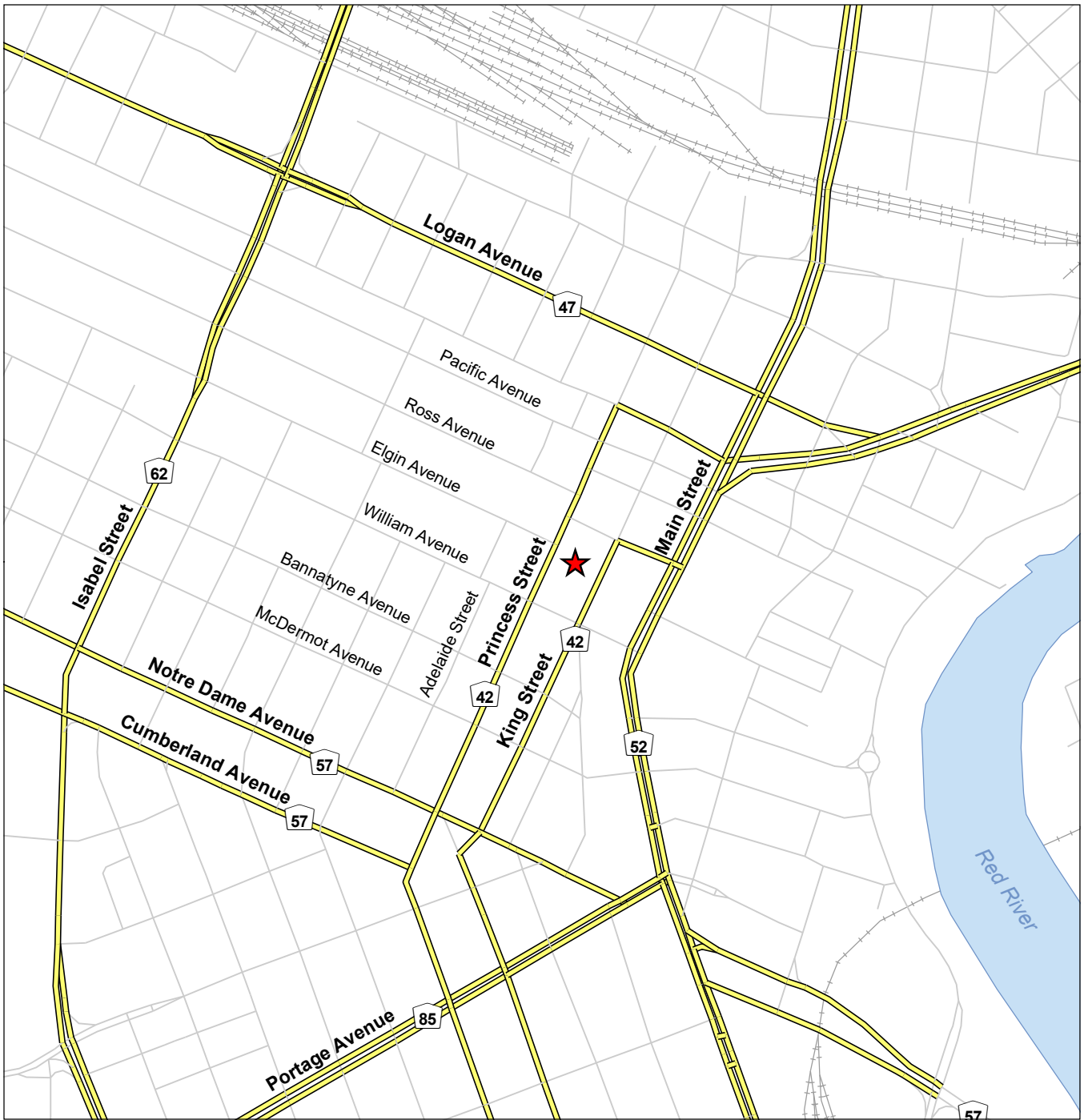
The opinions in this plan can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted by others. Activities at the property subsequent to the assessments may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

This plan has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this plan.

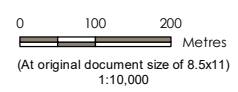
The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by others at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Due to the nature of the investigation and the limited data available as well as the fact that the work was completed by others, for which Stantec cannot ascertain the completeness or accuracy, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this plan is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this plan, Stantec specifically disclaims any responsibility to update the plan.



- Legend**
-  Site Location
 -  Major Road
 -  Minor Road
 -  Railway
 -  Waterbody



Project Location 151 & 171 Princess Street, Winnipeg, Manitoba
 Prepared by ACampigotto on 2019-03-19
 Reviewed by S Coughtrey on 2019-03-19

Project Remediation Plan
 151 & 171 Princess Street
 Winnipeg, Manitoba
 144517067

Figure No. 1

Title Site Location Plan





DRAFT

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 14N
 2. Base features provided by the Government of Manitoba and the Government of Canada

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



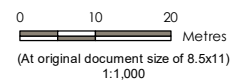
Legend

-  Approximate Location of Existing Monitoring Well
-  Approximate Location of Barium Exceedance
-  Approximate Location of Current and Former USTs
-  Approximate Site Boundary

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base features provided by the Government of Manitoba and the Government of Canada
3. Imagery Source: Microsoft product screen shot reprinted with permission from Microsoft Corporation.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Project Location 151 & 171 Princess Street; Winnipeg, Manitoba
 Prepared by ACampigotto on 2019-03-19
 Reviewed by SCoughtrey on 2019-03-19

Project 144517067
 Remediation Plan
 151 & 171 Princess Street
 Winnipeg, Manitoba

Figure No.
2

DRAFT

Title
Site Diagram



Sustainable Development

Environmental Stewardship Division
Environmental Approvals Branch
1007 Century Street, Winnipeg, Manitoba R3H 0W4
T 204-945-8321 F (204) 945-5229
www.manitoba.ca/sd

Tracy Stople
City of Winnipeg
3rd Floor – 65 Garry Street
Winnipeg, MB R3C 4K4

April 8, 2019

Dear Ms. Stople:

Re: Proposed Remediation Plan for 151 & 171 Princess Street, Winnipeg, Manitoba;
Approval under the Contaminated Sites Remediation Act

This will acknowledge receipt of the Remediation Plan for the above noted property (the site) dated {date} and prepared by {consultant}.

March 28, 2019.

This letter constitutes written authorization as specified under The Contaminated Sites Remediation Act, C.C.S.M, c. C205, s. 17.1 (1) for the City of Winnipeg to proceed with the remediation of the site as described in the Remediation Plan. Any change to the Remediation Plan must be approved by the undersigned prior to initiating the change.

It is requested that a Summary Report documenting the remediation is submitted to this office for review at the completion of the Remediation Plan.

It should be noted that the position of Manitoba Sustainable Development as stated in this letter is based on the information provided to this office by Stantec Consulting Ltd. and relates only to the matters within the scope of the Remediation Plan submitted by Stantec Consulting Ltd.

If you have any questions regarding this letter, please contact Warren Rospad, Contaminated Sites Program Specialist at 204-330-2685 or warren.rospad@gov.mb.ca. Please note that electronic submissions are preferred for documents and correspondence.

Sincerely,

Tracey Braun, M. Sc.
Director

c. File: 28093
Karen Mathers (Stantec Consulting Ltd.)
Environmental Compliance and Enforcement Branch