

**LICENSE AGREEMENT RELATING TO
STORMWATER OUTFALLS 626 AND 627
IN THE ROCK BAY AREA OF VICTORIA
HARBOUR DATED AS OF July 30th, 2014**

BETWEEN:

THE CORPORATION OF THE CITY OF VICTORIA
1 Centennial Square, Victoria, B.C. V8W 1P6

(the "City")

AND:

HER MAJESTY THE QUEEN IN RIGHT OF CANADA
represented by the Minister of Transport, 620 – 800 Burrard Street, Vancouver,
B.C. V6Z 2J8

("Transport Canada")

(referred to together as the "Parties")

WHEREAS:

- A. Between 2004 and 2015 Transport Canada has and will remediate certain lands below the high water mark owned by Transport Canada in the Rock Bay area of Victoria Harbour shown in dark outline on the sketch attached as Schedule A to this Agreement (the "License Area");
- B. Transport Canada's investment in the remediation of Rock Bay will provide significant environmental benefit and improvement to the sediment, sub-strate and sub-surface material in Rock Bay and the Parties wish to protect it from re-contamination;
- C. The City owns, operates and maintains two storm water lines and outfalls commonly referred to as Outfalls 626 and 627 (the "Storm Water Outfalls") which are located on and discharge storm water and associated matter into the License Area;
- D. The City requires and Transport Canada has agreed to provide ongoing access for the Storm Water Outfalls subject to the monitoring requirements and other terms of this Agreement;

- E. Transport Canada also currently owns the lands upstream of the License Area upon which the Storm Water Outfalls are located. Transport Canada will ensure a Statutory Right of Way is granted to the City after the remediation works are completed and as part of the divestiture of its Rock Bay properties. This Statutory Right of Way is described in more detail in the Framework Agreement between these parties dated July 30th, 2014 (the "Statutory Right of Way");
- F. Transport Canada believe the Storm Water Outfalls have been a historical and ongoing source of re-contamination to Rock Bay sediments in the License Area;
- G. Transport Canada and the City recognize that appropriate management measures are required to mitigate risks posed by the Storm Water Outfalls;
- H. The Parties have agreed to a process that will ensure that all the required mitigation, monitoring, and follow-up works related to potential contamination resulting from the discharge of storm water and associated matter from the Storm Water Outfalls are carried out.

NOW THEREFORE in consideration of one dollar (\$1.00) paid by each party to the other party, and other valuable consideration as described below, the Parties agree as follows:

1.0 DEFINITIONS

- 1.1 Unless otherwise specifically defined herein, the following terms have the following meanings:

"Agreement" means this Agreement and includes all Schedules thereto.

"Applicable Environmental Laws" means any government laws, rules, ordinances, statutes, regulations, orders, bylaws, or codes having the force of law, now or hereafter in force whether federal, provincial, or municipal relating to the environment or to the environmental conditions in, on, or over the License Area.

"Environment" includes the air (including all layers of the atmosphere), land (including soil, sediments, fill, lands submerged under water, buildings, improvements and structures), water (including oceans, lakes, rivers, streams, groundwater and surface water), and all other external conditions and influences under which humans, animals and plants live or are developed;

"Framework Agreement" means the Agreement between Transport Canada and the City of Victoria dated July 30th, 2014

"Remediation" means all actions associated with remediating the environmental condition of the lands located within the License Area.

"Storm Water Outfalls" means the two storm water lines, associated outfalls, headwalls, and any associated infrastructure commonly referred to as Outfall 626 and 627, which are operated and maintained by the City.

2.0 LICENSE

Transport Canada hereby grants to the City the non-exclusive right and license to place and maintain the Storm Water Outfalls for and during the Term in the locations described in Schedule A.

3.0 TERM

- 3.1 The term of this Agreement (the "Term") shall be 20 years commencing from the date the Transport Canada contractor has received its certificate of completion for the Remediation of the License Area, expected to occur in late 2015.

4.0 TERMINATION

- 4.1 If the City fails to undertake the monitoring or the associated source control activities or report on same for 2 consecutive years after written notice from Transport Canada, Transport Canada may at its option terminate this Agreement by giving 12 months written notice. The Parties agree that such a termination will not affect the indemnity provisions in this agreement or alter the responsibilities of the City regarding recontamination of the Rock Bay License Area.

5.0 OBLIGATIONS OF THE CITY

- 5.1 The City shall operate, maintain, monitor and repair the Storm Water Outfalls in a manner, consistent with good engineering practices, that minimizes the risk of contamination of sediments within Rock Bay and complies with all Applicable Environmental Laws.
- 5.2 The City shall implement a monitoring program as described in Exhibit A, and submit to Transport Canada the sampling plans and other materials identified in that Exhibit. The Parties may at any time jointly amend, update or revise the monitoring or source control activities contemplated by this Agreement.

- 5.3 If the project co-ordinator for the City and the project co-ordinator for Transport Canada have not agreed in writing to different monitoring plan, the City will complete the minimum sampling program described in Exhibit C once every 2 years.
- 5.4 The City shall conduct appropriate source tracing and source control actions as described in Exhibit B and as necessary to mitigate potential storm water-associated re-contamination of Rock Bay sediments.
- 5.5 Every calendar year the City shall complete a report that describes the activities and results of its monitoring and source controls, as described in more detail in Exhibits A, B and C.
- 5.6 The City, as part of its reporting, shall provide a copy of all final reports to Transport Canada who may share them with the Esquimalt Nation, the Songhees Nation, the Veins of Life Society, and other interested parties.
- 5.7 The City shall designate a project coordinator to interact with Transport Canada on any matters related to this Monitoring Agreement. The City shall designate a technical lead to be responsible for implementation of the activities described in Exhibits A, B and C.
- 5.8 Whenever requested, the City will provide written confirmation of the name of the project coordinator and technical lead.
- 5.9 The City shall cooperate and consult with Transport Canada regarding public relations and publicity matters that may arise from this Agreement.
- 5.10 The City shall notify Transport Canada in advance prior to undertaking any major repairs or alterations to the Storm Water Outfalls which require accessing Transport Canada property, except in emergency situations when advance notification cannot be reasonably achieved. In emergency situations, notification shall be conducted as soon as practicable. The City need not notify Transport Canada in advance of routine maintenance or inspections of the Storm Water Outfalls.
- 5.11 The City shall be responsible for complying and completing all applicable federal, provincial and municipal approvals to undertake any maintenance, repairs or operations of the Storm Water Outfalls.

- 5.12 To the extent that it is shown that the City's operation of the Storm Water Outfalls resulted in sediment contamination of the License Area in excess of Applicable Environmental Laws or in excess of federal guidelines for contaminated sediments (including but not limited to the Canadian Council of Ministers of the Environment probable effects levels or "PEL") current as of the date of this Agreement, the City shall be responsible for conducting all investigation, risk assessment and remediation activities for such outfall-associated contamination as necessary to address the resulting contamination and ensure compliance with Applicable Environmental Laws and federal guidelines.
- 5.13 The City covenants with Canada to indemnify and save harmless Canada against all losses, damages, costs and liabilities arising out of :
- i) any breach of this Agreement by the City; and
 - ii) any personal injury, death or property damage due to the City's occupation and use of the License Area or due to the negligence or intentional acts or omissions of the City or any of its employees, agents, servants or any other representatives.
- 5.14 The obligation of the City to indemnify Canada hereunder shall survive any expiry or termination of this Agreement, anything in this Agreement to the contrary notwithstanding.

6.0 OBLIGATIONS OF TRANSPORT CANADA

- 6.1 Transport Canada shall designate a project coordinator to interact with the City on any communications subject to this Agreement.
- 6.2 Transport Canada shall also designate a technical reviewer to provide review of the submittals to be prepared by the City as described in Exhibits A, B and C.
- 6.3 Whenever requested by the City Transport Canada will provide written notice of the project coordinator and technical lead.
- 6.4 Transport Canada will provide access to the City's Storm Water Outfalls infrastructure to allow for its proper operation, maintenance, monitoring, and repairs, subject to the notification and indemnification provisions contained in this Agreement.
- 6.5 Transport Canada will provide access to conduct storm water and sediment monitoring, provided that such monitoring is conducted pursuant to a sampling and analysis plan approved by Transport Canada following the procedures in Exhibit A.

- 6.6 Transport Canada shall consult with the City as reasonably necessary to implement this Agreement, in connection with requests and requirements of regulatory authorities, before making commitments to any steps or any conduct relating to requests and requirements of regulatory authorities.
- 6.7 Transport Canada shall cooperate and consult with the City regarding public relations and publicity matters that may arise from this Agreement.

7.0 AUDIT OF MONITORING AND SOURCE CONTROL

- 7.1 The City will fund an independent audit of its monitoring and source control activities every 3 years. It is anticipated that this audit will take less than three days and will mainly consist of a desk top review of the sampling program and other activities associated with this Agreement.
- 7.2 The City shall provide to the auditor the relevant background materials and access to relevant staff as requested.
- 7.3 The auditor shall be mutually agreed to between the Parties and the first audit shall be performed by Hemmera Envirochem Inc. unless an alternative is agreed to by the Parties.
- 7.4 The auditor shall provide a written report, no later than January 15 for the preceding three year period ending on December 31, to:
- the project coordinator for each of the Parties
 - the Band Administrator for the Esquimalt Nation
 - the Band Administrator for the Songhees Nation; and,
 - the Executive Director of the Veins of Life Society.

8.0 REPORTING AND COMMUNICATIONS AND FIVE YEAR REVIEW

- 8.1 It is understood by the Parties that given the local interest in the issue of contamination of the Remediation Area that Transport Canada intends to periodically update regulatory agencies, stakeholders and local First Nations representatives, and may make available for their review the documents developed under this Agreement.
- 8.2 The Parties agree to meet every 5 years within 60 days of the end of the calendar year, Transport Canada shall organize a meeting, and City coordinator shall attend such a meeting, to review the results of the monitoring and source

control activities, audits to date, input from the Esquimalt and Songhees First Nations and stakeholders, and other documentation to ensure they continue to meet the objectives of this Agreement. If the Parties determine there are more efficient or effective means to ensure that the License Area will not be recontaminated as a result of the discharges from the Storm Water Outfalls they will amend the monitoring and source control activities accordingly.

9.0 DISPUTE RESOLUTION

9.1 The City and Transport Canada will refer any disagreement or dispute relating to this Agreement to the Regional Director, Programs Branch, Pacific Region of Transport Canada and City Manager of the City of Victoria or their designated representatives.

9.2 Nothing herein shall preclude either party from recourse to the Courts.

10.0 NOTICES

10.1 Any notice or other communication between the Parties shall be in writing and shall be: a) delivered personally; or b) mailed by registered mail, return receipt requested; or sent by facsimile transmission, and addressed as follows:

Her Majesty the Queen in Right of Canada
represented by the Minister of Transport:

Lori Young
Regional Director Programs Branch
620 - 800 Burrard Street
Vancouver, B.C. V6Z 2J8
Fax # (604) 666-8025

The City of Victoria

Rob Woodland
Corporate Administrator
1 Centennial Square
Victoria, BC V8W 1P6
Fax # (250) 361-0348

11.0 ASSIGNMENT

- 11.1 This Agreement is intended for the explicit and specific benefit of the parties to this Agreement and their successors. Transport Canada, at its sole discretion, may assign this agreement in the event the harbour floor, covered by this Agreement, is sold, divested or disposed of in some manner to a non-federal entity.

12.0 ALLOCATION OF LIABILITY

The Parties agree that after completion of the Remediation, which is scheduled for completion by 2015 the harbour floor, including the sub-strate, sediments and associated sub-surface material, in the License Area, all of which will be newly placed there, will be free of contamination. This condition will be confirmed by Transport Canada in the form of an Environmental Baseline Study to be provided to the City. After completion of the Remediation the City will be responsible for all investigations, costs, remediation or any other expenses associated with re-contamination of the Remediation Area associated with discharges from the Storm Water Outfalls.

13.0 NOT A PARTNERSHIP

- 13.1 Nothing in this Agreement shall be construed as creating an agency, partnership or joint venture relationship between the Parties. Neither Party is authorized to represent, bind, obligate or contract on behalf of the other in any manner whatsoever, or represent to third parties that it is an agent of, or partner with, or in a joint venture relationship with the other.

14.0 APPLICABLE LAWS

- 14.1 This License Agreement shall be interpreted in accordance with the laws in force in the Province of British Columbia, subject always to any paramount or applicable federal laws. Nothing in this License Agreement is intended to or shall be construed as limiting, waiving or derogating from any federal Crown prerogative.

15.0 AMENDMENTS

- 15.1 No supplement, modification or waiver of the Agreement shall be binding unless executed in writing by the Parties. No waiver of any of the provisions of the Agreement shall be deemed or shall constitute a waiver of any other provision

(whether or not similar) nor shall such waiver constitute a continuing waiver unless otherwise expressly provided.

16.0 CONFLICT OF INTEREST

- 16.1 No former public office holder, who is not in compliance with the post-employment provisions of the Conflict of Interest and Post Employment Code for Public Office Holders, shall derive a direct benefit from this Agreement.

17.0 SURVIVAL

- 17.1 All rights and obligations which, expressly or by necessary implication, are required or might reasonably be expected to survive the expiration or termination of this Agreement shall continue to be in effect notwithstanding the expiration or termination of this Agreement until such time as the Parties may mutually agree to the release of the obligations contained therein. Without in any way limiting the foregoing, it is expressly agreed that articles 5.13 and 12 [allocation of liability] and this paragraph shall survive the expiration or termination of this Agreement.

18.0 ENTIRE AGREEMENT

- 18.1 This Agreement and all annexes listed throughout constitute the entire agreement between the Parties. There are no undertakings, representations, promises or warranties, express or implied, other than those contained in this Agreement and its annexes.

19.0 SEVERABILITY

- 19.1 If any provision of this Agreement is held to be invalid or unenforceable, the remainder of this Agreement or the application of the provision to circumstances other than those in relation to which it is held invalid or unenforceable shall not be affected.

20.0 EXECUTION OF AGREEMENT

- 20.1 The parties agree that this agreement may be executed by the parties signed in counterpart.

21.0 REPRESENTATIONS AND WARRANTIES

21.1 The parties each represent and warrant that they have the necessary authority to enter into this Agreement and to perform their obligations under this Agreement.

22.0 SIGNATURES

The Parties have executed this Agreement by the hands of their duly authorized officers as follows:

HER MAJESTY THE QUEEN IN RIGHT OF CANADA
as represented by the Minister for Transport

By: Robert Paul 'homer'

Title: A/Regional Manager

Signature: [Signature]

WITNESS

Ian Chatwell

Regional Manager Environmental Services

Signed this 12 day of August, 2014

THE CITY OF VICTORIA
authorized signatories

By: [Signature]

Title: _____

Signature: _____

ROBERT G. WOODLAND
Corporate Administrator
City of Victoria
#1 Centennial Square
Victoria BC V8W 1P6

By: _____

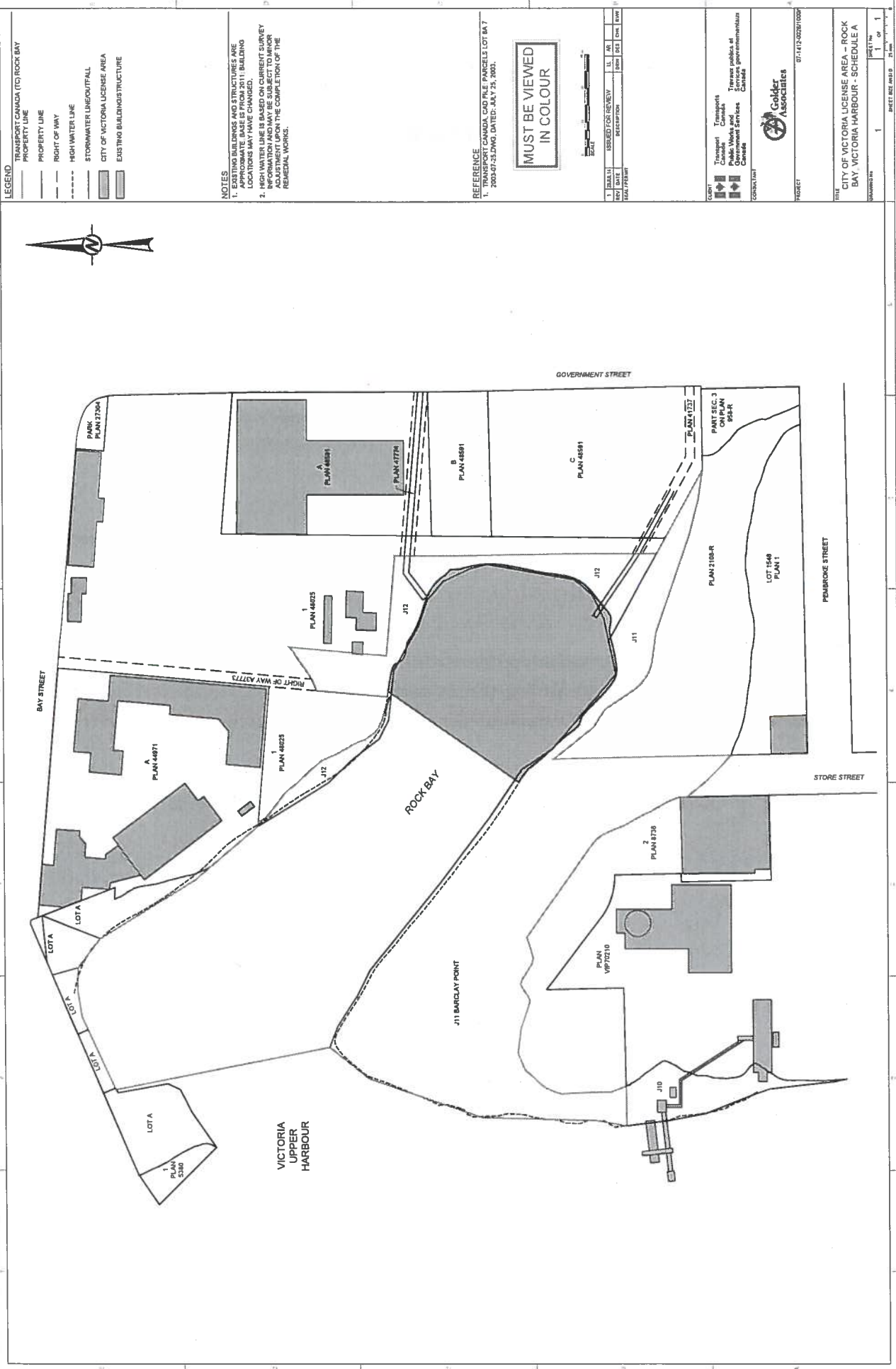
Title: _____

Signature: [Signature]

Signed this _____ day of July, 2014

This Agreement includes the following: Schedule A, Exhibit A, Exhibit B, Exhibit C

Schedule A



- LEGEND**
- TRANSPORT CANADA (TO ROCK BAY)
 - PROPERTY LINE
 - RIGHT OF WAY
 - HIGH WATER LINE
 - STORMWATER LINE/OUTFALL
 - CITY OF VICTORIA LICENSE AREA
 - EXISTING BUILDINGS/STRUCTURE

NOTES

1. EXISTING BUILDINGS AND STRUCTURES ARE APPROXIMATE BASE IS FROM 2011. BUILDING LOCATIONS MAY HAVE CHANGED.

2. HIGH WATER LINE IS BASED ON A RECENT SURVEY. THE LINE IS SUBJECT TO ADJUSTMENT UPON THE COMPLETION OF THE REMEDIAL WORKS.

REFERENCE

CANADA CAD FILE PARCELS LOT BA 7
1. 2003/07/25.DWG, DATED: JULY 25, 2003.

**MUST BE VIEWED
IN COLOUR**



NO.	DATE	REVISION	BY	CHK	APP
1	2003/07/25	ISSUED FOR REVIEW	LL	AB	
2	2003/07/25	ISSUED FOR REVIEW	LL	AB	
3	2003/07/25	ISSUED FOR REVIEW	LL	AB	

COMPANY

Transport Canada
Public Works and
Government Services
Canada

PROJECT

07-1412-0020/1000

CLIENT

CITY OF VICTORIA LICENSE AREA - ROCK
BAY, VICTORIA HARBOUR - SCHEDULE A

DATE

1

SCALE

1" = 100'

EXHIBIT A: OUTFALL MONITORING PROGRAM

This exhibit identifies the minimum requirements for monitoring of stormwater solids, stormwater and sediments associated for Outfalls 626 and 627. That monitoring is to be conducted to monitor the quality and quantity of stormwater solids being discharged to Rock Bay, and to assess whether those discharges are causing pollutants to recontaminate the sediments of Rock Bay. The monitoring shall be conducted by the City of Victoria or its representatives in accordance with the minimum requirements as specified below.

A.1 SAMPLING AND ANALYSIS PLAN

Within 120 days of the execution of the licence agreement, the City of Victoria shall submit a draft sampling and analysis plan (**Draft SAP**) to Transport Canada describing the specific methods to be used for stormwater and sediment monitoring at outfalls 626 and 627. The Draft SAP will include methods for sample positioning, collection, handling, processing (preserving, storage, and tracking), analytical testing requirements and data quality objectives. The plan shall include the minimum requirements listed in "Option B: Protective Monitoring" as described in the *Recommended Monitoring Framework to Address Stormwater Outfall Recontamination Risks to Sediments* (Anchor QEA 2012). That Option includes the key elements listed in Table A-1 below.

Transport Canada shall have 60 days on which to provide comments to the City of Victoria on the Draft SAP. If written comments are provided by Transport Canada during this time period, then the City shall address these comments and provide a **Final SAP** to Transport Canada within 60 days of receiving such written comments. The Final SAP shall include a summary of written comments received and how those comments have been addressed in the Final SAP. If no written comments are received from Transport Canada during the 60-day comment period, then the Draft SAP shall be considered the Final SAP.

The Final SAP shall be considered approved by Transport Canada provided that 1) it meets the minimum requirements listed in Table A-1, and 2) Transport Canada's comments have been addressed.

A.2 MONITORING

The City of Victoria shall implement monitoring activities consistent with the Final SAP (or for future monitoring events conducted after a Final Revised SAP, as described in the Final Revised SAP – see Section A.4). Monitoring shall be conducted by the City of Victoria staff or its authorized representatives. Authorized representatives may include qualified environmental professionals with documented experience conducting stormwater and sediment sampling. Monitoring activities may alternatively be conducted during implementation of monitoring performed by the Capital Regional District, provided that such monitoring complies with the Final SAP or with the schedule requirements listed in Table A-1.

**Table A-1:
SAP and Monitoring Requirements ^[1]**

Sample Media	Requirements
In-Line Sampling of Stormwater Solids	<ul style="list-style-type: none"> • Biennial Sampling: In-line stormwater solids testing shall be performed every other year (i.e., at years 1, 3, and 5 after execution of the licence agreement). • Two in-line locations per outfall: The plan shall identify two monitoring stations within each outfall conveyance. The monitoring stations shall be located within 150 meters of the outfall discharge point, shall be in-line with the outfall (i.e., not on a lateral) and shall be downstream of any treatment structure to the extent practicable. • Initial analytical testing: Monitoring shall initially include testing for total solids, total organic carbon, oil and grease, grain size, heavy metals, semivolatile organic compounds, PCBs and dioxin/furan compounds with the methods and reporting limits listed in Section 3 and Table 1 of Anchor QEA 2012.
Total Suspended Solids (TSS) Monitoring of Stormwater Discharges	<ul style="list-style-type: none"> • Biennial sampling: Stormwater TSS monitoring shall be performed every other year (i.e., at years 1, 3, and 5 after execution of the licence agreement). • One location per outfall: TSS monitoring shall be conducted either at the outfall discharge point or at one of the locations used for collection of in-line stormwater solids. The monitoring stations shall be located within 150 meters of the outfall discharge point, shall be in-line with the outfall (i.e., not on a lateral) and shall be downstream of any treatment structure to the extent practicable. • Sampling Conditions: Sampling shall be conducted during low-tide conditions to minimize tidal dilution effects and shall be conducted during a rainfall event with a peak intensity of at least 0.5 centimeters per hour. • Analytical Testing: Whole-water samples shall be collected in duplicate without filtering. Samples shall be analyzed for total suspended solids.
Sediment Sampling	<ul style="list-style-type: none"> • Sampling Every 5 Years: Sediment sampling shall be conducted every third biennial monitoring event (i.e., the 5th year after SAP approval). • Four Sampling Locations: The SAP will specify four sampling locations, including two near-outfall locations located 3-5 meters offshore of each outfall structure (2 locations) and two offshore locations located approximately 50 meters to the west of the outfall structures. Sampling locations shall be identified on a map with station coordinates suitable for use during sampling. • Initial analytical testing: Monitoring shall initially include testing of the top 5 centimeters of sediment for total solids, total organic carbon, oil and grease, grain size, heavy metals, semivolatile organic compounds, PCBs and dioxin/furan compounds using the methods and reporting limits listed in Section 3 and Table 1 of Anchor QEA 2012.

Note 1:

Monitoring locations, parameters and frequencies may be increased by the City beyond those listed in Table A-1. However, these requirements shall not be reduced without written approval from Transport Canada.

A.3 BIENNIAL MONITORING REPORTS

The results of biennial monitoring activities shall be summarized in a written draft report (**Draft Biennial Monitoring Report**). The Draft Biennial Monitoring Report shall be prepared by City of Victoria staff or by a qualified environmental professional. The Draft Biennial Monitoring Report shall summarize all monitoring activities performed by the City pursuant to this agreement. The Draft Biennial Monitoring Report shall include at a minimum the following:

- Identification of the firm(s) or individuals that performed the sampling and analysis activities
- Narrative description of sample collection and analysis methods, including any deviations from the Final SAP
- Figures showing the locations from which each sample was collected
- Copies of all analytical testing data, including laboratory quality assurance deliverables and sample chain-of-custody forms
- Copies of field sampling logs or notes
- Tabular summary of sampling and analysis results for each media (in-line stormwater solids, stormwater TSS and sediment sampling data)
- Tabular comparison of sampling data to previous results and identifying sampling results that exceed the CCME probable effects level (PEL)
- Narrative discussion of apparent increasing/decreasing trends for each parameter over time
- Narrative discussion of sediment impacts exceeding the PEL, if applicable
- Narrative discussion of in-line solids sample results exceeding 2-times the PEL, if applicable

Transport Canada shall have 60 days on which to provide comments to the City of Victoria on the Draft Biennial Monitoring Report. If written comments are provided by Transport Canada during this time period, then the City shall address these comments and provide a **Final Biennial Monitoring Report** to Transport Canada within 60 days of receiving such written comments. The Final Biennial Monitoring Report shall include a summary of written comments received and how those comments have been addressed. If no written comments are received from Transport Canada during the 60-day comment period, then the Draft Biennial Monitoring Report shall be considered the Final Biennial Monitoring Report.

A.4 SAP REVISION

Within 120 days of submittal of every third Final Biennial Monitoring Report (i.e., once every 5th year after SAP approval), the City of Victoria shall submit a draft revised SAP (**Draft Revised SAP**) to Transport Canada describing the specific methods to be used for monitoring of stormwater solids, stormwater and sediment at outfalls 626 and 627. The Draft Revised SAP will describe any proposed updates to the methods for sample positioning, collection, handling, processing (preserving, storage, and tracking), analytical testing and data quality objectives. The Draft Revised SAP may include additional monitoring parameters, improvements in analytical methods, or increases in monitoring frequency if previous testing data or other source control considerations warrant such additional actions. Unless otherwise approved in writing by Transport Canada, the Draft Revised SAP shall continue to meet the minimum requirements listed Table A-1, and as listed for Option B: Protective Monitoring as described in *Recommended Monitoring Framework to Address Stormwater Outfall Recontamination Risks to Sediments* (Anchor QEA 2012).

Transport Canada shall have 60 days on which to provide written comments to the City of Victoria on the Draft Revised SAP. If written comments are provided by Transport Canada during this time period, then the City shall address these comments and provide a **Final Revised SAP** to

Transport Canada within 60 days of receiving such written comments. The Final Revised SAP shall include a summary of written comments received and how those comments have been addressed in the Final SAP. If no written comments are received from Transport Canada during the 60-day comment period, then the Draft Revised SAP shall be considered the Final Revised SAP.

The Final Revised SAP shall be considered approved by Transport Canada provided that 1) it meets the minimum requirements listed in Table A-1 or as otherwise authorized by Transport Canada in writing, and 2) Transport Canada's comments have been addressed.

A.5 REFERENCES

Anchor QEA, LLC (2012). Recommended Monitoring Framework to Address Stormwater Outfall Recontamination Risks to Sediments. Rock Bay Sediment Remediation Project. Prepared for Public Works and Government Services Canada and Transport Canada. September 2012.

EXHIBIT B: STORMWATER SOURCE TRACING AND SOURCE CONTROL ACTIVITIES

This exhibit identifies the expectations for the types of source tracing and source control activities that may be conducted by the City of Victoria or its representatives in accordance with the Licence Agreement for Outfalls 626 and 627. The source tracing and source control activities are intended to be used where elevated pollutant loadings are identified in the outfall discharges that have the potential to impact sediment quality within Rock Bay, or in response to outfall-associated recontamination of sediments in excess of the CCME probable effects level (PEL).

B.1 ONGOING CITY STORMWATER MANAGEMENT ACTIVITIES

Nothing in this exhibit is intended to detract from the City's active stormwater management program. That program is expected to continue throughout the duration of the Licence Agreement. Ongoing City of Victoria stormwater management activities that are expected to continue throughout the duration of the Licence Agreement include the following:

- Maintenance, repair and rehabilitation of City-owned stormwater infrastructure (including conveyance and treatment infrastructure)
- Periodic removal of accumulated solids from City-owned catch basins, sediment traps and from the vortex treatment unit installed on Outfall 626
- Implementation of basin-wide stormwater inspection program
- Implementation of a basin-wide program to identify and correct cross-connections and illicit discharges (i.e., discharges of sewage or other non-stormwater materials to the storm drainage system)
- Maintaining a spill response system to respond to spills to the stormwater conveyance system
- Identification and implementation of periodic capital improvements necessary to maintain and improve the stormwater management system

B.2 TRIGGERS FOR ADDITIONAL SOURCE TRACING ACTIVITIES

Additional source tracing and control measures are to be implemented if elevated pollutant loadings at Outfalls 626 or 627 are identified that have the potential to impact Rock Bay sediment quality. Under the Licence Agreement the City is responsible for determining the appropriate level and type of source tracing and source control measures to apply. However, potential triggers for source tracing and source control measures will at a minimum include the following:

- **Discovery of Outfall-Associated Sediment Impacts:** Source tracing and control measures shall be implemented in response to the accumulation of outfall-associated pollutants in sediment near Outfall 626 and 627 in excess of applicable regulatory standards or in excess of federal guidance (regulatory standards and guidance include but are not limited to the CCME PEL. Detection of recontamination could arise during sediment monitoring performed in accordance with Exhibit A, during other monitoring performed by the City of Victoria or the Capital Regional District, or during other sediment monitoring studies.
- **Elevated Pollutant Loadings in Stormwater Solids:** Pollutant loadings in stormwater solids are to be monitored on a biennial basis as described in Exhibit A. Detection of pollutant loadings in

these solids at levels significantly above applicable regulatory standards for sediments (i.e., at levels exceeding 2x above the CCME PEL or other applicable standards as determined in a site-specific risk assessment) shall be a trigger for source tracing of these pollutants, even if sediment contamination at the outfalls has not been confirmed.

- **Increasing Pollutant Levels in In-Line Stormwater Solids:** Source tracing and control measures may also be warranted if monitoring activities in sediments or stormwater solids identify new pollutants or increasing trends in pollutant levels relative to previous observations.

B.3 EXAMPLES OF SOURCE TRACING ACTIVITIES

The City is responsible for implementing appropriate source tracing measures to prevent impacts to Rock Bay sediment quality from Outfall 626 and 627 stormwater discharges. There are many applicable resources presenting techniques and methods for source tracing. One recommended source is the *CSO & UR Investigative Assessment Guidelines, Fraser River Action Plan* (CUIAG; NovaTec et al. 1993). Examples of source tracing measures that may be appropriate to implement include the following:

- **Conveyance System Delineation:** Source tracing may require additional delineation of the stormwater drainage and conveyance system (including drainage pipes, connection points, and treatment structures). System delineation is not straightforward in older stormwater systems, and is rarely ever 100% complete. New and historical illicit connections can be difficult to locate.
- **Targeted Sampling:** Targeted sampling activities conducted as part of source tracing activities focus on the pollutants identified as having a potential to impact sediments. These pollutants may have different sources from other stormwater pollutants. Sampling typically proceeds iteratively, moving upstream from the outfall, including appropriate trunk or lateral pipes and structures as necessary to localize the pollutant source to smaller branches of the system. Sample methods can include grab sampling of in-line solids (or whole water) within the drainage infrastructure. Grab samples of solids are typically used when attempting to localize pollutants for protection of receiving water sediments.
- **Re-Sampling at Localized Sources:** If the source of the chemical of concern is found to be localized within the stormwater system, property inspections and investigations of individual properties may be used further localize one or more specific sources of the pollutants. If contaminants are localized to particular properties or portions of the drainage system but a specific ongoing source cannot be identified, then stormwater system cleaning and re-sampling after re-accumulation is a common technique used to assess whether the source is recurring or historical in nature.
- **Follow-up Testing to Assess Control Potential for Wide-Spread Sources:** Some chemicals of concern may be ubiquitous throughout the stormwater system. Once this has been established, follow-up source tracing efforts would focus on identifying what types of controls, best management practices, or treatment methods that could be employed to reduce pollutant loadings, if practicable. This focus is different than attempting to geographically localize the source (which in this case is widespread).

B.4 SOURCE CONTROL EXAMPLES

The City is responsible for implementing appropriate source control measures to reduce impacts to Rock Bay sediment quality from Outfall 626 and 627 stormwater discharges. Examples of source control measures that may be appropriate to implement include the following:

- **Elimination of Cross-Connections:** Where cross-connections or illicit discharges are the source of a pollutant, it is appropriate to eliminate the cross-connections or illicit discharges. These actions are consistent with the City's existing Stormwater Management Plan.
- **Increases to the Frequency of System Cleanouts:** If inspections determine that detention and treatment systems are not operating as intended due to excessive solids accumulations, then it may be appropriate to increase the frequency of system cleanouts for the affected systems.
- **Removal of Legacy Solids:** Stormwater solids trapped within catch basins and drainage conveyances can continue to be a source of pollutants for years, with periodic scour during high flow events. Where legacy solids with high pollutant levels are identified, these should be removed rather than allowing the solids to move through the system toward the outfalls.
- **Repair of Damaged Storm Drain Infrastructure:** Repair and maintenance can minimize potential influx of pollutants from contaminated soils and groundwater or other sources.
- **Technical Assistance to Commercial Dischargers:** In cases where a specific commercial discharger is the source of elevated pollutant loadings, the City may need to work with the business to eliminate legacy pollutant sources, remove accumulated stormwater solids, improve stormwater BMPs, implement improved spill prevention, or to implement improved stormwater treatment measures.
- **Stormwater Infrastructure Improvements:** In some instances, pollutant source control could include evaluation and implementation of practicable stormwater treatment methods. These types of control measures typically require an extended period to evaluate, design and implement.
- **Elimination of Problematic Discharges:** In situations where stormwater quality from a localized source cannot be adequately improved, it may be necessary to eliminate the discharge from that source, for example by requiring that discharger to manage stormwater by alternate methods (e.g., by pretreatment and discharge to the sanitary sewer).

B.5 ANNUAL REPORTS

The City of Victoria shall meet with Transport Canada at least once each year during the period of the Licence Agreement to review the status of its stormwater control program and any activities specifically associated with source tracing and source control for pollutants discharging to Outfalls 626 or 627. In addition to any deliverables provided to Transport Canada as required under Exhibit A, the City shall prepare and provide Transport Canada with a concise **Annual Report** documenting the following:

- Changes City points of contact and other key staff managing stormwater source control and recontamination issues for Outfalls 626 and 627
- Modifications or other changes to outfalls 626 or 627 or the associated stormwater drainage infrastructure
- Operation and maintenance of stormwater treatment systems such as the stormwater treatment unit installed upstream of Outfall 626
- Changes to City stormwater management plan or associated activities affecting the catchments discharging to Outfalls 626 and 627
- Plans or findings of source-tracing investigations conducted within the catchments discharging to Outfalls 626 and 627

- Summary of proposed or completed source control activities conducted to address pollutants discharging to Outfalls 626 and 627
- Recommended actions where appropriate to respond to new conditions or concerns (e.g., potential need to modify the monitoring program or to implement source control or other actions)
- Recommended actions, where appropriate, to respond to contamination if identified in the Rock Bay sediments
- Summary of communications with regulatory agencies, stakeholders, or other third parties relating to Outfalls 626 or 627 or sediment recontamination concerns near these outfalls

B.6 REFERENCES CITED

NovaTec (NovaTec Consultants Inc.), UMA Engineering Ltd., and W20 Inc., 1993. CSO & UR Investigative Assessment Guidelines, Fraser River Action Plan. Prepared for Environment Canada. DOE FRAP 1993-37.

EXHIBIT C: SCHEDULE OF ACTIVITIES

This exhibit summarizes the schedule of activities to be performed by the City of Victoria under the license agreement, including work activities defined in the License Agreement, Exhibit A and Exhibit B. Refer to Exhibits A and B for detailed requirements.

Upon Execution of License Agreement

- SAP Development
 - Submit Draft SAP as described in Section A.1 of Exhibit A
 - Submittal of Final SAP as described in Section A.1 of Exhibit A

Year 1 Activities

- Stormwater Monitoring
 - Implement in-line sampling of stormwater solids (2 locations per outfall) as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Implement TSS monitoring of stormwater discharges (1 location in duplicate per outfall), as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Submit Draft Biennial Monitoring Report as described in Section A.3 of Exhibit A
 - Submit Final Biennial Monitoring Report as described in Section A.3 of Exhibit A
- Source Tracing and Source Control
 - Implement appropriate stormwater management activities as described in Section B.1 of Exhibit B
 - If appropriate based on the City's judgment or if required based on exceedances of triggers listed in Section B.2 of Exhibit B, implement additional source tracing activities and/or source control activities as described in Sections B.3 and B.4 of Exhibit B, respectively.
 - Submittal of Annual report as described in Section B.5 of Exhibit B
- Coordination
 - Coordinate with Transport Canada as required to implement the License Agreement, including participation in meetings with regulatory agencies, First Nations groups and project stakeholders as required

Year 2 Activities

- Source Tracing and Source Control
 - Implement appropriate stormwater management activities as described in Section B.1 of Exhibit B
 - If appropriate based on the City's judgment or if required based on exceedances of triggers listed in Section B.2 of Exhibit B, implement additional source tracing activities and/or source control activities as described in Sections B.3 and B.4 of Exhibit B, respectively.
 - Submittal of Annual report as described in Section B.5 of Exhibit B
- Coordination:
 - Coordinate with Transport Canada as required to implement the License Agreement, including participation in communications with Transport Canada and participation in meetings with regulatory agencies, First Nations groups and/or project stakeholders related to the License Agreement

Year 3 Activities

- **Stormwater Monitoring**
 - Implement in-line sampling of stormwater solids (2 locations per outfall) as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Implement TSS monitoring of stormwater discharges (1 location in duplicate per outfall), as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Submit Draft Biennial Monitoring Report as described in Section A.3 of Exhibit A
 - Submit Final Biennial Monitoring Report as described in Section A.3 of Exhibit A
- **Source Tracing and Source Control**
 - Implement appropriate stormwater management activities as described in Section B.1 of Exhibit B
 - If appropriate based on the City's judgment or if required based on exceedances of triggers listed in Section B.2 of Exhibit B, implement additional source tracing activities and/or source control activities as described in Sections B.3 and B.4 of Exhibit B, respectively.
 - Submittal of Annual report as described in Section B.5 of Exhibit B
- **Coordination:**
 - Coordinate with Transport Canada as required to implement the License Agreement, including participation in communications with Transport Canada and participation in meetings with regulatory agencies, First Nations groups and/or project stakeholders related to the License Agreement
- **Independent Audit**
 - Conduct an independent audit of activities required under the license agreement, and provide the audit report to Transport Canada

Year 4 Activities

- **Source Tracing and Source Control**
 - Implement appropriate stormwater management activities as described in Section B.1 of Exhibit B
 - If appropriate based on the City's judgment or if required based on exceedances of triggers listed in Section B.2 of Exhibit B, implement additional source tracing activities and/or source control activities as described in Sections B.3 and B.4 of Exhibit B, respectively.
 - Submittal of Annual report as described in Section B.5 of Exhibit B
- **Coordination:**
 - Coordinate with Transport Canada as required to implement the License Agreement, including participation in communications with Transport Canada and participation in meetings with regulatory agencies, First Nations groups and/or project stakeholders related to the License Agreement

Year 5 Activities

- Stormwater and Sediment Monitoring
 - Implement in-line sampling of stormwater solids (2 locations per outfall) as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Implement TSS monitoring of stormwater discharges (1 location in duplicate per outfall), as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Implement sediment sampling near stormwater outfalls (4 locations total) as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)
 - Submit Draft Biennial Monitoring Report as described in Section A.3 of Exhibit A
 - Submit Final Biennial Monitoring Report as described in Section A.3 of Exhibit A
- Development of Revised SAP
 - Submit Draft Revised SAP as described in Section A.4 of Exhibit A
 - Submittal of Final Revised SAP as described in Section A.4 of Exhibit A
- Source Tracing and Source Control
 - Implement appropriate stormwater management activities as described in Section B.1 of Exhibit B
 - If appropriate based on the City's judgment or if required based on exceedances of triggers listed in Section B.2 of Exhibit B, implement additional source tracing activities and/or source control activities as described in Sections B.3 and B.4 of Exhibit B, respectively.
 - Submittal of Annual report as described in Section B.5 of Exhibit B
- Coordination:
 - Coordinate with Transport Canada as required to implement the License Agreement, including participation in communications with Transport Canada and participation in meetings with regulatory agencies, First Nations groups and/or project stakeholders related to the License Agreement

Year 6 Activities

- Develop Revised SAP
 - Submit Draft Revised SAP as described in Section A.4 of Exhibit A
 - Submittal of Final Revised SAP as described in Section A.4 of Exhibit A
- Source Tracing and Source Control
 - Implement appropriate stormwater management activities as described in Section B.1 of Exhibit B
 - If appropriate based on the City's judgment or if required based on exceedances of triggers listed in Section B.2 of Exhibit B, implement additional source tracing activities and/or source control activities as described in Sections B.3 and B.4 of Exhibit B, respectively.
 - Submittal of Annual report as described in Section B.5 of Exhibit B
- Coordination:
 - Coordinate with Transport Canada as required to implement the License Agreement, including participation in communications with Transport Canada and participation in meetings with regulatory agencies, First Nations groups and/or project stakeholders related to the License Agreement
- Independent Audit:
 - Conduct an independent audit of activities required under the license agreement, and provide the audit report to Transport Canada

Year 7-12 Activities:

Same as Years 1-6, except conduct sampling consistent with any amendments included in the Final Revised SAP

Minimum monitoring requirements for stormwater and sediments::

- Minimum requirements for stormwater monitoring shall include in-line sampling of stormwater solids (2 locations per outfall), and stormwater total suspended solids (TSS) monitoring of stormwater discharges (1 location in duplicate per outfall) every other year as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP).
- Minimum requirements for sediment sampling shall include testing of 2 locations in the vicinity of each outfall (4 locations total) as described in Table A-1 of Exhibit A (including any amendments specified in the Final SAP)

Minimum source tracing and source control activities:

- Minimum source tracing and source control activities to be implemented by the City are described in Exhibit B, including 1) implementation of appropriate stormwater management activities as described in Section B.1, 2) implementation of additional source tracing activities and/or source control activities as described in Sections B.3 and B.4, respectively, and 3) submittal of an Annual report as described in Section B.5