Phase II Environmental Site Assessment – Report

SITE: 1327 Beach Drive, Oak Bay, BC

Submitted to:
The Corporation of the District of Oak Bay
February 10, 2020

Report by:
NEXT ENVIRONMENTAL INC.
215 – 2550 Boundary Road
Burnaby, BC V5M 3Z3 Canada
Ph: 604.419.3800
Fax: 604.419.3801
www.nextenvironmental.com

Investigator
Luca Patillo, Dipl.T
Environmental Specialist

Reviewer
Aio Haberli, M.Sc., P.Chem.
Manager, Preliminary Site Investigations

Compliance Statement

This report was completed general accordance with Canadian Standard Association ("CSA") Standard Z769-00 – Phase II Environmental Site Assessment (R2013). The staff at NEXT has over 100 years of combined experience in environmental investigation and remediation of contaminated sites. NEXT has completed over 7,500 environmental studies including Stage 1/Phase I and Stage 2/Phase II Preliminary Site Investigations or Environmental Site Assessments, Detailed Site Investigations, Remediation Plans, Remediations, Risk Assessments, Confirmatory Sampling and Monitoring Reports. The reviewer has participated in, coordinated and/or reviewed all types of environmental studies. The staff work under the direct supervision of the senior reviewer, and has experience in on-site evaluations and investigations. Both the undersigned field staff and reviewer were directly involved in this project. Report does not constitute warranty. The assessment and conclusions in this report are based on the interpretation of information collected during investigations and/or from relevant knowledgeable parties/resources. The accuracy of the information available to or presented to NEXT cannot be warranted and/or is the responsibility of the issuers. NEXT does not therefore, warrant the information contained in this report. The responsibility of NEXT is to express an opinion on the information as obtained/presented regarding the environmental status of the Site, as at the date of the report. Services considered confidential and cannot be relied on by third parties. The contents of this report are confidential and are intended for the exclusive use of the Client, unless otherwise expressly permitted by NEXT. NEXT accepts no responsibility for any damages suffered by any third party as a result of decisions made or actions taken based on this report. Any use of the report or reliance on or decision made based on its contents by any third party is at the risk of said party. NEXT is not responsible for any representations made by the Client to a third party based on the contents of this report. The Client assumes full responsibility for damages sustained by any third party arising from representations made by the Client to a third party based on the contents of this report.

PHASE II ENVIRONMENTAL SITE ASSESSMENT

1327 Beach Drive, Oak Bay, BC

for

The Corporation of the District of Oak Bay.

Date of Report Validity:

February 10, 2020

This report summarizes the results of a Phase II Environmental Site Assessment ("Phase II") conducted by Next Environmental Inc. ("NEXT"). The objective of the Phase II is to determine whether contamination associated with the investigated APECs is evident at the Site by comparison to applicable standards. NEXT has followed generally accepted consulting procedures in the completion of this work, which conforms to the requirements of the Canadian Standard Association ("CSA") Standard Z769-00 – Phase II Environmental Site Assessment (R2013). Please note that this summary should be read in conjunction with the entire report.

Contamination Identified	**No**
Further Investigation Recommended	**No**

Contents

Attachments

List of Figures

List of Tables

List of Appendices

Part 1 – Introduction	
Purpose	Next Environmental Inc. ("NEXT") was engaged by The Corporation of the District of Oak Bay ("Client") to conduct a Phase II Environmental Site Assessment ("Phase II") for a property located at 1327 Beach Drive, Oak Bay, BC (herein referred to as the "Site"). This report has been prepared in support of upcoming lease negotiations. Authorization to proceed with this evaluation was provided by Ms. Signe Bagh, on January 20th, 2020. Please refer to the Appendices for the Methodology, List of Acronyms, and other pertinent information provided by others.
Site Civic Address(es)	1327 Beach Drive, Oak Bay, BC The Site location and surrounding land use is shown in **Figure 1**, respectively.
Site Legal Address(es)	Block A-E, Section 23, Victoria District, Plan 368; with respective PIDs: -009-141-111; -009-141-138; -009-141-146; -009-141-154; -018-502-938; and -018-502-946
Current Site Configuration	The 2019 Phase I ESA by North West Environmental Group Ltd. ("NWest"), considered "the Site" to include portions of the marina located over Oak Bay waters. This definition of the Site did not follow legal lot lines. Based on a review of the land titles, NEXT refined the boundary of the Site to follow legal lot lines and include only areas owned by the District. The Crown land including the water lots) which were not considered to be part of the Site. Please see Figure 1 for the Site boundary. The Site is irregular in shape and comprised of four separate lots. The eastern portion of the Site consists of paved areas for parking and small landscaped areas and walkways. The western portion of the Site contains the Oak Bay Marina, gift shop, and restaurant with a small boat repair operation.
Coordinates	48° 25' 26.4'' N and 123° 18' 08.4'' W
Zoning	CS2 – Marine Commercial Use by the District of Oak Bay
Current Operations	No change in land was observed since the December 2019 Phase I completed by North West Environmental Group Ltd. ("NWest") The following businesses are currently operating on the Site: • Oak Bay Marina; • Marina Dockside Eatery; and • Marina Restaurant.
Future Land Use	There are currently no re-development plans for the Site and the current operations will reportedly continue. The current setting is therefore used to determine the applicable CSR standards for the Site. For details and rationale on which CSR standards are applicable for this Phase II, please refer to **Part 4 – Applicable Regulatory Standards** and Appendix B, respectively.

Part 2 – Site Investigation Methodology	
Previous Report(s) Summary	The following report listed was provided by Ms. Signe Bagh for review. NEXT relied on the background information provided in the report, however, we did not rely on all of its conclusions. ***"Phase I Environmental Site Assessment, 1327 Beach Drive, Oak Bay, BC"*, for The Corporation of the District of Oak Bay., prepared by North West Environmental Group Ltd. ("NWest"), dated December 31, 2019.** The following operations were identified in the aforementioned report as APECs. NEXT agrees that these warranted further investigation based on the following: **On-Site APECs** • **APEC 1**: **Decommissioned Heating Oil Tank** o A fill cap labelled "heating oil" was identified adjacent to the southeast of the marina gift shop. The report did not state when this tank was decommissioned. Due to the presence of the fill cap, and the detection of the UST during the utility locate, it appears that the UST was likely decommissioned in place. o In the absence of analytical data it cannot be ruled out that the tank may have corroded/perforated and potentially leaked its contents into the subsurface prior to the tank decommissioning. • **APEC 2**: Gasoline and Diesel Fuel USTs o A 10,000L gasoline and a 25,000L diesel fuel UST was identified on the southwestern portion of the Site. At the time of report issuance the condition, age, and service records of these tanks was unknown and not included in the report. o In the absence of analytical data it cannot be ruled out that the tanks may have corroded/perforated and potentially leaked their contents into the subsurface. The following operations were also identified as APECs in the aforementioned report. However, based on the rational provided below, it was deemed that these operations did not warrant further investigation. As such, NEXT is referring to these as **Items** in the remainder of the report. **On-Site Item** • **Item A: Boat Repair Activities** o The on-Site boat repair shop is located in a building on stilts over the water on the northern side of the marina. The Phase I identified a floor drain which discharged directly into the ocean below. Note, the CSR regulates soil, groundwater, sediment and vapours. Potential drip leaks directly into the ocean are not likely to affect any of these media. o Additionally, no other in-ground structures were identified, and all flooring was paved with limited staining or cracks. o Therefore, this operation was not considered to be an APEC. It is deemed to be an Item that does not require further investigation from a CSR perspective. **Off-Site Item** • **Item B: Former Marine Way Infrastructure in Winch Shed**

<table>
<tr><td></td><td>

During the Site reconnaissance NEXT did not identify any staining, odorous soils, or leaks surrounding the marine way infrastructure. Field screening from a sample taken from the base of the marine way infrastructure did not indicate any olfactory/visual indications of potential contamination, and the RKI Eagle for headspace readings indicated 0ppm.
According to Mr. Jeff McKay, the Director of Operations & Asset Management at the Oak Bay Marine Group, the winch did not operate by means of hydraulic oils. Additionally, the whole winch system was located over a thick slab of concrete further reducing the potential of contamination resulting from this system.
Therefore, this operation was not considered an APEC. It is deemed to be an Item that does not require further investigation from a CSR perspective. Upon review of the land titles, this winch was identified to be located on crown land and therefore considered to be situated off-Site.

This Phase II is designed to investigate APEC 1 and APEC 2 identified in the Phase I.
</td></tr>
<tr><td>Investigation Locations</td><td>
The on-Site APECs and their respective PCOCs and investigation locations are summarised in the table below (see Appendix I for detailed PCOC list).

On-Site
<table>
<tr><th>APECs</th><th>Primary PCOCs</th><th>Investigation Locations</th></tr>
<tr><td>APEC 1: Decommissioned Heating Oil Tank</td><td>LEPH, HEPH, PAHs, VOCs</td><td>Soil: BH101, BH102
Groundwater: BH101, BH102</td></tr>
<tr><td>APEC 2: Gasoline and Diesel Fuel USTs</td><td>LEPH, HEPH, PAHs, VOCs</td><td>Groundwater: MW01, MW02</td></tr>
</table>

*Although NWest identified metals as a PCOC for APEC 1 & 2, NEXT considers these to be Secondary PCOC (see Appendix I). Metals are not analyzed unless significant hydrocarbon contamination was identified. Additionally, in the absence of soil or groundwater contamination, vapour data was not collected as part of this Phase II.
</td></tr>
<tr><td>Sampling Plan</td><td>
The purpose of the chosen investigation locations was to assess the potential presence of PCOCs in soil and groundwater associated with APECs 1 and 2. The locations of on-Site boreholes and monitoring wells are shown on Figure 2. The following was taken into account when determining the optimal drilling locations:

On-Site
APEC 1: Decommissioned Heating Oil UST

This is considered a point source. NEXT investigated two locations for soil and groundwater (BH101, & BH102) immediately southwest and northeast of the decommissioned UST. The location of the UST was confirmed by Geoscan Subsurface surveys using ground penetrating radar during the utility locate;
Field screening using a RKI Eagle for headspace readings were all 0ppm and field observations did not indicate the presence of odorous or stained soils. In the absence of clear indications of a worst case sample based on field screening observations, the soil samples collected in the non-native sand layer in BH101 & BH102, at ~1.2 m below surface grade, were submitted for lab analysis of applicable PCOCs. These samples were selected for analysis because potential contaminants associated with APEC 1 would likely have entered into the subsurface via leakage and perforation from the tank, which would have likely been around similar depth. Additionally, LNAPL associated with heating oil

</td></tr>
</table>

	constituents would float, and the depth to groundwater was at approximately this depth. As such, contaminants, if any, would likely be found at this depth; and • All boreholes were installed with groundwater monitoring wells and screens were installed at a depth to intersect the water table (determined based on field observations during drilling) in order to assess for the potential presence of LNPAL. **Off-Site** **APEC 2**: Gasoline and Diesel Fuel USTs • During the Site visit NEXT identified two existing observation wells (**MW01, MW02**) located directly adjacent to the gasoline and diesel fuel USTs. An interview with an employee of Petro Kleen, the company charged with servicing these USTs, identified these tanks were vaulted with concrete surrounding the entirety of both tanks and there had been no reports of corrosion or leakage from the tanks. Therefore, groundwater samples from these locations were deemed sufficient to identify if leakage or spillage had occurred. As such, soil samples were not collected from this location; and • Both observation wells were found to have been installed to intersect groundwater to assess worst case concentrations of PCOCs with lower density than water (hydrocarbons and LNAPL).

Part 3 – Scope of Work	
Scope of Work	• Reviewing the previous report completed for the Site; • Completing a Site-specific Health and Safety Plan ("HASP"); • Submitting a BC OneCall to facilitate utility locates; • Subcontracting GeoScan Subsurface Surveys Inc. ("Geoscan") as the professional utility locator; • Subcontracting GFL Environmental ("GFL") as the hydrovac contractor; • Subcontracting Terratech Drilling ("Terratech")as the drilling contractor; • Drilling 2 boreholes using a solid stem drilling technique; • Conducting field screening and recording soil conditions; • Installing 2 groundwater monitoring wells; • Collecting soil, and groundwater for the analysis of the identified PCOCs; • Submitting select soil, and groundwater (including an appropriate number of duplicates) to ALS Environmental ("ALS"),the project laboratory, for analysis of PCOCs; • Collecting drill cuttings, monitoring well purge water, and sampling water into drums. Subcontracting Joma Environmental ("Joma") to dispose of soils and water at a certified facility; • Use a measuring tape to survey the locations of the investigation locations; • Tabulating data to compare contaminant concentrations to the applicable CSR standards; and, • Preparing this report, including an interpretation of the results of the investigation and recommendations for further investigation, if required.

Part 4 – Applicable Regulatory Standards			
Please see **Appendix B** for rationale used to determine the applicability of CSR standards.			
Matrix	**Standard**	**Site-Specific Factor**	**Applicable?**
Soil	CSR Schedule 3.1 - Part 1 (Matrix Numerical Soil Standards) Commercial (CL)	Human Health Protection	
		• Intake of Contaminated Soil	Yes
		• Groundwater Used for Drinking Water	Yes
		Environmental Protection	
		• Toxicity to soil invertebrates and plants	Yes
		• Livestock ingesting soil and fodder	No
		• Major microbial functional impairment	No
		• Groundwater flow to surface water used by aquatic life – freshwater	No
		• Groundwater flow to surface water used by aquatic life – marine	Yes
		• Groundwater used for livestock watering	No
		• Groundwater used for irrigation watering	No
	CSR Schedule 3.1 - Part 2 & 3 (Generic Numerical Soil Standards) Commercial (CL)	Protection of Human Health	Yes
		Protection of Ecological Health	Yes
Groundwater	CSR Schedule 3.2 (Generic Numerical Water Standards)	Aquatic Life (AW) – freshwater	No
		Aquatic Life (AW) – marine	Yes
		Drinking Water (DW) – excluding Fe, Mn	Yes
		Drinking Water (DW) – Fe, Mn	No
		Irrigation Water (IW)	No
		Livestock Water (LW)	No
	CSR – Protocol 7	EPH_{W10-19} & VH_{W6-10}	Yes

Part 5 – Quality Assurance / Quality Control	
The QA/QC methodology and RPD tables are shown in **Appendix C**. Based on the below, the collected data is considered to be representative of Site conditions.	
Investigation and Field	The Investigation and Field QA/QC procedures for as described in the Appendix were completed and no significant deviations were identified.
Data processing and reporting	**Soil** The following sample-duplicate pair was collected for soil: • BH101-03 & BH101-53 RPD values for all substances were either not calculated (due to the analytical results being below the laboratory detection limits), or were not considered (due to the analytical results being less than five times the laboratory detection limit), indicating that there wasn't any significant variability in the two data sets. It was found that all DQO targets are met and that the data can be relied upon. **Groundwater** The following sample-duplicate pair was collected for groundwater: • BH101 & BH151 RPD values for all substances were either not calculated (due to the analytical results being below the laboratory detection limits), or were not considered (due to the analytical results being less than five times the laboratory detection limit), indicating that there wasn't any significant variability in the two data sets. It was found that all DQO targets are met and that the data can be relied upon.
Laboratory	The Laboratory QA/QC procedures for as described in the Appendix were completed and no significant deviations were identified.

Part 6 –Findings	
For **APEC 1** NEXT advanced two boreholes on the Site, both installed as groundwater monitoring wells. All soil and groundwater analytical results were either below the laboratory detection limits, or significantly below the applicable standards. For **APEC 2** NEXT sampled two existing observation wells located within the footprint of the fuel UST nest. All groundwater analytical results were either below the laboratory detection limits, or significantly below the applicable standards. As such, no soil or groundwater contamination was identified on-Site related to these APECs. See **Figures** and **Tables** for results, **Appendix E** for Borehole logs, and **Appendix G** for Laboratory Certificates.	
On-Site	

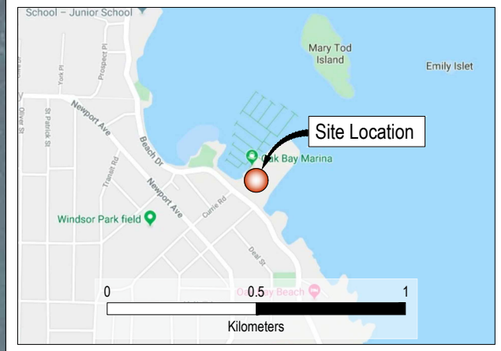
APECs / AECs	ICOCs	
	Soil	Groundwater
APEC 1: Decommissioned Heating Oil Tank	None	None
APEC 2: Gasoline and Diesel Fuel USTs	None	None

Part 7 – Conclusion & Recommendation
Soil, and groundwater analytical results were all below the applicable CSR standards. Because no contamination was identified on the Site, no further work is warranted.

Figures

Next Environmental Inc.

Investigation - Remediation - Risk Assessment



LEGEND

- Site Boundary

APECS:

- 1 — APEC 1: Decommissioned Heating Oil UST
  PCOCs: Hydrocarbons, VOCs, PAHs
- 2 — APEC 2: Gasoline and Diesel Fuel UST
  PCOCs: Hydrocarbons, VOCs, PAHs

Items (Low Risk):

- A — Boat Repair Activities
- B — Former Marine Way Infrastructure

0 60m

1:1500

IMAGE SOURCES:

- Inset Map: Google Maps
- Aerial Image: District of Oak Bay Municipal GIS (2019)

NOTE:
All locations are approximate unless otherwise noted.

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.

Client: The Corporation of the District of Oak Bay

Project: Phase II Environmental Site Assessment

1327 Beach Drive, Oak Bay, BC

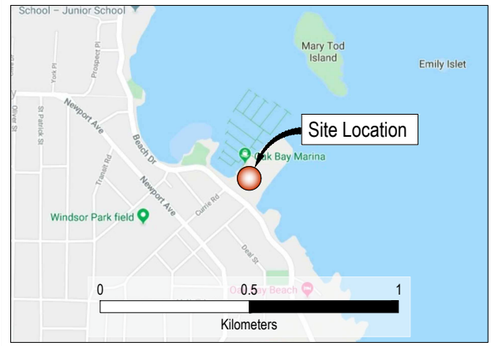
Consultant:	Drawn by:	Checked by:	Project No:
LP	JL	AH	THE330101
	Drawn date: February 10, 2020	Checked date: February 10, 2020	

General Site Location

DWG: THE330101-001.dwg

Figure: 01

Next Environmental Inc.
Investigation - Remediation - Risk Assessment



LEGEND

- Site Boundary
- Groundwater Monitoring Well by NEXT
- Groundwater Monitoring Well by Others

0 20m
1:500

IMAGE SOURCES:
- Inset Map: Google Maps
- Aerial Image: District of Oak Bay Municipal GIS (2019)

NOTE:
All locations are approximate unless otherwise noted.

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.

Client: The Corporation of the District of Oak Bay

Project: Phase II Environmental Site Assessment

1327 Beach Drive, Oak Bay, BC

Consultant:	Drawn by:	Checked by:	Project No:
LP	JL	AH	THE330101
	Drawn date: February 10, 2020	Checked date: February 10, 2020	

Site Plan with Investigation Locations

DWG: THE330101-002.dwg

Figure: 02

Location ID	BH101		BH102
Sample ID	BH101-03	BH101-53	BH102-03
Sample Date	1/29/2020		1/29/2020
Sample Depth (m)	1.2-1.4		1.2-1.4
Soil Type	SAND	SAND	SAND
Duplicate		Y	
Lab Report	VA20A1220	VA20A1220	VA20A1220

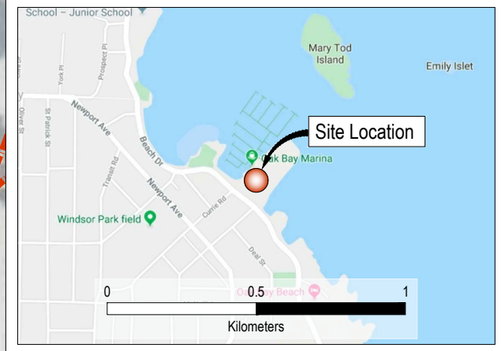
ChemName	Units	BC CSR Schedule 3.1 Part 1 CL - Intake of contaminated soil	BC CSR Schedule 3.1 Part 1 CL - GW used for drinking water	BC CSR Schedule 3.1 Part 1 CL - Toxicity to soil invertebrates and plants	BC CSR Schedule 3.1 Part 1 CL - GW flow to SW used by aquatic life (marine)	BC CSR Schedule 3.1 Part 2 CL - Human Health	BC CSR Schedule 3.1 Part 3 CL - Ecological Health			
BTEXS	µg/g	*	*	*	*	*	*	<	<	<
VOCs	µg/g	*	*	*	*	*	*	<	<	<
Volatile Hydrocarbons	µg/g	*	*	*	*	*	*	<	<	<
Extractable Hydrocarbons	µg/g	*	*	*	*	*	*	<	<	<
PAH	µg/g	*	*	*	*	*	*	<	<	<

NOTES:

BOLD	Result exceeds applicable BC CSR standard.
BOLD	Result exceeded applicable BC CSR standard but was refuted. Refer to text for further information.
BOLD	Result exceeded applicable BC CSR standard but was below Regional Background Concentration.
<BOLD	Detection limit exceeds applicable BC CSR standard.
<S	Result below applicable BC CSR standard.
<	Result below laboratory detection limit.
*	Contaminant group - see results tables for individual analytes and applicable standards.
-	Not analyzed.

GREEN	All reported analytical results below the laboratory detection limit.
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard.
RED	At least one detectable analytical result above applicable BC CSR standard.

Next Environmental Inc.
Investigation - Remediation - Risk Assessment



LEGEND

- Site Boundary
- Groundwater Monitoring Well by NEXT
- Groundwater Monitoring Well by Others

0 20m
1:500

IMAGE SOURCES:
- Inset Map: Google Maps
- Aerial Image: District of Oak Bay Municipal GIS (2019)

NOTE:
All locations are approximate unless otherwise noted.

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.

Client: The Corporation of the District of Oak Bay

Project: Phase II Environmental Site Assessment

1327 Beach Drive, Oak Bay, BC

Consultant	Drawn by	Checked by	Project No.
LP	JL	AH	THE330101
	Drawn date: February 10, 2020	Checked date: February 10, 2020	

Soil Analytical Results

DWG: THE330101-003.dwg

Figure: 03

Location ID	BH101		BH102	MW01	MW02
Sample ID	BH101	BH151	BH102	MW01	MW02
Sample Date	1/31/2020		1/31/2020	1/31/2020	1/31/2020
Sample Depth (m)	0.45-1.5	0.45-1.5	0.4-1.5	0-3.2	0-3.1
Duplicate		Y			
Lab Report	VA20A1230	VA20A1230	VA20A1230	VA20A1230	VA20A1230

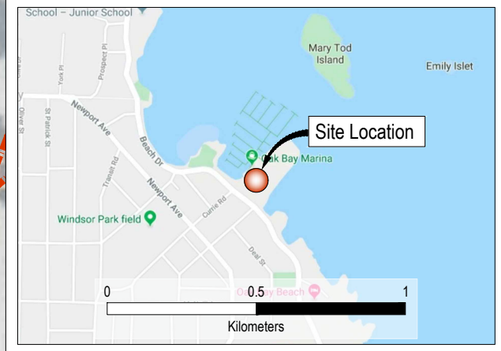
ChemName	Units	BC CSR Schedule 3.2 - Drinking Water (DW)	BC CSR Schedule 3.2 - Aquatic Life (Marine and Estuarine) (AWm)					
BTEXS	µg/L	*	*	<	<	<	<	<
VOCs	µg/L	*	*	<	<	<	<	<
Volatile Hydrocarbons	µg/L	*	*	<	<	<	<	<
Extractable Hydrocarbons	µg/L	*	*	<	<	<	<	<
PAH	µg/L	*	*	<S	<S	<S	<	<

NOTES:

BOLD	Result exceeds applicable BC CSR standard.
BOLD	Result exceeded applicable BC CSR standard but was refuted. Refer to text for further information.
BOLD	Result exceeded applicable BC CSR standard but was below Regional Background Concentration.
<BOLD	Detection limit exceeds applicable BC CSR standard.
<S	Result below applicable BC CSR standard.
<	Result below laboratory detection limit.
*	Contaminant group - see results tables for individual analytes and applicable standards.
-	Not analyzed.

GREEN	All reported analytical results below the laboratory detection limit.
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard.
RED	At least one detectable analytical result above applicable BC CSR standard.

Next Environmental Inc.
Investigation - Remediation - Risk Assessment



LEGEND

- Site Boundary
- Groundwater Monitoring Well by NEXT
- Groundwater Monitoring Well by Others

0 20m
1:500

IMAGE SOURCES:
- Inset Map: Google Maps
- Aerial Image: District of Oak Bay Municipal GIS (2019)

NOTE:
All locations are approximate unless otherwise noted.

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.

Client: The Corporation of the District of Oak Bay

Project: Phase II Environmental Site Assessment

1327 Beach Drive, Oak Bay, BC

Consultant	Drawn by	Checked by	Project No
LP	JL	AH	THE330101
	Drawn date: February 10, 2020	Checked date: February 10, 2020	

Groundwater Analytical Results

DWG: THE330101-004.dwg

Figure: 04

Tables

Groundwater Analytical Results
BC CSR Schedule 3.2 Drinking Water & Aquatic Life Marine Standards

Location ID	BH101		BH102	MW01	MW02
Sample ID	BH101	BH151	BH102	MW01	MW02
Sample Date	1/31/2020		1/31/2020	1/31/2020	1/31/2020
Sample Depth (m)	0.45-1.5	0.45-1.5	0.4-1.5	0-3.2	0-3.1
Duplicate		Y			
Lab Report	VA20A1230	VA20A1230	VA20A1230	VA20A1230	VA20A1230

ChemName	Units	EQL	BC CSR Schedule 3.2 - Drinking Water (DW)	BC CSR Schedule 3.2 - Aquatic Life (Marine and Estuarine) (AWm)					
BTEXS									
Benzene	µg/L	0.5	**5**	**1000**	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	**140**	**2500**	<0.5	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	0.5	**800**	**720**	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	**60**	**2000**	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, Total	µg/L	0.75	**90**	**300**	<0.75	<0.75	<0.75	<0.75	<0.75
VOCs									
Butadiene, 1,3-	µg/L	0.2	**1**		-	-	-	<0.2	<0.2
Dibromoethane, 1,2-	µg/L	0.1	**0.5**		-	-	-	<0.1	<0.1
Dichloroethane, 1,2-	µg/L	1	**5**	**1000**	-	-	-	<1	<1
Isopropylbenzene	µg/L	1	**400**		-	-	-	<1	<1
Methyl tert-butyl ether [MTBE]	µg/L	0.5	**95**	**4400**	-	-	-	<0.5	<0.5
Nonane, n-	µg/L	1	**1**		<1	<1	<1	<1	<1
Trimethylbenzene, 1,3,5-	µg/L	1	**40**		<1	<1	<1	<1	<1
Volatile Hydrocarbons									
VHw6-10	µg/L	100	**15000**	**15000**	<100	<100	<100	<100	<100
VPHw	µg/L	100		**1500**	<100	<100	<100	<100	<100
Extractable Hydrocarbons									
EPHw10-19	µg/L	250	**5000**	**5000**	<250	<250	<250	<250	<250
LEPHw	µg/L	250		**500**	<250	<250	<250	<250	<250
PAH									
Acenaphthene	µg/L	0.01	**250**	**60**	<0.01	<0.01	<0.01	<0.01	<0.01
Acridine	µg/L	0.01		**0.5**	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	µg/L	0.01	**1000**	**1**	<0.01	<0.01	<0.01	<0.01	<0.01
Benz(a)anthracene	µg/L	0.01	**0.07**	**1**	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(a)pyrene	µg/L	0.005	**0.01**	**0.1**	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(b+j)fluoranthenes	µg/L	0.01	**0.07**		<0.01	<0.01	<0.01	<0.01	<0.01
Chrysene	µg/L	0.01	**7**	**1**	<0.01	<0.01	<0.01	<0.01	<0.01
Dibenz(a,h)anthracene	µg/L	0.005	**0.01**		<0.005	<0.005	<0.005	<0.005	<0.005
Fluoranthene	µg/L	0.01	**150**	**2**	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/L	0.01	**150**	**120**	<0.01	<0.01	<0.01	<0.01	<0.01
Methylnaphthalene, 1-	µg/L	0.01	**5.5**		0.034	0.032	0.021	<0.01	<0.01
Methylnaphthalene, 2-	µg/L	0.01	**15**		0.046	0.044	0.033	<0.02	<0.02
Naphthalene	µg/L	0.05	**80**	**10**	0.089	0.084	<0.05	<0.05	<0.05
Phenanthrene	µg/L	0.02		**3**	<0.02	<0.02	<0.02	<0.02	<0.02
Pyrene	µg/L	0.01	**100**	**0.2**	<0.01	<0.01	<0.01	<0.01	<0.01
Quinoline	µg/L	0.05	**0.05**	**34**	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES:

BOLD	Result exceeds applicable BC CSR standard.
BOLD	Result exceeded applicable BC CSR standard but was refuted. Refer to text for further information.
<BOLD	Detection limit exceeds applicable BC CSR standard.
<	Result is below laboratory detection limit.
-	Not analyzed.

Soil Analytical Results
BC CSR Schedule 3.1 Commercial Standards

Location ID	BH101		BH102
Sample ID	BH101-03	BH101-53	BH102-03
Sample Date	1/29/2020		1/29/2020
Sample Depth (m)	1.2-1.4		1.2-1.4
Soil Type	SAND	SAND	SAND
Duplicate		Y	
Lab Report	VA20A1220	VA20A1220	VA20A1220

ChemName	Units	EQL	BC CSR Schedule 3.1 Part 1 CL - Intake of contaminated soil	BC CSR Schedule 3.1 Part 1 CL - GW used for drinking water	BC CSR Schedule 3.1 Part 1 CL - Toxicity to soil invertebrates and plants	BC CSR Schedule 3.1 Part 1 CL - GW flow to SW used by aquatic life (marine)	BC CSR Schedule 3.1 Part 2 CL - Human Health	BC CSR Schedule 3.1 Part 3 CL - Ecological Health			
B(a)P Total Potency Equivalent	µg/g	0.01							<0.01	<0.01	<0.01
TPH											
IACR (CCME)	mg/kg	0.11							<0.11	<0.11	<0.11
BTEXS											
Benzene	µg/g	0.005	**1000**	**0.035**	**250**	**6.5**			<0.005	<0.005	<0.005
Ethylbenzene	µg/g	0.015	**25000**	**15**	**650**	**200**			<0.015	<0.015	<0.015
Styrene	µg/g	0.05					**50000**	**50**	<0.05	<0.05	<0.05
Toluene	µg/g	0.05	**20000**	**6**	**450**	**200**			<0.05	<0.05	<0.05
Xylenes, Total	µg/g	0.075	**50000**	**6.5**	**600**	**20**			<0.075	<0.075	<0.075
VOCs											
Nonane, n-	µg/g	0.05					**70**	**NS**	<0.05	<0.05	<0.05
Propylbenzene, 1-	µg/g	0.05					**25000**	**NS**	<0.05	<0.05	<0.05
Trimethylbenzene, 1,2,4-	µg/g	0.05							<0.05	<0.05	<0.05
Trimethylbenzene, 1,3,5-	µg/g	0.05					**2500**	**NS**	<0.05	<0.05	<0.05
Volatile Hydrocarbons											
VPHs	µg/g	10					**200**	**200**	<10	<10	<10
Extractable Hydrocarbons											
HEPHs	µg/g	200					**5000**	**5000**	<200	<200	<200
LEPHs	µg/g	200					**2000**	**2000**	<200	<200	<200
PAH											
Acenaphthene	µg/g	0.005					**15000**	**NS**	<0.005	<0.005	<0.005
Anthracene	µg/g	0.004	**75000**	**NS**	**30**	**NS**			<0.004	<0.004	<0.004
Benz(a)anthracene	µg/g	0.01					**300**	**10**	<0.01	<0.01	<0.01
Benzo(a)pyrene	µg/g	0.01	**30**	**NS**	**70**	**NS**			<0.01	<0.01	<0.01
Benzo(b+j)fluoranthenes	µg/g	0.01					**300**	**10**	<0.01	<0.01	<0.01
Benzo(k)fluoranthene	µg/g	0.01					**300**	**10**	<0.01	<0.01	<0.01
Chrysene	µg/g	0.01					**4500**	**NS**	<0.01	<0.01	<0.01
Dibenz(a,h)anthracene	µg/g	0.005					**30**	**10**	<0.005	<0.005	<0.005
Fluoranthene	µg/g	0.01	**10000**	**NS**	**200**	**NS**			<0.01	<0.01	<0.01
Fluorene	µg/g	0.01					**9500**	**NS**	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/g	0.01					**300**	**10**	<0.01	<0.01	<0.01
Methylnaphthalene, 1-	µg/g	0.01					**1000**	**NS**	<0.01	<0.01	<0.01
Methylnaphthalene, 2-	µg/g	0.01					**950**	**NS**	<0.01	<0.01	<0.01
Naphthalene	µg/g	0.01	**5000**	**100**	**20**	**75**			<0.01	<0.01	<0.01
PAH TEQ - Calc	µg/g		**30**						<0.009	<0.009	<0.009
Phenanthrene	µg/g	0.01					**10000**	**50**	<0.01	<0.01	<0.01
Pyrene	µg/g	0.01					**7500**	**100**	<0.01	<0.01	<0.01
Quinoline	µg/g	0.01					**10**	**NS**	<0.01	<0.01	<0.01

NOTES:

BOLD	Result exceeds applicable BC CSR standard.
BOLD	Result exceeded applicable BC CSR standard but was refuted. Refer to text for further information.
<BOLD	Detection limit exceeds applicable BC CSR standard.
<	Result is below laboratory detection limit.
-	Not analyzed.

Appendix A
Investigation Methodology

Investigation Methodology

1. In-Situ Soil Sampling

Next Environmental Inc. ("NEXT") developed soil sampling protocols based on the following documents:

- BC Ministry of Environment and Climate Change Strategy, Technical Guidance 1 - Site Characterization and Confirmation Testing, January 2009;
- Canadian Council of Ministers of the Environment, Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume I: Main Report, December 1993;
- Canadian Council of Ministers of the Environment, Subsurface Assessment Handbook for Contaminated Sites, March 1994; and,
- British Columbia Field Sampling Manual (2013 Edition), January 2003.

Prior to commencing any subsurface drilling or excavation work, the following tasks/documents are completed/prepared:

- A Site-specific Health & Safety Plan ("SSHASP"), reviewed and signed by the Project Manager. A copy of the SSHASP is to be kept on-Site at all times. Please refer to NEXT's H&S manual for more details;
- A mandatory Health & Safety orientation for all Site visitors. Visitors must sign in and out when entering/leaving the Site;
- Professional Utility Locate (including a BC One Call Ticket) by an approved subcontractor;
- NEXT field forms;
- NEXT subcontractor tracking forms; and,
- Any necessary permits.

A Professional Utility Locate is completed for the Site to ensure the investigation locations will not interfere with underground and overhead utilities, including, but not limited to water, storm, sanitary, gas, hydro, communication, and fibre optics. Prior to completing the locate, a BC One Call is placed by both NEXT personnel and by the locate subcontractor. BC One Call issues a unique ticket number and contacts their members to request drawings of utilities on the Site and the surrounding area. There are a number of utilities that are not BC One Call members, for instance some municipalities and communications utilities such as Shaw. Utilities that are missing from the BC One Call are contacted by NEXT or the subcontractor to request drawings.

Soil samples are collected using a several methods and tools. The most common types of soil samples NEXT collects are for the following purposes:

I. **In Situ Characterization;**

All soil cuttings and purge water from monitoring wells are collected into drums and disposed of at licensed facilities.

The subsequent sections provide a detailed description of the methodology used for each type of soil sampling.

I. <u>In Situ Characterization</u>

An approved subcontractor is commissioned by NEXT to drill boreholes or do test pits for the purpose of collecting in-situ soil samples. This typically requires a combination of one or more of the following equipment:

- Concrete/asphalt corer;
- Hand drill or Pionjar hammer drill;
- Track-or truck-mounted solid stem or hollow stem auger drill rig;
- Track-or truck-mounted sonic (vibratory) drill rig;
- ODEX drill rig with optional split spoon;
- Water/Mud Rotary;
- Air/Pneumatic Rotary;
- Direct Push Technology (DPT);
- Limited access drilling equipment (such as Geoprobe);
- Backhoe or excavator; and/or,
- Hydro-vacuum truck.

The following soil sampling protocol was adapted for the various in-situ investigation methods. Photos of the retrieved augers or soil cores are be taken for documentation purposes. Field notes are written in a field book and/or on NEXT Borehole Log Forms and include:

- General information:
    - Project number;
    - Project description (PSI, DSI, etc.);
    - Address;
    - NEXT staff;
    - Client name;
    - Name of subcontractor;
    - Drill method; and,
    - Depth to water.

- Description for soil stratigraphy:
    - Soil classification (gravel, sand, silt, clay, etc.) using the Unified Soil Classification System (USCS);
    - Colour;
    - Other contents (peat, woodwaste, scrap metal, etc.);
    - Grain size (coarse, medium, fine);
    - Gradation (well vs poorly sorted) ;
    - Clay or silt compaction (very soft to hard);
    - Sand compaction (very loose to dense); and,
    - Moisture content (dry to saturated).

- Sample information including:
    - Borehole location;
    - Sampling method and type;
    - Unambiguous sample name;
    - Headspace measurement;
    - Depth range of sample below grade; and,
    - Physical, visual, and olfactory observations.

The sampler always wears clean nitrile gloves (or other based on contaminant type), which are changed between successive sample collections. If a sampling trowel is used, it is wiped clean between successive sampling events. The outer surface of the soil column on solid stem augers, split spoons, sonic cores, or excavator buckets is scraped off to remove exterior scrapings and to avoid cross-contamination. A shovel or scoop is used to collect soil samples from the sidewalls of a daylighted hole, which is cleaned between successive sample collections.

Soil samples are collected at regularly spaced intervals (over a maximum span of 0.5m in the top 1m, and a maximum span of 1m at depths below 1m from the surface), at changes in stratigraphy, and where field observations (staining, odour, vapour screening) indicate the potential for soil contamination. Samples from different stratigraphic units, two sides of the saturated and non-saturated zone, or from contaminated and non-contaminated zones are not combined. Collected sample portions are evenly distributed among multiple laboratory provided clean single-use containers, which include glass jars and methanol vials (number and type of container can vary depending on sampling requirements). For the analysis of VOCs, laboratory supplied single-use clean plungers and methanol vials are used. These are designed for VOC extraction within the methanol, and avoid loss of contaminants through volatilization. For analysis of other compounds, each sampling jar is tightly packed and properly sealed with a lid.

A portion of each collected sample is placed in a plastic bag for headspace soil readings. These field screening results are used to select soil samples for laboratory analysis. A sufficient amount of soil is collected to ensure 1/3rd of the bag is filled with the sample. The bag is tied tightly so that the remaining 2/3^{rds} consists of a pocket of air above the sample. After sufficient equilibration time, a portable RKI Eagle combustible gas meter and/ or a MiniRAE 2000 photo-ionization detector is used to collect headspace vapour measurements. The sample bag is pierced by the probe, and the headspace readings from the air pocket is measured.

A sufficient number of duplicate samples is collected and all field QA/QC procedures are followed (see “QA/QC Methodology and RPD Tables” Appendix for further information). All samples are labeled with an unambiguous name and placed into a chilled cooler (<10^{o}C). The samples are sent to the laboratory within the prescribed hold times for the PCOCs. A fully completed Chain of Custody (“CoC”) form accompanies the samples to the laboratory. The sample shipment is labeled with the applicable TDG stickers. Samples collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

Augers are generally pressure-washed between each borehole to prevent cross-contamination. Drill cuttings are typically not used to backfill the borehole. The drill cuttings are stored in on-Site drums that are labeled with the borehole names. Once analytical data is received and the cuttings have been characterized, the drums and contents are disposed of at a certified facility.

2. Groundwater Monitoring Well Installation, Development and Sampling

NEXT developed this groundwater sampling protocol based on the following documents:

- BC Ministry of Environment and Climate Change Strategy, Protocol 21 - Water Use Determination ("P21") - Version 2.0, October 31, 2017, effective date: November 1, 2017;
- BC Ministry of Environment and Climate Change Strategy, Technical Guidance 8 - Groundwater Investigation and Characterization ("TG8") – Version 2, effective date: November 1, 2017;
- Golder Associates Ltd., Technical Guidance for Contaminated Sites - Groundwater Investigation in Site Assessment, 2nd Edition, June 17, 2010;
- Canadian Council of Ministers of the Environment ("CCME"), Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume I: Main Report, December 1993; and,
- British Columbia Field Sampling Manual (2013 Edition), January 2003; and,
- US EPA, Puls and Barcelona, Low-Flow (minimal drawdown) ground-water sampling procedures, April 1996.

Groundwater and surface water investigations may include the following tasks:

I. **Groundwater monitoring well installation;**
II. **Groundwater monitoring well development;**
III. **Groundwater monitoring well sampling; and,**

The subsequent sections provide a detailed description of the methodology for each task.

I. Groundwater Monitoring Well Installation

The objective of installing any groundwater monitoring well is to collect representative groundwater samples. During drilling, water-bearing zones are identified in the subsurface based on several factors including moisture content, geology, and/or known groundwater depth, etc. This assists in determining optimal depths to install monitoring well screens.

Groundwater monitoring wells are installed by a qualified drilling subcontractor. The type and construction of monitoring wells is Site-specific. Conventional groundwater monitoring wells are generally constructed with 51mm (2") diameter, Schedule 40, threaded PVC pipe with 0.25 mm (~0.01") slotted screen (note that PVC pipe may deteriorate in presence of high concentrations of chlorinated hydrocarbons, aromatics, alkyl sulfides or ketones. In that case, a Teflon or stainless steel pipe may be used. The well casing material should be certified, wrapped clean pipes. Otherwise, it needs to be steam cleaned prior to use.), which is placed within the targeted geological unit.

The slotted screen is capped and placed into the borehole. It can rest directly onto sloughed material or on a thin layer of approximately 0.07m (~1/4') of sand. If the borehole extends deeper than the screen depth, bentonite is used to backfill and seal the hole below the screen. The annular space around the screen is filled with 20 to 40 mesh size filter sand. To maintain a separation between the bentonite seal and well screen and to allow the compaction of filter pack and settling of infiltration during well development, the sand pack can be up to 1.5m (~5') and typically 0.15m (~0.5') above and below the well screen. The length of well screen is typically 1.5 m (5') or less, with the total sandpack not exceeding 1.8m. A seal is then installed above the sand pack using chemically unaltered bentonite chips to approximately 0.3m (~1') from grade. Sand is then added above the seal to install a flush mount roadbox or a stick-up well (the PVC is left above the ground surface with a protective casing for security, if needed). The top of the well is sealed with a j-plug. The top and underside of the cover and/or the side of the PVC is labeled with the borehole name.

The maximum saturated screen lengths should not exceed 1.8m (~6') including screen plus filter pack. Longer screens may result in increased sample dilution. Therefore, screens longer than 1.5m (~5') are generally not installed during NEXT investigations. Rationale is provided in instances where screen lengths may be longer due to Site-specific factors. Shorter screens may be installed to ensure that screens do not straddle stratigraphic units. In some instances, when more than one stratigraphic unit needs to be targeted, two or more monitoring wells may be nested in a single borehole. A sufficiently thick bentonite seal (at least 3') is placed between multiple screens in the borehole to seal off the annulus. Monitoring wells for sampling of petroleum hydrocarbons and for targeting LNAPL are typically screened across the water table. Monitoring wells for sampling of solvents and for targeting DNAPL are typically screened at the bottom of a saturated zone or right above a confining layer. The well screen also should be placed at the bottom of a borehole to avoid the borehole becoming a "sediment trap" for DNAPL.

In addition to field notes taken during the drilling investigation, the following groundwater monitoring well construction and installation information is recorded for creating borehole logs:

- Diameter(s) of PVC;
- Depth range of screen and slot size;
- Depth range of the PVC pipe;
- Roadbox construction details or height of stickup; and,
- Types and depth ranges of seal and filter pack.

II. Groundwater Monitoring Well Development

Monitoring well development is typically completed after a waiting period of 24 hours or more following installation, in order to allow for proper hydration and settling of the sealant (bentonite). However, Site specific recharge rates may require a longer wait time. Nitrile gloves are worn during well development and changed between each monitoring well or more often, if deemed necessary. Well development tasks are typically conducted in the following order:

- The depth to the bottom of the well and to the groundwater is measured to calculate the water volume in the well;
- Well development is conducted and considered sufficient if any of the following is achieved:
    - Up to ten well volumes of water was removed;
    - The well has gone dry three times after it was allowed to recharge for a reasonable amount of time between the three development attempts; or,
    - The water is visually clear after at least three well volumes have been removed;
- Field parameters such as pH, TDS, electrical conductivity, temperature, dissolved oxygen, redox potential and/or turbidity may be monitored to assist in determining when a well is properly developed (see section III Groundwater Monitoring Well sampling for more details on stable chemistry); and,
- Groundwater removed from the well is generally stored in on-Site drums that are labeled with the well name. Once analytical data is received and the water has been characterized, the drums and their contents are disposed of at a certified facility.

Depending on the depth and recharge of the well, the following options for well development may be used:

- A Waterra inertial pump consisting of new 5/8" OD x 1/2" ID HDPE tubing and a foot valve. A surge block is used for development in fine soils to assist with removal of fines;
- A down-hole battery powered whale pump (cleaned between monitoring wells) with dedicated PVC tubing for fast recharge or large water volumes; or,
- A 2" Grundfos RediFlo submersible pump, multi-stage whale or bladder pumps, or a dedicated bailer for deep wells (>10m) or minimal water volumes.

NEXT Monitoring Well Development Forms are used to document the following for each well:

- Well ID;
- Project number;
- Address;
- Date;
- NEXT staff;
- Unique sample name; and,
- Groundwater depth before well development.

III. Groundwater Monitoring Well Sampling

Monitoring well sampling is typically conducted after a sufficient waiting period following the well development, in order to allow for equilibration of the well with the surrounding formation. Nitrile gloves are worn during sampling and changed between each monitoring well, or more often if deemed necessary. Well sampling tasks are typically conducted in the following order:

- In some instances, a headspace vapour reading for combustible vapours may be collected from the well head immediately after removing the j-plug;
- The depth to the bottom of the well and to the groundwater is measured to calculate the water volume in the well;
- If Light Non-Aqueous Phase Liquid ("LNAPL") or Dense Non-Aqueous Phase Liquid ("DNAPL") is known or suspected to be present, its thickness in mm is recorded by using a dedicated bailer or interface probe;
- Prior to sample collection, purging of the well is conducted to allow for collection of water samples representative of the formation. Purging is considered sufficient if any of the following is achieved:
    - Stable chemistry has been achieved; or,
    - If stable chemistry readings are not reached after removal of three well volumes, the well is sampled regardless as it is assumed that representative water from the formation has replaced the standing well water; or
    - In wells with very low recharge rates, it may be necessary to collect a sample after the well has gone dry.
- By means of a multi meter (such as a Hanna handheld model or YSI), at least three field parameters (pH, electrical conductivity, and temperature) are monitored to determine whether stable chemistry has been reached. The readings are considered stable if they fall within the following limits for three successive readings within a reasonable timeframe:
    - pH: +/- 0.1 units
    - Electrical conductivity: +/- 3%
    - Temperature: +/- 0.2^{o}C
- Additional field parameters may be recorded on an as-need basis:
    - Dissolved Oxygen: +/- 10%
    - Redox Potential: +/- 10mV
    - TDS: +/- 10%
- When purging is completed, groundwater is sampled into laboratory provided clean single-use sample containers and an appropriate number of duplicate samples are collected. Field preservatives are provided by the lab and added to the sample containers as required;
- Samples for volatile compounds ("VOCs") are typically collected using a bailer and are collected last, following the purging and low-flow sampling process for other PCOCs. VOC samples are typically collected into vials without headspace and sealed with an air-tight teflon lid; and,
- For collection of dissolved metals samples, groundwater is field filtered through an in-line 0.45 µM filter. At least one volume of water (based on the size of the filter ~100mL) should pass through the filter prior to

collecting the sample. Laboratory instructions are followed to meet field preservation requirements.

- There are a number of groundwater sampling methods that are applied depending on the well depth, recharge rates and the PCOCs. All pumps are thoroughly cleaned and rinsed between sampling different wells. Single-use dedicated bailers and tubing are used for each well.
- Bailer or bladder pump:
    - This is the preferred equipment for sampling of volatile compounds ("VOCs") because there is no application of suction pressure. Suction pressure, as is applied during the use of peristaltic pumps, may aerate the sample and cause volatilization of contaminants;
    - Bailers and bladder pumps are suitable for wells with deep water tables (>10m); and,
    - The bailer is typically lowered to the screened interval of the monitoring well to collect the sample. If a bailer is used to assess the presence of LNAPL in wells screened across the water table, only a part of the bailer is submerged to intersect the water table where LNAPL would be expected.
- Low-flow technique with peristaltic pump:
    - This technique is the preferred method for purging wells prior to sampling, and sampling of non-volatile compounds. This is done by using a peristaltic pump with down-well poly tubing. The intake of the tubing is generally placed near the middle of the well screen to reduce disturbance of the water column and keep mobilization of fines to a minimum;
    - Groundwater within the well is purged and sampled at low flow rates (0.1-0.5 L/min). It is generally attempted to have no drawdown of the water column if Site conditions permit. Drawdown may be monitored using a water level tape. If drawdown is not avoidable due to slow recharge, it is attempted to minimize the drawdown by using the lowest pump rate; and,
    - Due to the limited suction strength of peristaltic pumps, this technique is limited to wells with a depth to water of no more than approximately 8m-10m.
- Other submersible pumps:
    - Other pumps such as the Grundfos RediFlo, an electric submersible variable speed stainless steel pump, may be considered as required and appropriate.

A sufficient number of duplicate samples are collected and all field QA/QC procedures are followed (see "QA/QC Methodology and RPD Tables" Appendix for further information). All samples are labeled with an unambiguous name and placed into a chilled cooler (<10^{o}C). The samples are sent to the laboratory within the prescribed hold times for the PCOCs. A fully completed Chain of Custody ("CoC") form accompanies the samples to the laboratory, and the sample shipment is labeled with the applicable TDG stickers. Samples being collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

Appendix B
Regulatory Standards

Regulatory Standards

The numerical standards stipulated in the following documents were used when comparing the analytical data sets:

I. Environmental Management Act ("EMA") - *Contaminated Sites Regulation* ("CSR"), B.C. Reg. 375/96, Deposited December 16, 1996 and effective April 1, 1997; Last amended January 24, 2019 by B.C. Reg. 13/2019.

II. CSR Soil Standards

Based on the Site's current and/or anticipated future primary land use at the surface of the Site, the applicable CSR land use standards were selected from the following: Wildlands Natural ("WL_N"), Wildlands Reverted ("WL_R"), Agricultural ("AL"), Urban Park ("PL"), Residential Low Density ("RL_{LD}"), Residential High Density ("RL_{HD}"), Commercial ("CL") or Industrial ("IL").

There are currently no plans to re-develop the Site. Based on the current land use at grade CL standards currently apply to the Site.

For soils, generic and matrix numerical standards are listed in Schedule 3.1 Parts 1, 2 & 3 of the BC CSR. Matrices exist for various components listed in Schedule 3.1 Part 1 of the CSR, and the applicable numerical standards are dependent upon which Site-specific factors apply to the Site. As a mandatory regulatory requirement, two Site-specific factors apply to all residential, commercial and industrial use Sites: namely "Human Health Protection - Intake of Contaminated Soil" and, "Toxicity to Soil Invertebrates and Plants".

A prevalent concern with contaminated soil is the subsequent impact on the quality of groundwater beneath a site. For this reason, other Site-specific factors may apply and depend on the use of groundwater at the Site and if the flow of groundwater beneath the Site is discharging to aquatic receiving environment. For groundwater, determining the use involves identifying the current and future drinking water ("DW") use, aquatic life water ("AW") use, irrigation water ("IW") use and livestock water ("LW") use.

III. CSR Groundwater Standards

According to *Protocol 21 – Water Use Determination* ("P21") Version 2.0, DW standards apply if the water is currently used for drinking water or has the potential to be used for drinking water in the future. The potential for future drinking water use can be determined by completing investigative work to better understand the aquifer hydraulic conductivity, aquifer yield, natural groundwater quality, and geology above the water-bearing zone. The alternative to conducting additional investigative work is to apply DW standards by default. If it is determined that DW standards apply to Site, then the soil matrix standards for the Site-specific factor "Groundwater used for drinking water" from Schedule 3.1 Part 1, are also applicable standards for Site soil.

Drinking water standards ("DW") apply at the Site until proven otherwise.

According to P21, aquatic life ("AW") water use standards apply to all groundwater located within 500m of an aquatic receiving environment, unless it is demonstrated that the groundwater does not flow to that receiving environment. AW also applies to groundwater located beyond 500 m of an aquatic receiving environment if the groundwater contains substances with concentrations above AW standards and has the potential to migrate within 500ms of the aquatic receiving environment. If the AW standards apply to the groundwater on-Site then the soil matrix standards

for the Site-specific factor "Groundwater flow to surface water" from Schedule 3.1 Part 1, are also applicable standards for Site soils.

The closest waterbody, Oak Bay, is located adjacent to the north of the Site. AW-m therefore applies to the Site. AW-f does not apply to the Site, as there is no fresh aquatic environments within 500m of the Site.

According to P21, irrigation ("IW") and livestock ("LW") water use applies where groundwater or surface water at or nearby a site is currently used for irrigation or livestock watering. P21 defines nearby wells or surface water intakes for irrigation or livestock watering as those wells/intakes located within a radial distance of 500 metres from the Site boundary. Where the groundwater contamination source extends beyond the Site boundary, the radial distance is extended to 500 metres from the groundwater contamination source. If the groundwater flow direction has been reliably determined, the radial distance may be limited to within 100 metres up-gradient and 500 metres cross- or down-gradient from the Site boundary or outer extent of the groundwater contamination source where it extends beyond the Site boundary. If the IW and/or LW standards apply to the groundwater on-Site then the soil matrix standards for the Site-specific factors "Groundwater used for livestock watering" and/or "Groundwater used for irrigation", respectively, from Schedule 3.1 Part 1, are also applicable standards for Site soils.

No surface water intakes were identified within 500m of the Site. One water wells were identified within 500m of the Site, however, the Site is in an urban area and no agricultural activities such as farms, fields or pastures were identified within 500m of the Site. Therefore, IW and LW water uses do not apply.

Under Schedule 3.2 of the CSR, groundwater is considered contaminated wherever Non-Aqueous Phase Liquids ("NAPL") are present. The presence and mobility of NAPL is defined in *Protocol 16 – Determining the Presence and Mobility of Non-Aqueous Phase Liquids and Odorous Substances.* In addition, for petroleum hydrocarbons, according to the Protocol for Regulation of Petroleum Hydrocarbons in Water under Special Waste and Contaminates Sites Regulations ("CSR - Protocol 7"), standards for VH_{W6-10} and EH_{W10-19} shown in Table 1 of Protocol 7 apply to all sites, irrespective of water use.

No NAPL was identified on the Site.

On January 25, 2013, the Ministry released a Stage 8 CSR Amendment. It addressed the fact that iron and manganese groundwater concentrations are often temporarily elevated in the presence of petroleum hydrocarbon contamination. The amendment also recognized that iron and manganese are often naturally occurring metals in the groundwater and exempted the standards with exception of specific Schedule 2 activities. Iron and/or manganese water use standards apply to the Schedule 2 activities listed in the table below.

Iron numerical water standards	Manganese numerical water standards
A6. ink or dye manufacturing or wholesale bulk storage A7. leather or hides tanning A8. paint, lacquer or varnish manufacturing, formulation, recycling or wholesale bulk storage A11. textile dying C1. foundries or scrap metal smelting C2. galvanizing C3. metal plating or finishing C4. metal salvage operations C6. Welding or machine shops (repair or fabrication) D2. coal coke manufacture, wholesale bulk storage or shipping D3. coal or lignite mining, milling, wholesale bulk storage or shipping	B1. battery (lead acid or other) manufacturing or wholesale bulk storage C1. foundries or scrap metal smelting C3. metal plating or finishing C4. metal salvage operations D2. coal coke manufacture, wholesale bulk storage or shipping D3. coal or lignite mining, milling, wholesale bulk storage or shipping D5. nonferrous metal concentrate wholesale bulk storage or shipping D6. Nonferrous metal mining or milling E4. coal gasification (manufactured gas production) H3. battery (lead acid or other) recycling

D5. nonferrous metal concentrate wholesale bulk storage or shipping D6. nonferrous metal mining or milling E4. coal gasification (manufactured gas production) H14. mine tailings waste disposal Additionally, water standards for iron apply to sites used for the following additional Schedule 2 activities, but only if they occurred in conjunction with one or more of the Schedule 2 activities listed above H11. industrial waste lagoons or impoundments H20. hazardous waste storage, treatment or disposal	H14. mine tailings waste disposal

Iron and manganese water use standards do not apply to the Site as none of the above listed Schedule 2 operations currently operate, or have historically operated, on the Site.

Appendix C
QA/QC Methodology and RPD Tables

QA/QC Methodology and RPD Tables

Next Environmental Inc. ("NEXT") adheres to stringent Quality Assurance/Quality Control ("QA/QC") procedures considering the following documents:

- British Columbia Field Sampling Manual (2013 Edition), January 2003;
- BC Environmental Laboratory Manual, 2015 edition;
- BC Ministry of Environment and Climate Change Strategy ("Ministry"), Technical Guidance 1 - Site Characterization and Confirmation Testing, January 2009;
- CSAP Soil Vapour Advice and Practice Guidelines Development Panel, Soil Vapour Advice and Practice Guidelines Development Panel - Stage1, October 30, 2009; and,
- BC Ministry of Environment and Climate Change Strategy ("Ministry"), Contaminated Sites – Q&As, October 16, 2015.

NEXT's QA/QC procedures include the following components:

I. **Investigation and Field QA/QC;**
II. **Data processing and reporting QA/QC; and,**
III. **Laboratory QA/QC.**

The subsequent sections provide a detailed description of the methodology for each component.

I. Investigation and Field QA/QC

The QA/QC for field work includes the following tasks:

- Investigation Design: Prior to planning and conducting a Site Investigation, a Conceptual Site Model ("CSM") is developed to ensure that the investigation locations are chosen to adequately assess APECs, and to delineate contamination within the constraints of the Site (i.e. non-movable objects, buildings, utilities, tenant operations, etc.). The CSM contains information including, but not limited to, geological units, hydro stratigraphic units, groundwater tables, contaminant types and source zones, contaminant plumes, contaminant transportation mechanisms, NAPL, preferential pathways, buildings, in-ground structures (basements, USTs, hoists), and potential receptors. A CSM is typically a visual presentation and/or narrative description of the physical, chemical, and biological process occurring or have occurred at the Site. The CSM is continuously updated with data as the investigation progresses.

- Field Investigation: All field staff is familiar with and strictly apply the protocols described in the "Investigation Methodology" Appendix. Adherence to the procedures ensures compliance with regulatory requirements, best practices and comparability of data over the course of an investigation. The sampling protocols are designed to protect the integrity of the samples during collection and shipment. Sample selection for laboratory analysis is based on field observations and screening, and to achieve the investigation requirements.

- Documentation: All field staff use sampling and documentation Forms as described in the "Investigation Methodology" Appendix to establish a comprehensive record of all field activities. The Forms and record system are designed to ensure traceability of samplers and samples, to document adherence to the investigation methodology and to note potential anomalies.

- Instruments and equipment: All in-house and/or rented gear is regularly maintained and calibrated as per

the manufacturer's operating manual.

- Sample Containers: Only clean and/or conditioned laboratory provided sample containers are used.

- Sample treatment: To avoid potential false positives in high organic content soils (e.g. peat, woodwaste), in some instances NEXT requests the laboratories to perform a silica-gel cleanup for petroleum hydrocarbons in soil, groundwater, surface water, or sediment samples to remove the effects of naturally occurring hydrocarbons. Sometimes a saturated paste cleanup for sodium and chloride in soils is requested to more accurately reflect the "soluble" concentrations of these ions. Speciation of certain metals may also be performed, for instance chromium III and chromium VI.

- Field duplicates: Field duplicates are multiple (two or more) samples collected at the same location and time using the same method. The purpose of field duplicates is to establish the precision of each substance within the samples and assess the laboratory performance. Guidance on the recommended number of field duplicates relative to the total number of samples (10%) submitted for analysis is provided in TG1 with regards to stockpile sampling. However, this guidance for field duplicates has been widely adopted by the industry as an accepted best practice. Therefore, NEXT submits at least one duplicate sample for every ten samples analyzed and per sampling event. This is done for all environmental media (soil, groundwater, surface water, soil vapour, sediment). Rationale is provided if there is a deviation from this procedure.

II. Data processing and report QA/QC

All analytical results are received from the laboratories in electronic format for import into a centralized in-house database. The database contains a master list of the CSR, CCME and HWR standards for various environmental media. It is regularly maintained to reflect the most recent standards. The database is used to generate tables by completing queries where the analytical results are compared to the standards applicable to the Site. All tables are compared to the laboratory's Certificate of Analysis ("COA") by staff to ensure there are no errors in the automated data processing.

For field duplicate samples, the variability or Relative Percent Difference is calculated using the following equation:

$$\text{RPD [\%]} = \frac{C_{Max} - C_{Min}}{(C_{Max} + C_{Min})/2} \times 100$$

C_{Max}: higher concentration of sample and duplicate
C_{Min}: lower concentration of sample and duplicate

As per common industry practice, NEXT has adopted the following Data Quality Objectives ("DQO") for the field duplicates. For all environmental media, if the DQOs are not achieved, (i.e. the RDPs are outside the acceptable range), a discussion is provided about how the results may affect the report's validity and conclusion.

Parameter Category	**Field Duplicate DQO (as RPD) Applicable at Concentrations >5x MDL**
Soil and Sediment	20%
Water	20%
Vapour	40%

Note that RPDs are only calculated when the analytical results of the sample and the duplicate are greater than 5 times the laboratory's method detection limit ("MDL"). NEXT generally compares the duplicate with the higher concentration to the standard. Rationale is provided if a different approach is used.

Soil and groundwater RPDs of 20% follow standard industry practice and were generally endorsed by the Ministry in their Q&A's document. Soil vapour field duplicates often show a higher variability compared to soil and water samples. Soil vapour RPDs of ≤40% were therefore implemented to account for this variability. The ≤40% is in line with the DQO prescribed for laboratory duplicates in the BC Environmental Laboratory Manual, and therefore considered a reasonable and justified DQO for field duplicates.

III. Laboratory QA/QC

NEXT works exclusively with laboratories that are accredited by the Canadian Association for Laboratory Accreditation ("CALA"). The CALA accredited laboratories are considered qualified laboratories to perform specified chemical analyses as defined by the Environmental Data Quality Assurance Regulation ("EDQA"). The laboratories adhere to strict and standardized QA/QC methods and release data only if all their QA/QC targets are achieved. The laboratories provide the results of their internal QA/QC results in their COA's for each batch of samples that was analysed. These COA's also provide information about the analytical methods, detection limits, method blanks, internal laboratory duplicates, blank spikes, and standard reference materials. NEXT reviews the laboratory supplied material and data, which includes the following steps:

- Order sampling jars from the laboratory prior to the sampling and ensure correct bottles/jars were delivered (e.g. VOC sampling also needs both 50 ml glass jars for moisture content analysis);
- Check the lab testing parameters on the Sample Receipt Confirmation ("SRC") to see if it matches with the provided PCOC list (especially for VOCs);
- Review of COA's received from the laboratories to verify the validity of the data and screen for sample integrity flags.

Appendix D
List of Acronyms

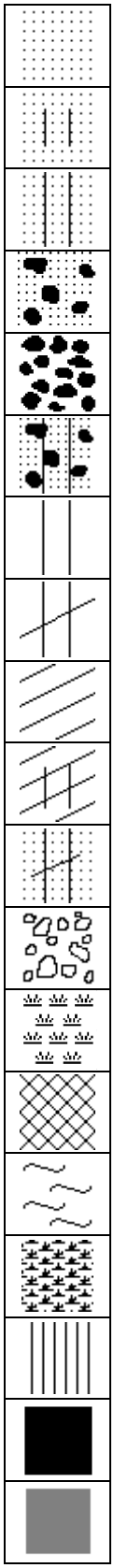
LIST OF ACRONYMS

APEC(s)	Area(s) of Potential Environmental Concern
AST(s)	Aboveground Storage Tank(s)
AW	Aquatic Life Standard
BTEXS	Benzene, Toulene, Ethylbenzene, Xylenes, Styrene
CL	Commercial Land Use
COC	Certificate of Compliance
CSA	Canadian Standards Association
CSR	Ministry's Contaminated Sites Regulation
CU	Commercial Use Vapour Standard
DNAPL	Dense Non-Aqueous Phase Liquid
DFO	Department of Fisheries and Oceans Canada
DSI	Detailed Site Investigation
DW	Drinking Water Use Standard
EMA	Ministry's Environmental Management Act
EPH	Extractable Petroleum Hydrocarbon
ESA	Environmental Site Assessment
ha	Hectares
HDPE	High-density Polyethylene
HEPH	Heavy Extractable Petroleum Hydrocarbon
HWR	Ministry Hazardous Waste Regulation
ICOC(s)	Identified Contaminant(s) of Concern
IL	Industrial Land Use
IU	Industrial Use Vapour Standard
IW	Irrigation Water Use Standard
km	Kilometers
LEPH	Light Extractable Petroleum Hydrocarbon
LNAPL	Light Non-Aqueous Phase Liquid
LW	Livestock Water Use Standard
m	Meters
mbg	Meters below grade
mm	Millimeters
MTBE	Methyl Tert-Butyl Ether
Ministry	BC Ministry of Environment & Climate Change Strategy
NEXT	Next Environmental Inc.
PAHs	Polycyclic Aromatic Hydrocarbons
PCOC(s)	Potential Contaminant(s) of Concern
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RL	Residential Land Use
RU	Residential Use Vapour Standard
ROW(s)	Right of Way(s)
Stage 1	Stage 1 Preliminary Site Investigation
Stage 1 Update	Stage 1 Preliminary Site Investigation Update
Stage 2	Stage 2 Preliminary Site Investigation
TG1	Ministry's Technical Guidance 1
TG10	Ministry's Technical Guidance 10
UST(s)	Underground Storage Tank(s)
VOCs	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons

Appendix E
Borehole Logs

Borehole Log Legend

Soil Stratigraphy:

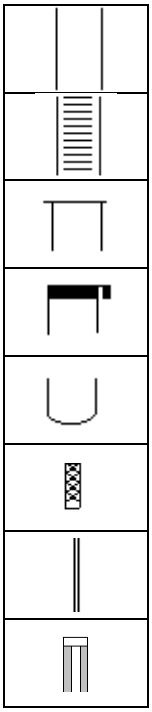


- SAND
- Silty SAND
- Sandy SILT
- SAND and GRAVEL
- GRAVEL
- Silty SAND and GRAVEL
- SILT
- Clayey SILT
- CLAY
- Silty CLAY
- Silty/Clayey SAND
- COBBLES/BOULDERS
- PEAT
- DEBRIS
- TOPSOIL
- Woodwaste
- Peaty SILT
- ASPHALT
- CONCRETE

Laboratory Analysis:

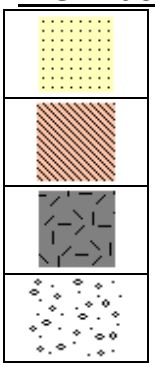
Y – YES (Soil Analyses completed)

Well Construction Material:



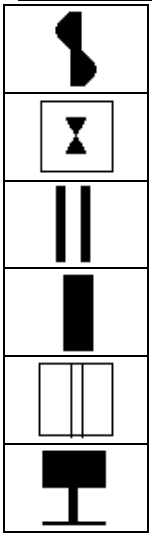
- Solid Pipe
- Screen Pile
- Flush Mount
- J-Plug
- Bottom Cap
- Vapour Probe
- Teflon Tubing
- Subslab Vapour Probe

Well Backfill Material:



- Filter Sand
- Bentonite
- Concrete
- Slough

Sample Type:



- Solid Stem Auger
- Hand Auger
- Hollow Stem
- Sonic
- ODEX
- Daylighting/Vacuum Truck

NEXT Environmental Inc.

Borehole Log: BH101

Project No.: THE330101.01 **Logged By:** LP

Project: Phase II ESA **Client:** The Corporation of the District of Oak Bay

Location of Borehole: West side of on-Site UST

Site Address: 1327 Beach Drive, Victoria, BC

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Depth/Elev.
0 / 0		Ground Surface	0.00
0 / 0		***ASPHALT***	
1 / 0		***SAND (fill)*** Brown, SAND (fill), some gravel, loose, wet @ ~0.6m, no staining, no odours.	
5 / 1		Refusal	1.83
6 / 2		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
BH101-01			0	
BH101-02			0	
BH101-03/-53		Y	0	
BH101-04/-54			0	

Borehole Completion

Depth: ft 0–20 / m 0–6

Drilled By: TerraTech Drilling Ltd.

Drill (Sample) Method: Solid Stem Auger & Hydrovac

Drill Date: January 29, 2020

Depth to Water (below top) (m): 0.67

Top of Pipe (top) Well Elevation (m): Not surveyed

Surface Grade Elevation (m): Not surveyed

Groundwater Analysis: Y

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH102

Project No.: THE330101.01 **Logged By:** LP

Project: Phase II ESA **Client:** The Corporation of the District of Oak Bay

Location of Borehole: East side of on-Site UST

Site Address: 1327 Beach Drive, Victoria, BC

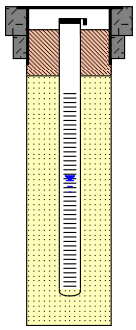
SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.00
0	0		**ASPHALT**	
1	0		**SAND (fill)** Brown, SAND (fill), some gravel, loose, wet @ ~0.6m, no staining, no odours.	
5	1		Refusal	1.68
6	2		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
BH102-01			0	
BH102-02			0	
BH102-03/-53		Y	0	
BH102-04-54			0	

Borehole Completion



Depth (ft / m)

Drilled By: TerraTech Drilling Ltd.

Drill (Sample) Method: Solid Stem Auger & Hydrovac

Drill Date: January 29, 2020

Depth to Water (below top) (m): 0.67

Top of Pipe (top) Well Elevation (m): Not surveyed

Surface Grade Elevation (m): Not surveyed

Groundwater Analysis: Y

Sheet: 1 of 1

Appendix F
Field Forms

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: BH101

PROJECT NO: THE33010101 **ADDRESS:** 1327 Beach Drive, Oak Bay, BC

DATE: 2020-01-30 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 Inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	1.72	m
Water Level (from top of pipe)	0.67	m
Water Column Thickness (1)	1.05	m

PURGING REQUIREMENTS		
1 Well Volume (2)	2.1	Litres
3 Well Volume (3)	6.3	Litres
10 Well Volume (4)	21.0	Litres

PURGING INFORMATION

☒ Waterra Inertia Pumping ☐ Whale Pump ☐ Bailer ☐ Other:

1st Purge	
Date	2020-01-30
Time	8 :30
Volume	80 Litres
Purged Dry?	Yes / (No)

2nd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

3rd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

Total Volume Purged	
80	Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT

Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)
Stability Limits:	±0.1 units	±0.2°C	±3%	±10%

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS

Well Recovery Rate	Slow	1	2	3	4	5	6	7	8	9	(10)	Very Fast
Turbidity Start	Low	1	2	3	4	5	6	7	8	9	(10)	Extreme
Turbidity End	Low	(1)	2	3	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours	None											

(1) Thickness = Well Depth - Water Level

(2) One Well Volume Calculations:

2" Well: [*water column*] x 2

1.5" Well: [*water column*] x 1.2

1.0" Well: [*water column*] x 0.5

Target Well Volume Calculations:

(3) 3 Well Volumes = 1 Well Volume x 3

(4) 10 Well Volumes = 1 Well Volume x 10

Development complete when:

1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized field readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER SAMPLING FIELD FORM

Well ID: BH101

PROJECT NO: THE330101.01 **ADDRESS:** 1327 Beach Drive, Oak Bay, BC

DATE: 2020-01-31 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	1.78	m
Water Level (from top of pipe)	0.67	m
Water Column Thickness	1.11	m

PURGING REQUIREMENTS		
One Well Volume (Min. purge)	2.2	Litres
Three Well Volumes (Max. purge)	6.6	Litres

NOTE: See well development field form for well volume calculations

PURGING & SAMPLING INFORMATION

☒ Low Flow - Peristaltic Pump ☐ Low Flow - Bladder Pump ☐ Bailer ☐ Other:

	Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)	DO (mg/L)	ORP (mV)	NOTES (pump rate, odours, salinity etc.)
Start Purging: 1:10								
Hanna	5	7.10	9.7	3304	1650			
Hanna	7	7.12	9.8	3160	1581			
YSI	10	7.12	9.8	3126	1565			
Finish Sampling: 2:25								
Stability Limits:		±0.1 units	±0.2°C	±3%	±10%	±10%	±10mV	

SAMPLE COLLECTION

Sample Turbidity	Low	1	(2)	3	4	5	6	7	8	9	10	Extreme
Duplicate Sample ID	BH151											
Laboratory	ALS											
Analysis	Heating oil											

COMMENTS

N/A

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: BH102

PROJECT NO: THE 33101.01.01 **ADDRESS:** 1327 Beach Drive, Oak Bay, BC

DATE: 2020-01-30 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 Inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	1.42	m
Water Level (from top of pipe)	0.67	m
Water Column Thickness (1)	0.75	m

PURGING REQUIREMENTS		
1 Well Volume (2)	1.5	Litres
3 Well Volume (3)	4.5	Litres
10 Well Volume (4)	15.0	Litres

PURGING INFORMATION

☒ Waterra Inertia Pumping ☐ Whale Pump ☐ Bailer ☐ Other:

1st Purge	
Date	2020-01-30
Time	9 : 10
Volume	80 Litres
Purged Dry?	Yes / (No)

2nd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

3rd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

Total Volume Purged	
80	Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT

Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)
Stability Limits:	±0.1 units	±0.2°C	±3%	±10%

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS

Well Recovery Rate	Slow	1	2	3	4	5	6	7	8	9	(10)	Very Fast
Turbidity Start	Low	1	2	3	4	5	6	7	8	(9)	10	Extreme
Turbidity End	Low	(1)	2	3	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours	None											

(1) Thickness = Well Depth - Water Level

(2) One Well Volume Calculations:

2" Well: [*water column*] x 2

1.5" Well: [*water column*] x 1.2

1.0" Well: [*water column*] x 0.5

Target Well Volume Calculations:

(3) 3 Well Volumes = 1 Well Volume x 3

(4) 10 Well Volumes = 1 Well Volume x 10

Development complete when:

1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized field readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER SAMPLING FIELD FORM

Well ID: BH102

PROJECT NO: THE330101.01 **ADDRESS:** 327 Beach Drive, Oak Bay, BC

DATE: 2020-01-31 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	1.47	m
Water Level (from top of pipe)	0.67	m
Water Column Thickness	0.8	m

PURGING REQUIREMENTS		
One Well Volume (Min. purge)	1.6	Litres
Three Well Volumes (Max. purge)	4.8	Litres

NOTE: See well development field form for well volume calculations

PURGING & SAMPLING INFORMATION

☒ Low Flow - Peristaltic Pump ☐ Low Flow - Bladder Pump ☐ Bailer ☐ Other:

	Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)	DO (mg/L)	ORP (mV)	NOTES (pump rate, odours, salinity etc.)
	Start Purging: 2:36							
Hanna	6	7.54	9.6	859	425			
Hanna	7	7.52	9.6	855	422			
YSI	8	7.52	9.7	856	422			
	Finish Sampling: 3:15							
	Stability Limits:	±0.1 units	±0.2°C	±3%	±10%	±10%	±10mV	

SAMPLE COLLECTION

Sample Turbidity	Low	(1)	2	3	4	5	6	7	8	9	10 Extreme
Duplicate Sample ID	N/A										
Laboratory	ALS										
Analysis	Heating Oil										

COMMENTS

N/A

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: MW-01

PROJECT NO: THE33010101 **ADDRESS:** 1327 Beach Drive, oakBay, BC

DATE: 2020-01-30 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
4 Inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	3.24	m
Water Level (from top of pipe)	3.14	m
Water Column Thickness [1]	0.10	m

PURGING REQUIREMENTS		
1 Well Volume [2]	0.80	Litres
3 Well Volume [3]	2.40	Litres
10 Well Volume [4]	8.00	Litres

PURGING INFORMATION

☐ Waterra Inertia Pumping ☐ Whale Pump ☐ Bailer ☒ Other: Peristaltic Pump

1st Purge	
Date	2020-01-30
Time	3:00
Volume	15 Litres
Purged Dry?	Yes / (No)

2nd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

3rd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

Total Volume Purged
15 Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT

Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)
Stability Limits:	±0.1 units	±0.2°C	±3%	±10%

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS

Well Recovery Rate	Slow	1	2	3	4	5	6	7	8	9	(10)	Very Fast
Turbidity Start	Low	(1)	2	3	4	5	6	7	8	9	10	Extreme
Turbidity End	Low	(1)	2	3	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours	None											

[1] Thickness = Well Depth - Water Level

[2] One Well Volume Calculations:

2" Well: [*water column*] x 2

1.5" Well: [*water column*] x 1.2

1.0" Well: [*water column*] x 0.5

Target Well Volume Calculations:

[3] 3 Well Volumes = 1 Well Volume x 3

[4] 10 Well Volumes = 1 Well Volume x 10

Development complete when:

1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized field readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER SAMPLING FIELD FORM

Well ID: MW-01

PROJECT NO: THE330101.01 **ADDRESS:** 1327 Beach Dr, Oak Bay, BC

DATE: 2020-01-31 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
4 inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	3.24	m
Water Level (from top of pipe)	3.14	m
Water Column Thickness	0.10	m

PURGING REQUIREMENTS		
One Well Volume (Min. purge)	0.80	Litres
Three Well Volumes (Max. purge)	2.40	Litres

NOTE: See well development field form for well volume calculations

PURGING & SAMPLING INFORMATION

☒ Low Flow - Peristaltic Pump ☐ Low Flow - Bladder Pump ☐ Bailer ☐ Other:

	Hanna				YSI		
Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)	DO (mg/L)	ORP (mV)	NOTES (pump rate, odours, salinity etc.)
Start Purging: 12:20							
5	7.16	9.9	767	384			
6	7.18	10.2	762	381			
7	7.18	10.2	764	383			
Finish Sampling: 1:00							
Stability Limits:	±0.1 units	±0.2°C	±3%	±10%	±10%	±10mV	

SAMPLE COLLECTION

Sample Turbidity	Low	(1)	2	3	4	5	6	7	8	9	10 Extreme
Duplicate Sample ID	N/A										
Laboratory	ALS										
Analysis	Gasoline + Diesel										

COMMENTS

None

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: MW-02

PROJECT NO: THE330101.01 **ADDRESS:** 1327 Beach Drive, Oak Bay, BC

DATE: 2020-01-30 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
4 Inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	2.78	m
Water Level (from top of pipe)	3.08	m
Water Column Thickness (1)	0.30	m

PURGING REQUIREMENTS		
1 Well Volume (2)	1.20	Litres
3 Well Volume (3)	3.60	Litres
10 Well Volume (4)	12.0	Litres

PURGING INFORMATION

☐ Waterra Inertia Pumping ☐ Whale Pump ☐ Bailer ☒ Other: Peristaltic Pump

1st Purge	
Date	2020-01-30
Time	4 :00
Volume	15 Litres
Purged Dry?	Yes / (No)

2nd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

3rd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

Total Volume Purged
Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT

Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)
Stability Limits:	±0.1 units	±0.2°C	±3%	±10%

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS

Well Recovery Rate	Slow	1	2	3	4	5	6	7	8	9	(10)	Very Fast
Turbidity Start	Low	(1)	2	3	4	5	6	7	8	9	10	Extreme
Turbidity End	Low	(1)	2	3	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours	None											

(1) Thickness = Well Depth - Water Level

(2) One Well Volume Calculations:

2" Well: [*water column*] x 2

1.5" Well: [*water column*] x 1.2

1.0" Well: [*water column*] x 0.5

Target Well Volume Calculations:

(3) 3 Well Volumes = 1 Well Volume x 3

(4) 10 Well Volumes = 1 Well Volume x 10

Development complete when:

1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized field readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER SAMPLING FIELD FORM

Well ID: MW-02

PROJECT NO: THE330101.01 **ADDRESS:** 1327 Beach Drive, OakBay, BC

DATE: 2020-01-31 **NEXT STAFF:** LP

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
4 inches	Yes / (No) Height: _____ m	(Yes) / No	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	2.78	m
Water Level (from top of pipe)	3.08	m
Water Column Thickness	0.30	m

PURGING REQUIREMENTS		
One Well Volume (Min. purge)	1.20	Litres
Three Well Volumes (Max. purge)	3.60	Litres

NOTE: See well development field form for well volume calculations

PURGING & SAMPLING INFORMATION

☒ Low Flow - Peristaltic Pump ☐ Low Flow - Bladder Pump ☐ Bailer ☐ Other:

Hanna | YSI

Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)	DO (mg/L)	ORP (mV)	NOTES (pump rate, odours, salinity etc.)
Start Purging: 11:40							
5	7.11	9.8	760	380			
6	7.14	9.9	758	379			
7	7.13	9.9	759	380			
Finish Sampling: 12:15							

Stability Limits: ±0.1 units ±0.2°C ±3% ±10% ±10% ±10mV

SAMPLE COLLECTION

Sample Turbidity	Low (1)	2	3	4	5	6	7	8	9	10	Extreme
Duplicate Sample ID	N/A										
Laboratory	ALS										
Analysis	Gasoline + Diesel										

COMMENTS

None

Appendix G
Laboratory Reports and Certificates

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **VA20A1230**	Page	: 1 of 4
Client	: **NEXT Environmental Inc.**	Laboratory	: Vancouver - Environmental
Contact	: Luca Patillo	Account Manager	: Brent Mack
Address	: 215 - 2550 Boundary Road Burnaby BC Canada V5M 3Z3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: 604 419 3800	Telephone	: +1 604 253 4188
Project	: THE330101.01	Date Samples Received	: 03-Feb-2020 12:30
PO	: ----	Date Analysis Commenced	: 04-Feb-2020
C-O-C number	: ----	Issue Date	: 07-Feb-2020 10:20
Sampler	: ----		
Site	: ----		
Quote number	: Q57781 - Standing Offer		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
µg/L	micrograms per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in reports identified as "Preliminary Report" are considered authorized for use.

Qualifiers

Qualifier	*Description*
ABL	*Approximate Result: May be biased low.*
DLQ	*Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BH101	BH102	MW01	MW02	BH151
					Client sampling date / time	31-Jan-2020 13:00	31-Jan-2020 14:00	31-Jan-2020 15:00	31-Jan-2020 16:00	31-Jan-2020 13:00
						VA20A1230-001	VA20A1230-002	VA20A1230-003	VA20A1230-004	VA20A1230-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
benzene	71-43-2	E611A	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
butadiene, 1,3-	106-99-0	E611N	0.20	µg/L		----	----	<0.20	<0.20	----
decane, n-	124-18-5	E611N	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
dibromoethane, 1,2-	106-93-4	E611N	0.10	µg/L		----	----	<0.10	<0.10	----
dichloroethane, 1,2-	107-06-2	E611N	1.0	µg/L		----	----	<1.0	<1.0	----
ethylbenzene	100-41-4	E611A	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
hexane, n-	110-54-3	E611N	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
isopropylbenzene	98-82-8	E611N	1.0	µg/L		----	----	<1.0	<1.0	----
methylcyclohexane	108-87-2	E611N	1.0	µg/L		----	----	<1.0	<1.0	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.50	µg/L		----	----	<0.50	<0.50	----
nonane, n-	111-84-2	E611N	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
styrene	100-42-5	E611A	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
toluene	108-88-3	E611A	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
trimethylbenzene, 1,2,4-	95-63-6	E611N	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
trimethylbenzene, 1,3,5-	108-67-8	E611N	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
xylene, m+p-	179601-23-1	E611A	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
xylene, o-	95-47-6	E611A	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
xylenes, total	1330-20-7	E611A	0.75	µg/L		<0.75	<0.75	<0.75	<0.75	<0.75
Volatile Organic Compound Surrogates										
bromofluorobenzene, 4-	460-00-4	E611A	0.50	%		100	101	103	99.0	102
bromofluorobenzene, 4-	460-00-4	E611N	1.0	%		100	101	103	99.0	102
difluorobenzene, 1,4-	540-36-3	E611A	0.50	%		95.3	96.8	101	102	100
difluorobenzene, 1,4-	540-36-3	E611N	1.0	%		95.3	96.8	101	102	100
Hydrocarbons										
EPH (C10-C19)	----	E601A	250	µg/L		<250	<250	<250	<250	<250
EPH (C19-C32)	----	E601A	250	µg/L		<250	<250	<250	<250	<250
LEPHw	----	EC600A	250	µg/L		<250	<250	<250	<250	<250
VHw (C6-C10)	----	E581.VH	100	µg/L		<100	<100	<100	<100	<100
VPHw	----	EC580A	100	µg/L		<100	<100	<100	<100	<100
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	50	%		86.3	92.6	93.3	91.5	91.0

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BH101	BH102	MW01	MW02	BH151
					Client sampling date / time	31-Jan-2020 13:00	31-Jan-2020 14:00	31-Jan-2020 15:00	31-Jan-2020 16:00	31-Jan-2020 13:00
						VA20A1230-001	VA20A1230-002	VA20A1230-003	VA20A1230-004	VA20A1230-005
						Result	Result	Result	Result	Result
Hydrocarbon Surrogates										
dichlorotoluene, 3,4-	97-75-0	E581.VH	1.0	%		113	115	103	78.9	123
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
acridine	260-94-6	E641A	0.010	µg/L		<0.010 ABL	<0.010	<0.010	<0.010	<0.010 ABL
anthracene	120-12-7	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
benz(a)anthracene	56-55-3	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
benzo(a)pyrene	50-32-8	E641A	0.0050	µg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
benzo(b+j)fluoranthene	----	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
chrysene	218-01-9	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
dibenz(a,h)anthracene	53-70-3	E641A	0.0050	µg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
fluoranthene	206-44-0	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
fluorene	86-73-7	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
methylnaphthalene, 1-	90-12-0	E641A	0.010	µg/L		0.034	0.021	<0.010	<0.010	0.032
methylnaphthalene, 2-	91-57-6	E641A	0.010	µg/L		0.046	0.033	<0.020 DLQ	<0.020 DLQ	0.044
naphthalene	91-20-3	E641A	0.050	µg/L		0.089	<0.050	<0.050	<0.050	0.084
phenanthrene	85-01-8	E641A	0.020	µg/L		<0.020	<0.020	<0.020	<0.020	<0.020
pyrene	129-00-0	E641A	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
quinoline	6027-02-7	E641A	0.050	µg/L		<0.050	<0.050	<0.050	<0.050	<0.050
acridine-d9	34749-75-2	E641A	0.010	%		13.7 RRV	105	98.2	97.2	13.0 RRV
chrysene-d12	1719-03-5	E641A	0.010	%		91.8	107	96.8	94.1	91.4
naphthalene-d8	1146-65-2	E641A	0.010	%		90.3	94.3	90.4	90.7	86.8
phenanthrene-d10	1517-22-2	E641A	0.010	%		99.1	110	104	104	99.2

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **VA20A1220**	Page	: 1 of 4
Client	: **NEXT Environmental Inc.**	Laboratory	: Vancouver - Environmental
Contact	: Luca Patillo	Account Manager	: Brent Mack
Address	: 215 - 2550 Boundary Road Burnaby BC Canada V5M 3Z3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: 604 419 3800	Telephone	: +1 604 253 4188
Project	: THE330101.01	Date Samples Received	: 03-Feb-2020 12:30
PO	: ----	Date Analysis Commenced	: 04-Feb-2020
C-O-C number	: ----	Issue Date	: 06-Feb-2020 15:11
Sampler	: ----		
Site	: ----		
Quote number	: Q57781 - Standing Offer		
No. of samples received	: 12		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Brieanna Allen	Department Manager - Organics	Organics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
%	percent
mg/kg	milligrams per kilogram

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in reports identified as "Preliminary Report" are considered authorized for use.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BH101-03	BH101-53	BH102-03	----	----
					Client sampling date / time	29-Jan-2020 12:00	29-Jan-2020 12:00	[29-Jan-2020]	----	----
						VA20A1220-003	VA20A1220-004	VA20A1220-009	--------	--------
						Result	Result	Result	----	----
Physical Tests										
moisture	----	E144	0.25	%		6.92	6.64	11.9	----	----
Volatile Organic Compounds										
benzene	71-43-2	E611A	0.0050	mg/kg		<0.0050	<0.0050	<0.0050	----	----
decane, n-	124-18-5	E611N	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
ethylbenzene	100-41-4	E611A	0.015	mg/kg		<0.015	<0.015	<0.015	----	----
hexane, n-	110-54-3	E611N	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
nonane, n-	111-84-2	E611N	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
propylbenzene, n-	103-65-1	E611N	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
styrene	100-42-5	E611A	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
toluene	108-88-3	E611A	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
trimethylbenzene, 1,2,4-	95-63-6	E611N	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
trimethylbenzene, 1,3,5-	108-67-8	E611N	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
xylene, m+p-	179601-23-1	E611A	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
xylene, o-	95-47-6	E611A	0.050	mg/kg		<0.050	<0.050	<0.050	----	----
xylenes, total	1330-20-7	E611A	0.075	mg/kg		<0.075	<0.075	<0.075	----	----
bromofluorobenzene, 4-	460-00-4	E611A	0.050	%		100	99.4	90.2	----	----
bromofluorobenzene, 4-	460-00-4	E611N	0.050	%		100	99.4	90.2	----	----
difluorobenzene, 1,4-	540-36-3	E611A	0.050	%		93.0	94.8	88.2	----	----
difluorobenzene, 1,4-	540-36-3	E611N	0.050	%		93.0	94.8	88.2	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A	200	mg/kg		<200	<200	<200	----	----
EPH (C19-C32)	----	E601A	200	mg/kg		<200	<200	<200	----	----
HEPHs	----	EC600A	200	mg/kg		<200	<200	<200	----	----
LEPHs	----	EC600A	200	mg/kg		<200	<200	<200	----	----
VHs (C6-C10)	----	E581.VH	10	mg/kg		<10	<10	<10	----	----
VPHs	----	EC580A	10	mg/kg		<10	<10	<10	----	----
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	5.0	%		98.4	96.6	94.9	----	----
dichlorotoluene, 3,4-	97-75-0	E581.VH	1.0	%		88.1	91.4	72.2	----	----
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg		<0.0050	<0.0050	<0.0050	----	----

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	BH101-03	BH101-53	BH102-03	----	----
					Client sampling date / time	29-Jan-2020 12:00	29-Jan-2020 12:00	[29-Jan-2020]	----	----
						VA20A1220-003	VA20A1220-004	VA20A1220-009	--------	--------
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons										
anthracene	120-12-7	E641A-L	0.0040	mg/kg		<0.0040	<0.0040	<0.0040	----	----
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
chrysene	218-01-9	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg		<0.0050	<0.0050	<0.0050	----	----
fluoranthene	206-44-0	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
fluorene	86-73-7	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
naphthalene	91-20-3	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
phenanthrene	85-01-8	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
pyrene	129-00-0	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
quinoline	6027-02-7	E641A-L	0.010	mg/kg		<0.010	<0.010	<0.010	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg		<0.010	<0.010	<0.010	----	----
IACR (CCME)	----	E641A-L	0.15	mg/kg		<0.11	<0.11	<0.11	----	----
acridine-d9	34749-75-2	E641A-L	0.010	%		95.2	91.8	90.6	----	----
chrysene-d12	1719-03-5	E641A-L	0.010	%		105	103	101	----	----
naphthalene-d8	1146-65-2	E641A-L	0.010	%		98.3	98.8	95.7	----	----
phenanthrene-d10	1517-22-2	E641A-L	0.010	%		103	100	99.0	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Appendix H
Author and Reviewer Qualification

Author

Luca Patillo, Dipl. T.

Environmental Specialist

Luca joined NEXT in July 2017. He has completed over one hundred Stage 1 & 2 Preliminary Site Investigations, as well as assisted various other supplementary and Detailed Site investigations. In addition to this, he has experience working in contaminated sites for Regional Government, and environmental/compliance monitoring surrounding landfills.

Reviewer

Aio Haberli, M.Sc., P.Chem.

Manager, Preliminary Site Investigations

Aio Haberli has joined NEXT in April 2016 and has worked in the contaminated sites industry for more than five years. He has worked on >200 projects including Stage 1 and 2 PSIs, Phase I and II ESAs, Detailed Site Investigations, as well as remedial excavations and in-situ remediation (ISCO, IAS-SVE, pump and treat). In his role as Project Lead at NEXT he supervises and reviews the completion of several PSI projects every week.

Appendix I
PCOC List

APEC 1: Gasoline & Diesel Fuel USTs

Primary PCOCs		
	Soil	**Groundwater (AW & DW)**
Hydrocarbons	HEPHs LEPHs	EPHw10-19 LEPHw
VOCs	benzene butadiene, 1,3- dibromoethane, 1,2- dichloroethane, 1,2- ethylbenzene methyl tert-butyl ether [MTBE] nonane, n- toluene trimethylbenzene, 1,3,5- VPHs xylenes	benzene butadiene, 1,3- dibromoethane 1,2- dichloroethane, 1,2- ethylbenzene methyl tert-butyl ether [MTBE] nonane, n- toluene trimethylbenzene, 1,3,5- VHw6-10 VPHw xylenes, total
PAHs	acenaphthene anthracene benz(a)anthracene benzo(a)pyrene benzo(b+j)fluoranthenes benzo(k)fluoranthene chrysene dibenz(a,h)anthracene fluoranthene fluorene indeno(1,2,3-cd)pyrene methylnaphthalene, 1- methylnaphthalene, 2- naphthalene phenanthrene pyrene quinoline	acenaphthene acridine anthracene benz(a)anthracene benzo(a)pyrene benzo(b+j)fluoranthenes chrysene dibenz(a,h)anthracene fluoranthene fluorene methylnaphthalene, 1- methylnaphthalene, 2- naphthalene phenanthrene pyrene quinoline

Secondary PCOCs		
	Soil	**Groundwater (AW & DW)**
VOCs	butylbenzene, n- butylbenzene, sec- butylbenzene, tert- isopropylbenzene propylbenzene, 1- styrene	butylbenzene, n- butylbenzene, sec- butylbenzene, tert- isopropylbenzene propylbenzene, 1- styrene
Metals	barium lead**	aluminum antimony arsenic barium beryllium boron cadmium chromium, hexavalent chromium, trivalent cobalt copper lead lithium mercury molybdenum nickel selenium silver strontium thallium tin titanium tungsten uranium vanadium zinc
Other	tetraethyl lead	tetraethyl lead

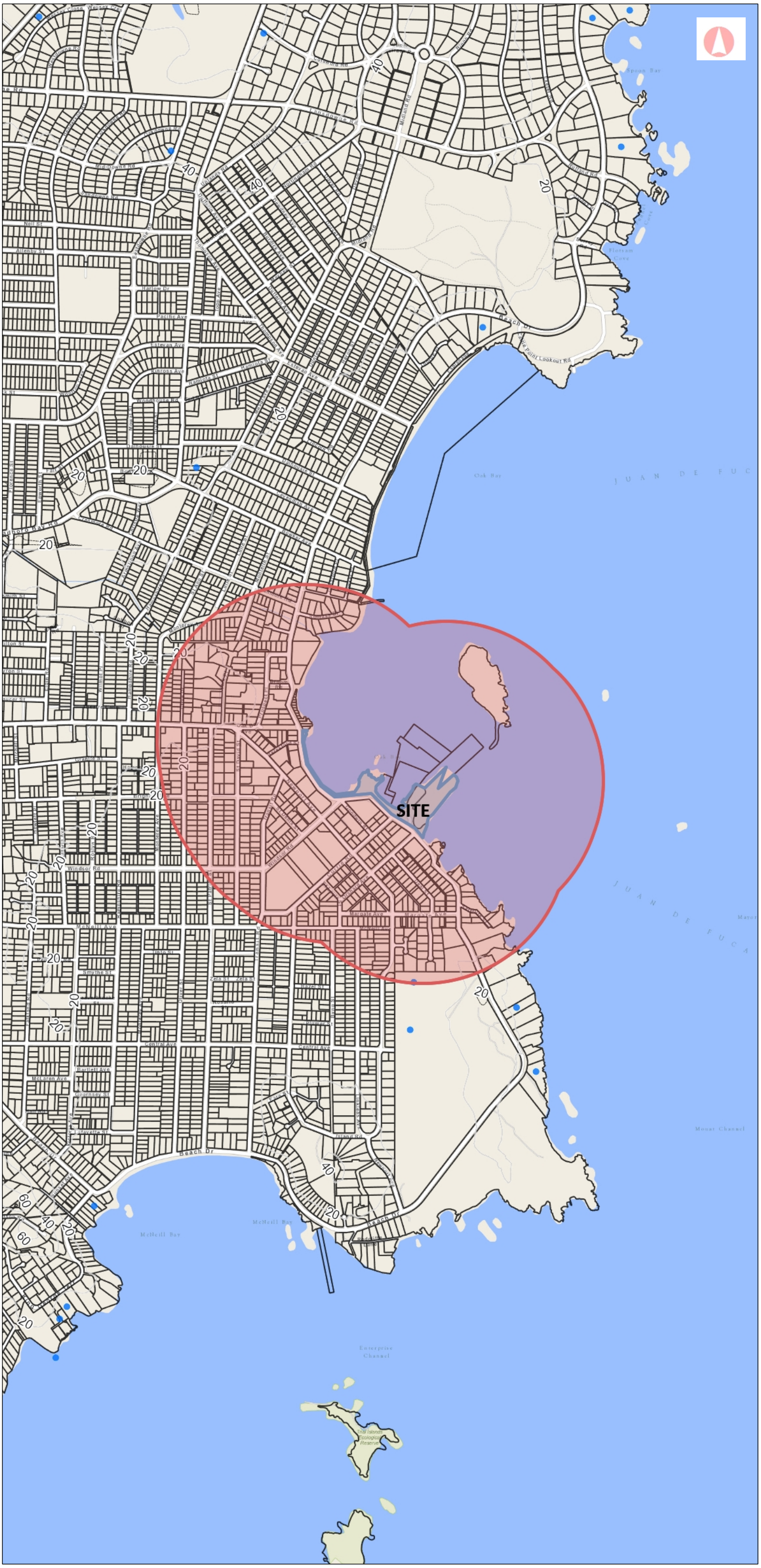
APEC 2: Decommissioned Heating Oil UST

Primary PCOCs		
	Soil	**Groundwater (AW & DW)**
Hydrocarbons	HEPHs LEPHs	EPHw10-19 LEPHw
VOCs	benzene ethylbenzene nonane, n- toluene trimethylbenzene, 1,3,5- VPHs xylenes	benzene ethylbenzene nonane, n- toluene trimethylbenzene, 1,3,5- VHw6-10 VPHw xylenes, total
PAHs	acenaphthene anthracene benz(a)anthracene benzo(a)pyrene benzo(b+j)fluoranthenes benzo(k)fluoranthene chrysene dibenz(a,h)anthracene fluoranthene fluorene indeno(1,2,3-cd)pyrene methylnaphthalene, 1- methylnaphthalene, 2- naphthalene phenanthrene pyrene quinoline	acenaphthene acridine anthracene benz(a)anthracene benzo(a)pyrene benzo(b+j)fluoranthenes chrysene dibenz(a,h)anthracene fluoranthene fluorene methylnaphthalene, 1- methylnaphthalene, 2- naphthalene phenanthrene pyrene quinoline

Secondary PCOCs		
	Soil	**Groundwater (AW & DW)**
VOCs	butylbenzene, n- butylbenzene, sec- butylbenzene, tert- isopropylbenzene propylbenzene, 1- styrene	butylbenzene, n- butylbenzene, sec- butylbenzene, tert- isopropylbenzene propylbenzene, 1- styrene
Metals		aluminum antimony arsenic barium beryllium boron cadmium chromium, hexavalent chromium, trivalent cobalt copper lead lithium mercury molybdenum nickel selenium silver strontium thallium tin titanium tungsten uranium vanadium zinc

Appendix J

iMapBC Search & Land Title(s)



BRITISH COLUMBIA

iMapBC Mapping

Legend

Groundwater Wells - All

ARTESIAN_FLOW

- Reported Artesian Well
- Well

Contours (1:20,000)

FCODE

- Contour - Index
- Contour - Index Indefinite
- Contour - Index Depression
- Contour - Index Depression Inde
- Contour - Intermediate
- Contour - Intermediate Indefinite
- Contour - Intermediate Depressi
- Contour - Intermediate Depressi

☐ Integrated Cadastral Fabric

0 0.41 0.8 km

1: 20,000.00

Copyright/Disclaimer

CAUTION: Maps obtained using this site are not designed to assist in navigation. These maps may be generalized and may not reflect current conditions. Uncharted hazards may exist. DO NOT USE THESE MAPS FOR NAVIGATIONAL PURPOSES.

Datum: NAD83

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

Key Map of British Columbia

TITLE SEARCH PRINT 2020-02-10, 12:29:03

File Reference: THE330101.01 Requestor: Jufar Lai

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Title Issued Under SECTION 172 LAND TITLE ACT

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number 834I
From Title Number 759I

Application Received 1908-02-12

Application Entered 1908-04-13

Registered Owner in Fee Simple
Registered Owner/Mailing Address: THE CORPORATION OF THE DISTRICT OF OAK BAY,
NO ADDRESS ON FILE FOR THIS OWNER

Taxation Authority Oak Bay, The Corporation of the District of

Description of Land
Parcel Identifier: 009-141-103
Legal Description:
BLOCK A, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-111
Legal Description:
BLOCK B, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-138
Legal Description:
BLOCK C, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-146
Legal Description:
BLOCK D, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-154
Legal Description:
BLOCK E, SECTION 23, VICTORIA DISTRICT, PLAN 368

Legal Notations

NOTICE OF CONDITIONAL SALE AS TO PART OF BLOCK B FILED 30/5/1935 N0 37

NOTICE OF CONDITIONAL SALE AS TO PART OF BLOCK B FILED 09/4/1936 N0 72

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL GOVERNMENT ACT, SEE FB483419

Charges, Liens and Interests

Nature:	LEASE
Registration Number:	EG303
Registration Date and Time:	1993-01-04 11:06
Registered Owner:	OAK BAY MARINA (1992) LTD. INCORPORATION NO. 326013
Remarks:	PART SHOWN IN RED ON PLAN 1752R

Nature:	COVENANT
Registration Number:	EG150888
Registration Date and Time:	1993-11-18 11:11
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 215 LAND TITLE ACT. RESTRICTS CONVEYANCING. WITH INDEMNITY AGREEMENT. INTER ALIA.

Nature:	PRIORITY AGREEMENT
Registration Number:	EG150889
Registration Date and Time:	1993-11-18 11:11
Remarks:	GRANTING EG150888 PRIORITY OVER EG303.

Duplicate Indefeasible Title	ISSUED 1908-05-20
To:	H.G. LAWSON
Application Number:	834I

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT 2020-02-10, 12:38:05

File Reference: THE330101.01 Requestor: Jufar Lai

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Title Issued Under	SECTION 172 LAND TITLE ACT
Land Title District	VICTORIA
Land Title Office	VICTORIA
Title Number	834I
From Title Number	759I
Application Received	1908-02-12
Application Entered	1908-04-13
Registered Owner in Fee Simple	
Registered Owner/Mailing Address:	THE CORPORATION OF THE DISTRICT OF OAK BAY, NO ADDRESS ON FILE FOR THIS OWNER
Taxation Authority	Oak Bay, The Corporation of the District of

Description of Land

Parcel Identifier: 009-141-103
Legal Description:
BLOCK A, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-111
Legal Description:
BLOCK B, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-138
Legal Description:
BLOCK C, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-146
Legal Description:
BLOCK D, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-154
Legal Description:
BLOCK E, SECTION 23, VICTORIA DISTRICT, PLAN 368

Legal Notations

NOTICE OF CONDITIONAL SALE AS TO PART OF BLOCK B FILED 30/5/1935 N0 37

NOTICE OF CONDITIONAL SALE AS TO PART OF BLOCK B FILED 09/4/1936 N0 72

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL GOVERNMENT ACT, SEE FB483419

Charges, Liens and Interests

Nature:	LEASE
Registration Number:	EG303
Registration Date and Time:	1993-01-04 11:06
Registered Owner:	OAK BAY MARINA (1992) LTD. INCORPORATION NO. 326013
Remarks:	PART SHOWN IN RED ON PLAN 1752R

Nature:	COVENANT
Registration Number:	EG150888
Registration Date and Time:	1993-11-18 11:11
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 215 LAND TITLE ACT. RESTRICTS CONVEYANCING. WITH INDEMNITY AGREEMENT. INTER ALIA.

Nature:	PRIORITY AGREEMENT
Registration Number:	EG150889
Registration Date and Time:	1993-11-18 11:11
Remarks:	GRANTING EG150888 PRIORITY OVER EG303.

Duplicate Indefeasible Title	ISSUED 1908-05-20
To:	H.G. LAWSON
Application Number:	834I

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT 2020-02-10, 12:36:09

File Reference: THE330101.01 Requestor: Jufar Lai

Declared Value $UNKNOWN

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number EG150886
From Title Number CROWN GRANT DD EG150886.

Application Received 1993-11-18

Application Entered 1993-11-30

Registered Owner in Fee Simple
Registered Owner/Mailing Address: THE CORPORATION OF THE DISTRICT OF OAK BAY
2167 OAK BAY AVENUE
VICTORIA, BC
V8R 1G2

Taxation Authority Oak Bay, The Corporation of the District of

Description of Land
Parcel Identifier: 018-502-938
Legal Description:
DISTRICT LOT 251 OF PART OF THE BED OF OAK BAY, VICTORIA DISTRICT.

Legal Notations NONE

Charges, Liens and Interests

Nature:	UNDERSURFACE AND OTHER EXC & RES
Registration Number:	EG156334
Registration Date and Time:	1993-11-18 11:09
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 47, LAND ACT. INTER ALIA.

Nature:	COVENANT
Registration Number:	EG150888
Registration Date and Time:	1993-11-18 11:11
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 215 LAND TITLE ACT. RESTRICTS CONVEYANCING. WITH INDEMNITY AGREEMENT. INTER ALIA.

Duplicate Indefeasible Title	NONE OUTSTANDING
Transfers	NONE
Pending Applications	NONE

TITLE SEARCH PRINT 2020-02-10, 12:39:48

File Reference: THE330101.01 Requestor: Jufar Lai

Declared Value $UNKNOWN

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number EG150887
From Title Number CROWN GRANT DD EG150886.

Application Received 1993-11-18

Application Entered 1993-11-30

Registered Owner in Fee Simple
Registered Owner/Mailing Address: THE CORPORATION OF THE DISTRICT OF OAK BAY
2167 OAK BAY AVENUE
VICTORIA, BC
V8R 1G2

Taxation Authority Oak Bay, The Corporation of the District of

Description of Land
Parcel Identifier: 018-502-946
Legal Description:
DISTRICT LOT 252 OF PART OF THE BED OF OAK BAY, VICTORIA DISTRICT.

Legal Notations NONE

Charges, Liens and Interests

Nature:	UNDERSURFACE AND OTHER EXC & RES
Registration Number:	EG156334
Registration Date and Time:	1993-11-18 11:09
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 47, LAND ACT. INTER ALIA.

Nature:	COVENANT
Registration Number:	EG150888
Registration Date and Time:	1993-11-18 11:11
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 215 LAND TITLE ACT. RESTRICTS CONVEYANCING. WITH INDEMNITY AGREEMENT. INTER ALIA.

Duplicate Indefeasible Title	NONE OUTSTANDING
Transfers	NONE
Pending Applications	NONE

TITLE SEARCH PRINT 2020-02-10, 12:42:14

File Reference: THE330101.01 Requestor: Jufar Lai

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Title Issued Under	SECTION 172 LAND TITLE ACT
Land Title District	VICTORIA
Land Title Office	VICTORIA
Title Number	834I
From Title Number	759I
Application Received	1908-02-12
Application Entered	1908-04-13
Registered Owner in Fee Simple	
Registered Owner/Mailing Address:	THE CORPORATION OF THE DISTRICT OF OAK BAY, NO ADDRESS ON FILE FOR THIS OWNER
Taxation Authority	Oak Bay, The Corporation of the District of

Description of Land

Parcel Identifier: 009-141-103
Legal Description:
BLOCK A, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-111
Legal Description:
BLOCK B, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-138
Legal Description:
BLOCK C, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-146
Legal Description:
BLOCK D, SECTION 23, VICTORIA DISTRICT, PLAN 368

Parcel Identifier: 009-141-154
Legal Description:
BLOCK E, SECTION 23, VICTORIA DISTRICT, PLAN 368

Legal Notations

NOTICE OF CONDITIONAL SALE AS TO PART OF BLOCK B FILED 30/5/1935 N0 37

NOTICE OF CONDITIONAL SALE AS TO PART OF BLOCK B FILED 09/4/1936 N0 72

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL GOVERNMENT ACT, SEE FB483419

Charges, Liens and Interests

Nature:	LEASE
Registration Number:	EG303
Registration Date and Time:	1993-01-04 11:06
Registered Owner:	OAK BAY MARINA (1992) LTD. INCORPORATION NO. 326013
Remarks:	PART SHOWN IN RED ON PLAN 1752R

Nature:	COVENANT
Registration Number:	EG150888
Registration Date and Time:	1993-11-18 11:11
Registered Owner:	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks:	PURSUANT TO SECTION 215 LAND TITLE ACT. RESTRICTS CONVEYANCING. WITH INDEMNITY AGREEMENT. INTER ALIA.

Nature:	PRIORITY AGREEMENT
Registration Number:	EG150889
Registration Date and Time:	1993-11-18 11:11
Remarks:	GRANTING EG150888 PRIORITY OVER EG303.

Duplicate Indefeasible Title	ISSUED 1908-05-20
To:	H.G. LAWSON
Application Number:	834I

Transfers NONE

Pending Applications NONE