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Technical Memorandum

To: Tim Crowley
Public Works, City of Hamilton

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Wood Environment & Infrastructure Solutions (Wood)

Date: July 7, 2021

Ref: WW20101062 City of Hamilton – Chedoke Creek Remediation Project

Re: Evaluation of Chedoke Creek and Princess Point Sediment Cores and Preliminary Estimate of In-Situ Total Phosphorus and Total Nitrogen Mass, City of Hamilton

1.0 INTRODUCTION

This technical memorandum provides a summary of the methodology and rationale for establishing the preliminary dredge footprint and target dredge elevations within Chedoke Creek and the Princess Point Embayment as part of the preliminary design (30%) process for the Chedoke Creek targeted dredge project.

Wood has prepared a preliminary design for the project that involves establishing a project footprint over the full extent of the Chedoke Creek and the Princess Point embayment to remove the targeted nutrients contained within the sediments from this work area based on the spill event. Wood collected bathymetric and sediment core data from Chedoke Creek and the Princess Point embayment in April 2021 to characterize current sediment conditions and thereby estimate the available in-situ total phosphorus (TP) and total Kjeldahl nitrogen (TKN) mass from the immediately affected area. The potential mass removal from this dredge footprint scenario is reviewed herein and is compared to the estimated nutrient mass transport that occurred during the Combined Sewer Overflow (CSO) spill event.

Subsequent advancement of the design process (60/90/100%) will allow further refinement of target dredge areas that may need to be excluded or added depending on input from various stakeholders, including the Ministry of the Environment, Conservation, and Parks (MECP) and the Royal Botanical Gardens (RBG).

2.0 SEDIMENT DATA COLLECTION

Wood collected sediment cores using a manual piston tube device along the Chedoke Creek transects shown in Figure 1 on 7-9, 12-15, and 19-21 of April 2021. Transects were spaced approximately 100 meters apart and each transect was divided into thirds, when possible, representing the western, centre, and eastern portions of the transect. Core collection was attempted at 15 cm intervals within each of these sections until the piston tube coring device reached refusal. Additional core data were collected from the Princes Point embayment and Cootes Paradise on 20-23 of April 2021 (ref. Figure 1). Sample data were limited in the Princess Point embayment due to shallow and mucky conditions within the middle and western areas of the embayment, preventing access.

Core samples were sent to the analytical laboratory, Bureau Veritas, for chemical characterization of each 15 cm interval. The following nutrient parameters were analyzed: TKN, nitrite, nitrate, nitrate + nitrite, and acid extractable phosphorous (representing TP). Nitrite, nitrate, nitrate + nitrite concentrations were reported consistently less than their respective detection limits so TKN and total nitrogen (TN) were assumed to be the same for this evaluation.

3.0 DETERMINING PRACTICABLE PROJECT MASS LOAD REDUCTIONS AND TARGET DREDGE ELEVATIONS

Wood evaluated the sediment nutrient data collected from Chedoke Creek and the Princess Point embayment to determine the potential TKN and TP mass load reductions that could reasonably be achieved through direct removal of target sediments over the entire project area. Based on a “working” target load reduction, Wood reviewed bathymetry, soft sediment thickness data, and sediment nutrient chemistry for each sediment interval and transect within Chedoke Creek to set preliminary target dredge elevations for various portions of the creek.

Similarly, Wood set preliminary target dredge elevations within the Princess Point embayment using bathymetric data, soft sediment thickness, and sediment nutrient chemistry for points collected within the embayment. Some assumptions were made for the middle and western area of the embayment based on data collected in the eastern sample locations and locations near to the Cootes Paradise (northern extent of the embayment).

3.1 INITIAL IN-SITU NUTRIENT ASSESSMENT

For the initial evaluation, Wood estimated in-situ TKN and TP mass within the dredge footprint using average concentration for each parameter found within the upper 30 cm of sediment over the area within Chedoke Creek and the Princess Point embayment. Sediment within Chedoke Creek had an average TP concentration of 1,078 ug/g while sediment within Princess Point had a slightly lower average TP concentration of 988 ug/g. Chedoke Creek sediment contained an average TKN concentration of 1,417 ug/g while Princess Point sediment contained a slightly higher average TKN concentration of 1,493 ug/g. Wood adjusted for moisture and bulk density using laboratory results to determine the in-situ sediment volume along with in-situ TP and TKN mass shown below in Table 1. Wood has refined the targeted dredge zones and elevations and presents updated mass

removals in Section 3.2 below. The dredge footprint and corresponding estimated TP and TKN mass removals will continue to be refined as the designs are advanced to the 60/90 and 100% stages.

Table 1 – Initial Sediment Volume and Nutrient Mass Evaluation

Location	Surface Area (m ²)	Depth (m)	Sediment Volume (m ³)	Mass of TKN (tonnes)	Mass of TP (tonnes)
Chedoke Creek	31,653	0.3	9,496	18	14
Princess Point	71,421	0.3	21,426	43	29
Total	103,074	0.3	30,922	61	42
Target	-	-	-	312	47
Difference	-	-	-	-251	-5

Dredging the upper 30 cm of sediment within the preliminary targeted dredge area should result in an approximate TP removal of 42 tonnes which is similar to but slightly less than the target of 47 tonnes which discharged during the spill event. The available TKN mass within the potential dredge volume is 61 tonnes, or 251 tonnes less than the estimated TKN mass that was transported downstream during the spill event.

As part of the 60% design phase, Wood is currently refining the target dredge areas based on the amount of material and chemical concentrations present that may result in adjustments to the current dredge template. Wood is also evaluating portions of Chedoke Creek and the Princess Point embayment which may benefit from removal of greater than 30 cm of material. Wood is also including additional refinements to the dredge template to allow for setbacks from the shore and bridge structures.

3.2 TARGETED DREDGE LOCATIONS AND ELEVATIONS

An overhead view of the project area with the respective evaluation zones is shown in Figure 2. Figure 3 provides the average TKN and TP concentrations for each core interval and transect collected from Chedoke Creek relative to the centerline profile view taken from the preliminary design. Line colors are assigned to the following core intervals in Figure 3:

- Orange – 0 to 15 cm
- Grey – 15 to 30 cm
- Yellow – 30 to 45 cm
- Green – 45 to 60 cm
- Black – 60 to 75 cm
- Brown – 75 to 90 cm

As shown in Figure 3, only transect CC-C05 produced sediment cores in all interval ranges. Most transects yielded cores with at least three intervals meaning the soft sediment was at least 45 cm thick.

Portions of Figure 3 shown in blue represent the upper (southern) third of the creek, referred to as Zone 1, which typically contains a thin 15-cm layer of organic sediments. Wood's 30% plans include a target dredge elevation of 73.7 m (IGLD) within this portion of the creek which would allow removal of some soft sediments although TP and TKN concentrations are relatively low between CC-C01 and CC-C08 compared to other portions of the creek. No removal of material would be necessary between CC-C08 and CC-C09 at elevation 73.7 m. Soft sediment between CC-C09 and CC-C10 is also relatively thin and low in nutrient concentration. Between CC-C11 and CC-C14, TP concentration increases although TKN concentration remains relatively consistent with the exception of the 30-45 cm interval which is slightly elevated at CC-C12 but then decreases with the next transect (CC-C13) downstream.

Portions of Figure 3 shown in yellow represent the approximate middle of Chedoke Creek, referred to as Zone 2, where soft sediment is at least 45 cm thick and nutrient concentrations are generally higher than the upper portion shown in blue. This portion includes transects beginning with CC-14 on the southern end through CC-C19 on the northern end.

Zone 3, represented by the green shaded portion of Figure 3, is located downstream of the bridge to Kay Drage Park and has soft sediment thickness of at least 60 cm with the exception of transect CC-C21 which had only 45 cm of soft sediment thickness. Total phosphorus and TKN concentrations are highest in this portion of Chedoke Creek. Transects between CC-C19 and CC-C20 have fairly consistent TP and TKN concentrations across all intervals. The 0-15 and 15-30 cm intervals have the highest TKN concentration at transects CC-C20 and CC-C-21. However, after the CC-C21 transect, the 45-60 cm interval has the highest TP concentration. The TKN concentration at the CC-C22 transect was about 30% higher for the 30-45 cm sediment interval than the 0-15 cm sediment interval. The TKN concentration in the 15-30 cm interval at the CC-C23 transect was approximately 4,000 ug/g or roughly double the concentration of the 0-15 cm interval. The 0-15, 15-30, 30-45 and 45-60 cm intervals between CC-C05 and CC-C26 contained TKN concentrations ranging from approximately 1,000 to 2,000 ug/g. The deepest interval collected from 60-75 cm at the CC-C25 transect had the highest TP and TKN concentrations at this location.

As shown in Figure 3, Wood recommends a reduced dredge elevation beginning with the southern end of Zone 3 at transect CC-C19 from 73.7 m to 73.4 m. This would allow removal of an average of approximately 70 cm of material from within this portion of the creek where nutrient concentrations are greatest and nutrient mass removal would be optimized.

Most of the nutrient mass within Chedoke Creek is found within the downstream portion beginning at transect CC-C15 and dredge operations should focus on this portion of the creek to maximize nutrient removal. Based on higher TP and TKN concentrations below the 30 cm sediment interval Wood recommends lowering the dredge target elevation downstream of transect CC-C19 by additional 30 cm (to 73.4 m) which would provide approximately 60 cm of sediment removal in the downstream portions of Chedoke Creek north of the Kay Drage bridge.

Data collected by Wood from the Princess Point embayment suggest that TP and TKN concentrations are similar to those found within Chedoke Creek for the upper 30 cm. As shown in Table 2, TP and TKN concentrations increase with increasing core interval. All cores collected from the Princess Point embayment yielded at least 45 cm of soft sediment and nine of the eleven cores yielded soft sediment down to the 60 cm interval. Only four cores along the northern edge of the embayment and one internal core yielded soft sediments down to 75 cm and only two of these had soft sediments extending to 90 cm.

Table 2 – Princess Point Sediment Intervals and Nutrient Concentration

Depth Interval (cm)	Average TKN Concentration (ug/g)	Average TP Concentration (ug/g)
00-15	1792	1013
15-30	1195	963
30-45	1224	1180
45-60	1345	1374
60-75	1892	1740
75-90	2060	2050

Wood recommends dredging the upper 30 cm of sediment within the embayment area (Zone 4) and an additional 30 cm of sediment within the yellow cross-hatched polygon identified in Figure 4 as Zone 5 which begins at the end of Chedoke Creek and extends north along the portion of the embayment east of the tree berm. This is roughly equal to a dredge target elevation of 73.7 m inside of the polygon shown in Figure 4 and 74.0 m for the remainder of the embayment.

Table 3 provides a summary of the five zones Wood evaluated for targeted dredging along with the area, targeted dredge elevation, targeted sediment thickness, volume, and estimated TKN and TP mass within each zone. Zone 1 provides the least potential mass removal of all the zones and provides the most significant construction challenges so dredging this area is not recommended. Zone 2 provides opportunity for some removal of material and should be reasonably accessible so Wood recommends dredging this zone. Zone 3 includes some of the most nutrient-enriched sediment within the creek and should be relatively easy to access. Zone 4, which covers a 30 cm dredge template over all of the Princess Point embayment, contains the most surface area and the largest corresponding pollutant mass. Zone 5 provides additional removal of relatively concentrated sources of TKN and TP and has the advantage of increasing water depth for additional restoration measures such as floating vegetated islands.

Based on the adjusted target dredge elevations within Zones 2 through 5, an estimated 68 tonnes of TP and 93 tonnes of TKN could be removed by dredging. This is 19 tonnes above the TP target mass of 47 tonnes but is still short of the 312-tonne TKN target by 219 tonnes.

Table 3 – Recommended Dredge Areas and Associated In-Situ TKN and TP Mass

Project Area	Description	Area (m ²)	Target Dredge Elevation (m IGLD)	Average Targeted Sediment Thickness (m)	Volume (m ³)	Average TKN Conc. (ug/g)	Estimated TKN Mass within Zone (tonnes)	Average TP Conc. (ug/g)	Estimated TP Mass within Zone (tonnes)	Dredge Rec.
Zone 1	CC-C01 to CC-C14	11,784	73.7	0.15	1,768	1,162	4	1,020	3	no
Zone 2	CC-C14 to CC-C19	7,437	73.7	0.45	3,347	1,180	7	1,067	6	yes
Zone 3	CC-C19 to CC-C26	12,211	73.4	0.60	7,327	1,641	22	1,251	17	yes
Zone 4	Princess Point Embayment	68,326	74.0	0.30	20,498	1,493	55	987	36	yes
Zone 5	Princess Point Channel	16,437	73.7	0.30	4,931	1,227	11	1,228	11	yes
Total of Rec. Zones					36,102		95		70	

4.0 SEDIMENT QUALITY COMPARISON TO CRITERIA

Parameter concentrations for all results obtained from the sampling locations shown in Figure 1 were compared to Provincial (Ontario Sediment Quality Guidelines (PSQG)) and Federal (CCME Sediment Quality Guidelines (CSQG)) criteria. These results and quality criteria comparisons are provided in Attachment A.

4.1 CHEDOKE CREEK

A summary of the Chedoke Creek sediment results ("CC" series of samples shown on Figure 1) and comparisons to the quality criteria are provided below and shown in Table A1.

- TKN was elevated above provincial severe effect limit (PSQG SEL) guidelines at varying sediment depths at stations CC-C15, -C21, -C22, and -C23 (Zones 2 and 3).
- Arsenic exceeded the federal probable effect limit (CSQG PEL) in only one sample (Zone 1, station CC-C07 0-15 cm).
- Cadmium concentrations were higher than both federal and provincial guidelines for several stations at varying sediment depths. Notably Zone 3, station CC-C26 at 46-60 cm sediment depth was 7 times the highest guideline (76 ug/g).
- Chromium exceeded provincial and federal criteria at one station, CC-C26 60-75 cm, in Zone 3.
- Several samples across transects and sediment depths had copper concentrations in Zones 2 and 3 that were elevated above provincial SEL guidelines. Station CC-C13 (30-45 cm), -C22 (60-75 cm), and -C26 (60-75 cm) also exceeded the federal PEL limit.
- Most, but not all samples collected had higher concentrations of lead than the federal PEL guideline, one sample from Zone 1 (CC-C11 15-30 cm; 260 ug/g) also exceeded the PSQG SEL criteria.
- Mercury concentrations exceeded federal guidelines for a few stations at varying sediment depths. Impacts seem to be greater at shallower depths (0-15 and 15-30 cm), where seven samples had exceedances greater than the PSQG SEL and CSQG PEL criteria.
- Nickel concentrations at stations CC-C25 and -C26 (45-60 cm) in Zone 3 were higher than the provincial SEL guideline.
- Numerous samples exceeded federal zinc concentration criteria but not provincial SEL, except at two stations CC-C25 and -C26 in Zone 3 at sediment depths of 60-75 and 45-60 cm, respectively.
- There were no obvious trends in exceedances between transect location (east, center, or west stations)

4.2 PRINCESS POINT EMBAYMENT

A summary of the Princess Point embayment sediment results ("PP" series of samples shown on Figure 1) and comparisons to the quality criteria are provided below and shown in Table A2. Stations PP-C01, PP-C02, PP-C04, PP-C05, PP-C06, and PP-C07 are located within Zone 5.

- Stations PP-C03, -C06 and -C11 had concentrations of cadmium that exceeded both the PSQG SEL and CSQG PEL at sediment depths of 45-60, 60-75, and 75-90 cm.
- Federal chromium guidelines were exceeded in few samples at 60-75 cm depth, at stations PP-C03 and -C11. Station PP-C11 also exceeded provincial SEL guidelines at 75-90 cm depth.
- Copper exceeded the provincial SEL criteria in six samples at stations PP-C03, -C09 and -C11 (45-60, 60-75 and 75-90 cm depth) and exceeded the federal CSQG PEL as well at PP-C11 (60-75 cm).
- Federal lead guidelines were exceeded for most samples at sediment depths greater than 30 cm.
- Federal criteria for mercury were exceeded in 12 samples at varying stations within cores of 0-15, 15-30, 45-60, 60-75 and 75-90 cm depths. Trends showed mercury exceedances to occur more frequently in deeper sediment.
- Station PP-C03 exceeded nickel provincial SEL criteria at 60-75 cm depth (79 µg/g).
- Concentrations of zinc exceeded the federal guidelines (PEL) for most samples in the 0-15 and 15-30 cm sediment cores and two samples at station PP-C11 also exceeded provincial SEL guidelines (60-75 and 75-90 cm depths).

4.3 COOTES PARADISE

A summary of the Cootes Paradise sediment results ("CP" series of samples shown on Figure 1) and comparisons to the quality criteria are provided below and shown in Table A3.

- Cadmium, lead and zinc concentrations exceeded CSQG PEL criteria in most samples for the 30-45 and 45-60 cm sediment cores.
- Station CP-C05 had concentrations of cadmium that exceeded both the PSQG SEL and CSQG PEL at sediment depths of 45-60, 60-75, and 75-90 cm. Station CP-C07 also exceeded both guidelines in the 60-75 cm core sample.
- Copper exceeded the provincial SEL criteria in two sample depths at station CP-C05 (60-75 and 75-90 cm).
- Federal criteria for mercury were exceeded in five samples at varying stations within cores of 45-60, 60-75 and 75-90 cm depths.
- Concentrations of zinc exceeded the federal guidelines (PEL) for most samples in the 0-15 and 15-30 cm sediment cores, except at one station (CP-C06 15-30 cm; 70 µg/g). No results exceeded provincial SEL guidelines.

4.4 UPSTREAM REFERENCE

Two locations were sampled to represent upgradient (upstream) sediment quality that was not subject to the CSO spill event. A summary of the upstream reference location sediment results and comparisons to the quality criteria are provided below and shown in Table A3.

- TKN concentration was greater than the PSQG SEL for one sample (CP-REF-1-45-60; 6320 µg/g)
- Zinc was greater than the CSQG PEL but not the PSQG SEL for one sample (CP-REF-2-30-45; 320 µg/g)

5.0 CONTAMINANT SUMMARY

Overall, contaminants of potential concern include cadmium, copper, lead, zinc and mercury, with deeper sediment samples (45+ cm) potentially more heavily impacted. Within Chedoke Creek, the recommended dredge template includes removal of most of the soft sediments north of transect CC-C14 within Zones 2 and 3 which would also remove most of the contaminated sediments discussed above. Within the Princess Point embayment, dredging the upper 30 cm within Zone 4 would leave sufficient cover to limit water column interaction with the more concentrated cadmium, chromium, nickel, and copper contamination beginning at 45 cm. Dredging the upper 30 cm within Zone 4 would also address zinc exceedances found throughout the sample area. However, lead and mercury exceedances were evident for most cores collected below 30 cm. With the exception of PP-C06 which contained elevated cadmium within the 45-90 cm intervals, most other contaminants identified below 60 cm were found outside of Zone 5 and indicates that Zone 5 may be suitable for removal of an additional 30 cm of material.

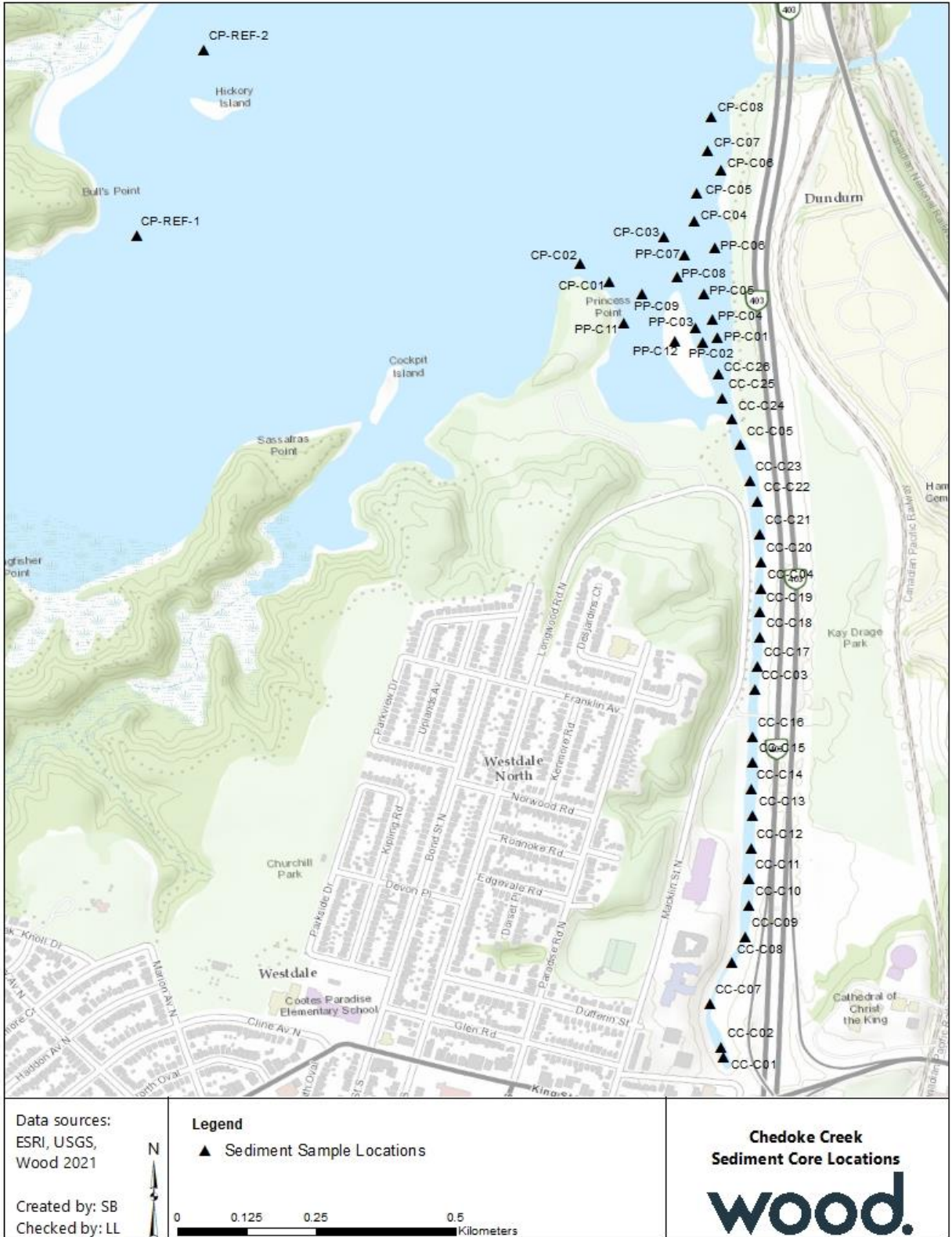


Figure 1. Chedoke Creek, Cootes Paradise, and Princess Point Sediment Sample Locations



Figure 2. Project Area Evaluation Zones

Figure 3. Chedoke Creek Centerline Profile View with Core Depth and Average Nutrient Concentration





Figure 4. Princess Point Embayment Evaluation Zone Detail

Attachment A
Sediment Analysis Results Tables

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C01				CC-C02				CC-07				CC-C08				CC-C09
Sample ID					4/8/21 14:05				4/8/21 13:40				4/8/21 10:40				4/8/21 8:30				4/9/21 9:10
Sampling Date and Time					4/8/21 14:05				4/8/21 13:40				4/8/21 10:40				4/8/21 8:30				4/9/21 9:10
PARAMETER	Units	Quality Criteria			PSQG				CSQG												
		O.Reg. 153/04 & LEL	SEL	PEL																	
PHYSICAL																					
Moisture	%				28	36	44	38	21	29	67	76	79	19	19	19	44	28	19	17	19
ANIONS & NUTRIENTS																					
Total Ammonia-N	ug/g				42	302	586	381	<20	47	<20	<20	<20	<20	<20	<20	<20	<20	26	<20	<20
Nitrogen (N)	%				0.081	0.16	0.25	0.18	0.025	0.14	0.34	0.3	0.36	0.025	0.042	0.047	0.17	0.08	0.03	0.034	0.034
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		805	1620	2480	1800	247	1400	3370	3000	3650	252	418	473	1650	803	298	339	570
Nitrite (N)	ug/g				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate (N)	ug/g				<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nitrate + Nitrite (N)	ug/g				<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
METALS																					
Acid Extractable Aluminum (Al)	ug/g				9500	9000	7700	9900	11000	12000	920	270	420	11000	11000	10000	9600	9400	11000	9400	8000
Acid Extractable Antimony (Sb)	ug/g				0.56	0.59	0.68	0.66	0.51	0.28	<0.20	<0.20	<0.20	0.43	0.42	0.43	0.86	0.59	<0.20	0.38	0.7
Acid Extractable Arsenic (As)	ug/g	6	33	17	4	3.9	5.8	6.9	5.1	4.3	20	11	7.4	4	4.7	4.1	5.2	7.1	4.8	4.4	4
Acid Extractable Barium (Ba)	ug/g				110	190	79	95	190	110	310	260	120	170	130	97	80	76	190	70	4
Acid Extractable Beryllium (Be)	ug/g				0.57	0.51	0.45	0.56	0.66	0.59	<0.20	<0.20	<0.20	0.59	0.61	0.6	0.55	0.5	0.55	0.51	0.42
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acid Extractable Boron (B)	ug/g				20	20	17	19	27	13	8.2	5.1	6.8	25	26	24	17	14	8.3	24	12
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	0.32	0.42	0.83	1	0.33	0.39	0.17	<0.10	0.33	0.37	0.28	0.28	0.57	0.47	0.11	0.48	0.23
Acid Extractable Calcium (Ca)	ug/g				61000	65000	66000	69000	61000	36000	300000	270000	240000	59000	59000	54000	67000	71000	87000	64000	66000
Acid Extractable Chromium (Cr)	ug/g	26	110	90	21	22	27	33	19	26	19	<1.0	22	12	26	21	18	22	18	22	15
Acid Extractable Cobalt (Co)	ug/g				8.9	8.5	8.4	9.1	10	9.7	2.1	0.99	0.95	9.8	9.9	9.8	8.7	8.6	11	9.3	7.1
Acid Extractable Copper (Cu)	ug/g	16	110	197	47	51	63	81	35	34	5	2.2	2.9	43	37	56	71	39	32	59	33
Acid Extractable Iron (Fe)	ug/g	2%	4%		25000	23000	21000	23000	30000	23000	21000	15000	16000	29000	29000	29000	23000	23000	25000	28000	18000
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	22	23	48	61	28	36	1.1	<1.0	1.2	14	46	20	36	23	12	42	20
Acid Extractable Magnesium (Mg)	ug/g				23000	27000	26000	25000	24000	13000	5600	4200	4700	23000	21000	21000	18000	14000	25000	25000	17000
Acid Extractable Manganese (Mn)	ug/g	460	1100		560	550	620	660	690	630	690	750	580	600	570	510	530	680	590	510	510
Acid Extractable Molybdenum (Mo)	ug/g				0.89	1.2	1.1	1.1	1	<0.50	4.4	4.1	0.92	4.1	0.92	1.3	1.1	<0.50	0.92	0.92	0.74
Acid Extractable Nickel (Ni)	ug/g	16	75		22	22	21	24	26	22	3	1.4	1.8	24	25	22	20	23	22	22	17
Acid Extractable Phosphorus (P)	ug/g				880	1000	1100	1100	950	970	320	190	240	800	870	870	730	780	930	780	780
Acid Extractable Potassium (K)	ug/g				1800	1900	1500	1900	2500	1800	280	<200	<200	2400	2600	2400	1900	2000	2400	1600	1600
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	0.5	<0.50	<0.50	<0.50	1.5	1.2	1.4	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<0.50
Acid Extractable Silver (Ag)	ug/g				<0.20	<0.20	0.28	0.31	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.4	<0.20	<0.20	<0.20	<0.20
Acid Extractable Sodium (Na)	ug/g				450	390	430	430	450	510	450	340	420	270	310	300	290	180	200	280	560
Acid Extractable Strontium (Sr)	ug/g				110	120	110	120	130	120	260	200	180	99	110	83	120	130	160	97	140
Acid Extractable Thallium (Tl)	ug/g				0.11	0.12	0.15	0.18	0.098	0.11	<0.050	<0.050	<0.050	0.097	0.11	0.11	0.19	0.15	0.11	0.11	0.096
Acid Extractable Tin (Sn)	ug/g				1.2	1.5	2.5	2.8	1	3.7	<1.0	<1.0	1.7	1.6	1.5	2.7	1.6	<1.0	1.2	2.8	2.8
Acid Extractable Uranium (U)	ug/g				0.6	0.62	0.65	0.57	0.61	0.53	24	21	29	0.62	0.62	0.61	0.89	0.91	0.61	0.56	0.52
Acid Extractable Vanadium (V)	ug/g				22	21	21	24	25	25	<5.0	<5.0	<5.0	25	25	23	23	24	25	20	20
Acid Extractable Zinc (Zn)	ug/g	120	820	315	230	240	350	410	200	150	39	11	13	220	240	190	380	220	66	270	130
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	<0.050	0.079	0.096	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.17	0.072	<0.050	<0.050	0.053
PAHs																					
Acenaphthene	ug/g				88.9	0.16	0.053	0.16	0.16	<0.050	<0.050	<0.015	<0.020	<0.020	0.075	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050
Acenaphthylene	ug/g				128	0.053	<0.050	<0.10	<0.10	<0.050	<0.050	<0.015	<0.020	<0.020	<0.050	0.063	<0.050	<0.10	<0.050	<0.050	<0.050
Anthracene	ug/g	0.22	370	245	0.31	0.09	0.25	0.29	<0.050	0.066	<0.015	<0.020	<0.020	0.14	0.25	<0.050	<0.10	<0.050	<0.050	<0.050	0.066
Benzo(a)anthracene	ug/g	0.32	1480	385	1	0.55	1.1	1.2	<0.050	0.17	<0.015	<0.020	<0.020	0.33	0.99	0.16	0.41	0.21	0.0064	0.13	0.27
Benzo(a)pyrene	ug/g	0.37	1440	782	0.89	0.66	1.1	1.3	<0.050	0.16	0.019	<0.020	<0.020	0.31	0.96	0.17	0.47	0.23	0.0071	0.12	0.28
Benzo(b)fluoranthene	ug/g				1.3	1	1.6	1.8	0.031	0.23	0.031	<0.020	0.47	1.4	0.27	0.74	0.38	0.014	0.16	0.44	0.44
Benzo(g,h,i)perylene	ug/g	0.17	320		0.6	0.51	0.81	0.91	<0.050	0.12	0.019	<0.020	<0.020	0.24	0.87	0.14	0.4	0.21	0.0091	0.083	0.19
Benzo(k)fluoranthene	ug/g	0.24	1340		0.47	0.28	0.59	0.67	<0.050	0.082	<0.015	<0.020	<0.020	0.16	0.48	0.082	0.21	0.11	<0.0050	0.06	0.15
Chrysene	ug/g	0.34	460	862	1.1	0.76	1.2	1.5	<0.050	0.16	0.017	<0.020	<0.020	0.34	1	0.2	0.46	0.22	0.011	0.13	0.31
Dibenz(a,h)anthracene	ug/g	0.06	130	135	0.16	0.087	0.18	0.2	<0.050	<0.050	<0.015	<0.020	<0.020	0.053	0.19	<0.050	<0.10	<0.050	<0.0050	<0.050	<0.050
Fluoranthene	ug/g	0.75	1020	2355	3.5	2.1	3.6	3.8	0.1	0.45	0.043	<0.020	<0.020	1.3	2.8	0.68	1.5	0.74	0.027	0.34	0.87
Fluorene	ug/g	0.19	160	144	0.15	0.067	0.19	0.19	<0.015	<0.050	<0.015	<0.020	<0.020	0.085	0.054	<0.050	<0.10	<0.050	<0.0050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.66	0.53	0.88	0.98	<0.050	0.13	0.02	<0.020	<0.020	0.25	0.84	0.14	0.41	0.21	0.0061	0.089	0.2
Methylnaphthalene, 2-(1-)	ug/g			201	<0.071	<0.071	<0.14	<0.14	<0.071	<0.071	<0.021	<0.028	<0.028	<0.071	<0.071	<0.071	<0.14	<0.071	<0.0071	<0.071	<0.071
1-Methylnaphthalene	ug/g				<0.050	<0.050	<0.10	<0.10	<0.050	<0.050	<0.015	<0.020	<0.020	<0.050	<0.050	<0.050	<0.10	<0.050	<0.0050	<0.050	<0.050
2-Methylnaphthalene	ug/g				0.066	<0.050	0.11	<0.10	<0.050	<0.050	<0.015	<0.020	<0.020	<0.050	<0.050	<0.050	<0.10	<0.050	<0.0050	<0.050	<0.050
N																					

Table A1: Chedoke Creek Sediment Sample Analytical Results

PARAMETER	Units	Station				CC-C10					CC-C11					CC-C12					CC-C13						
		Sample ID				CC-C10-CENTRE-0-15	CC-C10-EAST-0-15	CC-C11-WEST-0-15	CC-C11-WEST-15-30	CC-C11-CENTRE-0-15	CC-C11-CENTRE-15-30	CC-C11-CENTRE-30-45	CC-C11-CENTRE-45-60	CC-C11-EAST-0-15	CC-C12WEST-0-15	CC-C12WEST-15-30	CC-C12WEST-30-50	CC-C12CENTRE-0-15	CC-C12EAST-0-15	CC-C13WEST-0-15	CC-C13WEST-15-30	CC-C13WEST-30-45	CC-C13CENTRE-0-15	CC-C13CENTRE-15-30			
		Sampling Date and Time				4/9/21 9:50	4/9/21 10:10	4/9/21 10:45	4/9/21 10:45	4/9/21 12:00	4/9/21 12:00	4/9/21 12:00	4/9/21 12:00	4/9/21 13:12	4/7/21 12:25	4/7/21 12:25	4/7/21 12:25	4/7/21 12:10	4/7/21 11:45	4/7/21 17:10	4/7/21 17:10	4/7/21 17:10	4/7/21 16:30	4/7/21 16:30			
Quality Criteria		PSQG		CSQG																							
O.Reg. 153/04 & LEL	SEL	PEL																									
PHYSICAL																											
Moisture	%				20	18	44	22	16	19	29	30	17	45	20	43	23	18	42	20	23	16	15				
ANIONS & NUTRIENTS																											
Total Ammonia-N	ug/g				<20	<20	167	129	<20	<20	<20	<20	<20	139	37	98	38	74	207	87	72	<20	48				
Nitrogen (N)	%													0.2	0.072	0.24	0.068	0.058	0.21	0.067	0.083	0.03	0.03				
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		269	241	2230	754	344	258	801	919	269	1960	715	2380	677	578	2130	665	832	302	303				
Nitrite (N)	ug/g													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				
Nitrate (N)	ug/g													<2	<2	<2	<2	<2	<2	<2	<2	<2	<2				
Nitrate + Nitrite (N)	ug/g													<3	<3	<3	<3	<3	<3	<3	<3	<3	<3				
METALS																											
Acid Extractable Aluminum (Al)	ug/g				9000	8400	10000	7400	8300	8800	12000	16000	8700	10000	11000	14000	7700	8900	9600	9700	12000	8600	8900				
Acid Extractable Antimony (Sb)	ug/g				3.4	0.46	0.9	0.63	0.38	1.2	5.1	2	1.2	1	3.5	5.6	1	1.5	1.2	7.7	2.9	0.45	2.9				
Acid Extractable Arsenic (As)	ug/g	6	33	17	5.6	6.9	4.5	4.1	4.4	6.5	6.8	5.3	5.5	4.6	6.6	5	7.4	5.1	6.3	7.9	4.5	5.7					
Acid Extractable Barium (Ba)	ug/g				130	86	120	230	92	140	230	190	87	120	160	250	120	120	110	160	210	110	110				
Acid Extractable Beryllium (Be)	ug/g				0.54	0.48	0.55	0.44	0.48	0.56	0.71	0.82	0.45	0.57	0.62	0.71	0.5	0.5	0.56	0.68	0.48	0.49					
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	1.4	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	1.3	1.1	<1.0	<1.0					
Acid Extractable Boron (B)	ug/g				20	17	23	18	18	20	32	16	17	22	33	41	22	22	21	22	27	22	25				
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	0.67	0.61	0.65	0.45	0.65	1.4	25	13	0.83	1.4	37	1.7	3.6	0.82	4.3	22	0.58	4.9					
Acid Extractable Calcium (Ca)	ug/g				71000	79000	66000	72000	71000	66000	48000	20000	65000	64000	53000	36000	63000	57000	59000	62000	57000	67000	68000				
Acid Extractable Chromium (Cr)	ug/g	26	110	90	27	21	27	22	31	21	39	21	33	19	28	38	44	33	25	30	33	46	26				
Acid Extractable Cobalt (Co)	ug/g				8.7	8	8.5	6.8	7.6	10	16	13	7.6	8.7	13	17	8.7	8.6	8.9	9.5	14	8.4	11				
Acid Extractable Copper (Cu)	ug/g	16	110	197	130	58	84	65	59	89	140	62	40	90	120	100	46	95	85	100	200	52	93				
Acid Extractable Iron (Fe)	ug/g	2%	4%		29000	23000	23000	21000	25000	30000	25000	21000	26000	25000	24000	27000	26000	24000	29000	25000	25000	24000					
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	74	21	40	31	50	260	120	59	94	38	110	95	120	140	52	180	170	37	180				
Acid Extractable Magnesium (Mg)	ug/g				22000	24000	25000	23000	25000	20000	14000	23000	7700	17000	25000	16000	11000	22000	18000	24000	21000	17000	23000				
Acid Extractable Manganese (Mn)	ug/g	460	1100		630	600	540	530	520	690	570	350	580	540	600	490	580	580	540	580	670	580	710				
Acid Extractable Molybdenum (Mo)	ug/g				1	0.81	1.2	0.87	0.92	1	0.88	0.51	0.95	1.4	1	0.79	2.3	1.1	1.5	1.6	1.5	0.81	0.92				
Acid Extractable Nickel (Ni)	ug/g	16	75		21	19	22	18	19	27	51	41	19	25	39	59	33	24	28	44	21	42					
Acid Extractable Phosphorus (P)	ug/g				870	780	1200	1400	910	960	1000	960	1300	1300	1200	980	1100	1400	1900	1400	1100	980					
Acid Extractable Potassium (K)	ug/g				2100	1900	2200	1700	1700	2000	2200	2200	1500	2200	2200	2100	1700	1800	2000	2200	1900	1600					
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
Acid Extractable Silver (Ag)	ug/g				4.4	0.22	0.51	<0.20	<0.20	0.56	3.6	1.3	2.8	1	3.1	5.9	3.8	1.1	2.7	6	<0.20	0.95					
Acid Extractable Sodium (Na)	ug/g				670	290	370	180	270	200	250	170	320	470	350	240	310	360	250	290	260	260					
Acid Extractable Strontium (Sr)	ug/g				96	100	120	88	95	120	88	78	120	93	78	91	96	120	110	110	100	94					
Acid Extractable Thallium (Tl)	ug/g				0.1	0.098	0.18	0.11	0.1	0.094	0.14	0.14	0.099	0.2	0.16	0.15	0.11	0.12	0.21	0.17	0.2	0.11	0.097				
Acid Extractable Tin (Sn)	ug/g				11	4	4.6	4.8	2	4.9	20	4.8	9.2	2	4.2	24	20	6.6	19	26	4.1	8.5					
Acid Extractable Uranium (U)	ug/g				0.59	0.7	0.68	0.6	0.53	0.53	0.73	0.83	0.52	0.66	0.72	0.78	0.54	0.54	0.7	0.74	0.58	0.56					
Acid Extractable Vanadium (V)	ug/g				26	22	24	21	24	25	27	21	29	24	25	28	24	25	24	28	23	22					
Acid Extractable Zinc (Zn)	ug/g	120	820	315	340	270	340	230	260	250	400	210	210	370	360	370	230	290	410	360	510	220	250				
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	11	0.1	0.1	0.051	0.49	1	0.58	0.16	0.061	0.67	0.63	0.33	19	0.21	0.36	1.4	0.74	0.092	0.27				
PAHs																											
Acenaphthene	ug/g			88.9	0.06	<0.050	<0.10	<0.050	<0.050	0.062	0.1	0.16	<0.050	<0.10	0.43	0.15	0.05	<0.050	<0.10	0.088	0.4	<0.050	0.076				
Acenaphthylene	ug/g			128	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.051	<0.050	<0.010	0.0079	<0.050	<0.10	<0.050	0.055	<0.050	<0.050				
Anthracene	ug/g	0.22	370	245	0.085	<0.050	0.15	0.091	<0.050	0.077	0.15	0.26	0.057	0.11	0.35	0.047	0.052	<0.050	<0.10	0.13	0.32	<0.050	0.091				
Benzo(a)anthracene	ug/g	0.32	1480	385	0.37	<0.050	0.61	0.34	<0.050	0.12	0.38	0.98	<0.050	0.11	0.56	0.098	0.14	0.11	0.45	0.35	1.2	0.061	0.2				
Benzo(a)pyrene	ug/g	0.37	1440	782	0.36	<0.050	0.78	0.38	<0.050	0.09	0.35	1.1	0.096	0.67	1.2	0.084	0.13	0.17	0.54	0.38	0.99	0.056	0.18				
Benzo(b)fluoranthene	ug/g				0.54	<0.050	1.3	0.6	0.93	0.13	0.52	1.5	0.14	0.96	1.6	0.11	0.18	0.25	0.6	1.4	0.085	0.24					
Benzo(g,h,i)perylene	ug/g	0.17	320		0.27	<0.050	0.68	0.32	0.05	<0.061	0.25	0.7	0.068	0.5	0.62	0.057	0.086	0.16	0.44	0.26	0.58	<0.050	0.12				
Benzo(k)fluoranthene	ug/g	0.24	1340		0.19	<0.050	0.43	0.19	<0.050	0.052	<0.050	0.53	0.054	0.33	0.63	0.042	0.054	0.079	0.24	0.17	0.54	<0.050	0.077				
Chrysene	ug/g	0.34	460	862	0.36	<0.050	0.89	0.38	0.064	0.11	0.34	0.78	0.099	0.69	1.6	0.089	0.15	0.14	0.56	0.36	1.4	0.084	0.21				
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	0.056	<0.050	0.12	0.053	<0.050	0.055	0.22	<0.050	<0														

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C14										CC-C15							
Sample ID					CC-C13CENTRE-30-45	CC-C13EAST-0-15	CC-C13EAST-15-30	CC-C13EAST-30-50	CC-C14-WEST-0-15	CC-C14-WEST-15-30	CC-C14-WEST-30-45	CC-C14-CENTRE-0-15	CC-C14-CENTRE-15-30	CC-C14-CENTRE-30-45	CC-C14-EAST-0-15	CC-C14-EAST-15-30	CC-C14-EAST-30-45	CC-C15-WEST-0-15	CC-C15-WEST-15-30	CC-C15-WEST-30-45	CC-C15-CENTRE-0-15	CC-C15-CENTRE-15-30
Sampling Date and Time					4/7/21 16:30	4/7/21 15:00	4/7/21 15:00	4/7/21 15:00	4/19/21 11:00	4/19/21 11:00	4/19/21 11:00	4/19/21 10:30	4/19/21 10:30	4/19/21 10:30	4/19/21 10:00	4/19/21 10:00	4/19/21 10:00	4/12/21 11:00	4/12/21 11:00	4/12/21 11:00	4/12/21 10:30	4/12/21 10:30
PARAMETER	Units	Quality Criteria			PSQG					CSQG												
		O.Reg. 153/04 & LEL	SEL	PEL																		
PHYSICAL																						
Moisture	%				16	16	21	42	44	18	18	17	19	18	26	24	38	53	54	24	20	18
ANIONS & NUTRIENTS																						
Total Ammonia-N	ug/g				59	<20	36	141	91	<20	<20	21	47	43	23	67	146	347	247	<20	24	<20
Nitrogen (N)	%				0.052	0.03	0.064	0.28	0.25	0.036	0.021	0.034	0.028	0.025	0.044	0.086	0.22					
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		521	304	640	2780	2490	360	205	336	278	255	440	858	2200	4080	3980	683	553	286
Nitrite (N)	ug/g				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate (N)	ug/g				<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nitrate + Nitrite (N)	ug/g				<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
METALS																						
Acid Extractable Aluminum (Al)	ug/g				8400	7000	9800	13000	12000	9700	11000	8100	7300	8800	7500	13000	18000	11000	9800	12000	8800	10000
Acid Extractable Antimony (Sb)	ug/g				2.6	5.4	3.3	5.2	1.4	0.91	1.7	0.36	0.41	1.7	3.4	2.5	1.5	1.8	2.1	0.54	0.56	
Acid Extractable Arsenic (As)	ug/g	6	33	17	5.9	4.6	7.1	8.4	5.1	4.3	6.4	3.2	4.2	5.4	9.6	8.8	5.3	5	7.4	3.2	5	
Acid Extractable Barium (Ba)	ug/g				160	110	150	280	120	92	140	100	150	100	190	230	120	120	180	110	120	
Acid Extractable Beryllium (Be)	ug/g				0.52	0.44	0.54	0.67	0.55	0.5	0.57	0.46	0.37	0.48	0.38	0.62	0.76	0.59	0.53	0.64	0.51	0.6
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	<1.0	1.7	1.3	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	1.4	<1.0	<1.0	<1.0	<1.0
Acid Extractable Boron (B)	ug/g				26	18	27	38	20	19	21	16	19	16	25	21	23	20	17	22	23	
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	10	0.42	19	44	0.97	0.65	0.72	1.1	0.72	28	13	0.79	0.78	2	0.38	0.59		
Acid Extractable Calcium (Ca)	ug/g				65000	60000	58000	50000	66000	72000	67000	74000	67000	71000	64000	57000	44000	64000	66000	67000	72000	69000
Acid Extractable Chromium (Cr)	ug/g	26	110	90	30	22	35	66	33	26	28	20	29	23	46	34	33	29	35	21	26	
Acid Extractable Cobalt (Co)	ug/g				11	7	12	17	8.8	8.4	11	7	6.9	8.3	6.9	15	14	9.1	8.6	10	7.5	9.5
Acid Extractable Copper (Cu)	ug/g	16	110	197	98	49	87	150	99	63	110	59	61	99	97	140	69	110	120	55	69	
Acid Extractable Iron (Fe)	ug/g	2%	4%		23000	26000	24000	24000	25000	27000	31000	22000	24000	26000	24000	31000	32000	25000	25000	27000	23000	28000
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	100	170	110	180	55	120	140	44	92	120	230	250	110	52	90	190	91	
Acid Extractable Magnesium (Mg)	ug/g				22000	20000	16000	13000	26000	24000	20000	25000	20000	24000	19000	13000	12000	24000	26000	23000	26000	22000
Acid Extractable Manganese (Mn)	ug/g	460	1100		650	530	650	610	550	550	640	500	540	630	490	720	700	540	530	570	520	640
Acid Extractable Molybdenum (Mo)	ug/g				1	0.9	0.92	1.3	1.5	1.2	1.3	0.83	0.77	1.1	1.5	1.6	1	1.8	1.6	1.8	0.8	0.94
Acid Extractable Nickel (Ni)	ug/g	16	75		32	18	42	61	25	22	29	17	17	21	22	50	39	25	24	29	21	23
Acid Extractable Phosphorus (P)	ug/g				1300	1100	1300	2200	1500	960	1000	950	940	1000	950	1500	1200	1600	1500	1100	880	920
Acid Extractable Potassium (K)	ug/g				1600	1600	1600	2000	2100	2000	2000	2000	1500	1800	1500	1800	2300	2200	1900	1800	2200	2300
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	<0.50	0.54	0.68	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	1.4	0.67	0.62	<0.50	<0.50	<0.50
Acid Extractable Silver (Ag)	ug/g				2.7	0.28	2.3	9.8	0.88	<0.20	0.54	<0.20	<0.20	0.23	0.32	4.1	1.6	0.73	0.67	0.95	1.6	<0.20
Acid Extractable Sodium (Na)	ug/g				270	270	330	260	390	250	250	250	200	240	370	580	380	430	420	260	220	190
Acid Extractable Strontium (Sr)	ug/g				95	100	96	100	120	110	98	110	110	98	110	110	93	120	120	130	100	95
Acid Extractable Thallium (Tl)	ug/g				0.13	0.11	0.12	0.17	0.21	0.13	0.15	0.11	0.07	0.098	0.13	0.17	0.22	0.22	0.2	0.22	0.14	0.12
Acid Extractable Tin (Sn)	ug/g				12	22	30	33	8.5	31	40	33	40	31	22	5.3	33	75	33	75	1.9	30
Acid Extractable Uranium (U)	ug/g				0.75	0.55	0.97	0.75	0.78	0.69	0.66	0.58	0.48	0.49	0.53	0.65	0.6	0.79	0.77	0.61	0.6	0.57
Acid Extractable Vanadium (V)	ug/g				22	26	23	28	24	21	24	20	21	24	20	27	31	25	24	27	20	24
Acid Extractable Zinc (Zn)	ug/g	120	820	315	320	190	320	580	430	270	320	220	280	270	300	570	410	430	430	510	210	240
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.36	<0.050	0.45	1	0.26	0.059	0.057	<0.050	0.18	0.62	1.7	0.23	0.31	0.22	0.66	0.34	0.17	
PAHs																						
Acenaphthene	ug/g			88.9	0.067	0.0074	0.18	0.58	<0.10	<0.050	<0.050	0.049	0.82	0.043	0.026	0.17	0.09	<0.10	<0.10	0.23	<0.050	<0.050
Acenaphthylene	ug/g			128	<0.0050	<0.0050	<0.050	<0.10	<0.10	<0.050	<0.050	<0.050	<0.0050	<0.0050	0.013	<0.050	0.022	<0.10	<0.10	<0.10	<0.050	<0.050
Anthracene	ug/g	0.22	370	245	0.092	0.017	0.24	0.45	0.25	0.058	0.25	<0.050	0.11	1.9	0.061	0.053	0.25	0.14	0.12	0.47	0.065	<0.050
Benzo(a)anthracene	ug/g	0.32	1480	385	0.23	0.065	0.64	0.98	0.87	0.2	0.088	0.25	2.3	0.021	0.15	0.62	0.31	0.79	0.66	0.77	0.33	0.054
Benzo(a)pyrene	ug/g	0.37	1440	782	0.22	0.063	0.48	0.89	1	0.19	0.098	0.22	1.3	0.22	0.16	0.62	0.3	0.99	0.83	0.63	0.34	0.062
Benzo(b)fluoranthene	ug/g				0.27	0.094	0.62	1.3	1.6	0.29	0.15	0.23	0.31	0.15	0.25	0.95	0.46	1.7	1.5	0.93	0.54	0.11
Benzo(g,h,i)perylene	ug/g	0.17	320		0.13	0.045	0.25	0.53	0.95	0.15	0.096	0.17	0.55	0.11	0.15	0.49	0.28	0.91	0.8	0.42	0.26	<0.050
Benzo(k)fluoranthene	ug/g	0.24	1340		0.099	0.026	0.38	0.55	0.55	0.099	<0.050	0.11	0.64	0.16	0.084	0.3	0.57	0.46	0.34	0.19	<0.050	
Chrysene	ug/g	0.34	460	862	0.23	0.068	0.55	0.95	1	0.22	0.11	0.27	1.9	0.23	0.18	0.68	0.31	1.1	0.83	0.67	0.34	0.069
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	0.034	0.01	0.076	0.14	0.2	<0.050	0.043	<0.050	0.036	0.04	0.036	0.12	0.076	0.15	0.15	0.099	<0.050	<0.050
Fluoranthene	ug/g	0.75	1020	2355	0.68	0.25	1.9	3	3.3	0.67	0.35	0.89	5.3	0.74	0.62	2.3	0.87	2.9	2.5	2.4	1.1	0.15
Fluorene	ug/g	0.19	160	144	0.063	0.0051	0.18	0.55	<0.10	<0.050	<0.050	0.054	0.98	0.032	0.023	0.22	0.11	<0.10	<0.10	0.25	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.15	0.049	0.3	0.61	0.96	0.16	0.084	0.18	0.67	0.19	0.16	0.53	0.28	0.83	0.73	0.43	0.27	<0.050
Methylnaphthalene, 2-(1-)	ug/g			201	0.049	<0.0071	<0.071	0.69	<0.14	<0.071	<0.071	0.019	0.1	<0.0071	0.015	0.12	0.071					
1-Methylnaphthalene	ug/g																					

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C16												CC-C03							
Sample ID					CC-C15-EAST-0-15	CC-C15-EAST-15-30	CC-C15-EAST-30-45	CC-C15-EAST-45-60	CC-C16-WEST-0-15	CC-C16-WEST-15-30	CC-C16-CENTRE-0-15	CC-C16-CENTRE-15-30	CC-C16-CENTRE-30-45	CC-C16-CENTRE-45-60	CC-C16-EAST-0-15	CC-C16-EAST-15-30	CC-C03-WEST-0-15	CC-C03-WEST-15-30	CC-C03-WEST-30-45	CC-C03-CENTRE-0-15	CC-C03-CENTRE-15-30			
Sampling Date and Time					4/9/21 14:00	4/9/21 14:00	4/9/21 14:00	4/9/21 14:00	4/12/21 14:30	4/12/21 14:30	4/12/21 13:30	4/12/21 13:30	4/12/21 13:30	4/12/21 13:30	4/12/21 15:30	4/12/21 15:30	4/13/21 11:30	4/13/21 11:30	4/13/21 11:30	4/13/21 10:30	4/13/21 10:30			
Quality Criteria		PSQG			CSQG																			
PARAMETER	Units	O.Reg. 153/04 & LEL	SEL	PEL																				
PHYSICAL																								
Moisture	%				20	31	36	62	50	37	26	23	29	32	28	24	56	27	25	21	21			
ANIONS & NUTRIENTS																								
Total Ammonia-N	ug/g				<20	46	56	<20	37	<20	34	39	88	89	<20	34	425	85	69	<20	40			
Nitrogen (N)	%																							
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		506	1570	1730	7260	3060	1410	631	349	778	1300	961	558	3800	753	613	388	422			
Nitrite (N)	ug/g																							
Nitrate (N)	ug/g																							
Nitrate + Nitrite (N)	ug/g																							
METALS																								
Acid Extractable Aluminum (Al)	ug/g				8200	9300	10000	10000	10000	9700	8400	8900	10000	13000	8100	11000	12000	7200	8200	7800	7800			
Acid Extractable Antimony (Sb)	ug/g				1.6	1.2	1.9	2.8	1.3	1.9	0.58	0.62	4.1	4.6	0.85	3.6	1.4	0.83	1.5	0.56	0.94			
Acid Extractable Arsenic (As)	ug/g	6	33	17	6.2	4.2	4.7	6.3	5.2	5.4	3.3	4.5	6.3	4.2	7.6	5.4	4.2	3.6	3.1	4.6	4.6			
Acid Extractable Barium (Ba)	ug/g				110	100	120	180	120	91	89	100	130	230	8	170	120	83	76	89	95			
Acid Extractable Beryllium (Be)	ug/g				0.48	0.47	0.54	0.51	0.55	0.53	0.48	0.52	0.64	0.44	0.56	0.61	0.41	0.42	0.44	0.44	0.45			
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	<1.0	<1.0	1.4	1.4	<1.0	<1.0	1.3	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<1.0	<1.0			
Acid Extractable Boron (B)	ug/g				17	13	17	26	20	17	19	22	30	39	26	20	13	9.7	17	13	13			
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	1.1	3.8	9.6	6.1	0.81	0.93	0.45	0.89	11	32	0.65	20	0.87	1.4	8.3	0.34	3.4			
Acid Extractable Calcium (Ca)	ug/g				64000	46000	49000	47000	65000	70000	69000	74000	65000	59000	69000	64000	64000	65000	63000	70000	69000			
Acid Extractable Chromium (Cr)	ug/g	26	110	90	33	19	24	24	33	30	23	25	30	53	25	40	35	27	20	22	23			
Acid Extractable Cobalt (Co)	ug/g				8.1	7.8	9.6	9.4	9.1	8.8	7.4	8.7	13	16	7.3	13	9.5	7.2	8.3	6.6	8.3			
Acid Extractable Copper (Cu)	ug/g	16	110	197	98	47	55	100	100	75	47	46	89	140	55	140	130	87	46	49	52			
Acid Extractable Iron (Fe)	ug/g	2%	4%		27000	20000	22000	22000	24000	23000	22000	26000	24000	26000	22000	28000	25000	22000	19000	21000	22000			
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	140	54	68	170	41	120	50	65	110	180	43	120	49	76	42	80	92			
Acid Extractable Magnesium (Mg)	ug/g				17000	9100	8800	13000	24000	23000	23000	26000	18000	15000	21000	17000	24000	19000	10000	23000	16000			
Acid Extractable Manganese (Mn)	ug/g	460	1100		550	530	590	420	520	500	510	590	740	500	650	530	470	570	490	540	540			
Acid Extractable Molybdenum (Mo)	ug/g				2	0.82	0.7	1.3	1.8	1.3	1	0.92	1.2	0.96	4.4	2.2	1.5	0.52	0.96	0.7	0.7			
Acid Extractable Nickel (Ni)	ug/g	16	75		26	22	29	36	25	23	20	22	35	50	18	43	26	19	22	18	22			
Acid Extractable Phosphorus (P)	ug/g				1100	920	1100	910	1400	1200	910	820	1000	1200	1000	1200	850	1700	870	830	1000			
Acid Extractable Potassium (K)	ug/g				1600	1500	1600	1600	1900	1700	1900	1900	2200	1700	2100	2000	1300	1400	1700	1400	1400			
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	<0.50	0.56	0.65	0.51	0.52	<0.50	<0.50	0.52	<0.50	0.76	<0.50	<0.50	<0.50	<0.50	<0.50			
Acid Extractable Silver (Ag)	ug/g				0.4	0.88	1.1	1.1	0.7	0.47	0.23	0.65	2.8	6.5	0.29	2.5	0.99	0.33	0.92	<0.20	0.63			
Acid Extractable Sodium (Na)	ug/g				300	280	300	510	510	410	320	380	560	740	370	510	560	140	250	250	250			
Acid Extractable Strontium (Sr)	ug/g				110	82	94	94	120	120	110	120	110	120	120	130	100	110	100	100	120			
Acid Extractable Thallium (Tl)	ug/g				0.13	0.1	0.12	0.14	0.2	0.19	0.12	0.12	0.13	0.18	0.14	0.17	0.27	0.16	0.11	0.13	0.1			
Acid Extractable Tin (Sn)	ug/g				72	32	12	21	5	4.3	3	9	12	26	11	110	5.5	4.9	5.7	5.7	11			
Acid Extractable Uranium (U)	ug/g				0.56	0.49	0.57	0.7	0.77	0.76	0.64	0.66	0.56	0.66	0.6	0.67	0.83	0.59	0.5	0.58	0.55			
Acid Extractable Vanadium (V)	ug/g				24	23	25	22	25	25	19	22	23	29	22	27	21	23	21	21	21			
Acid Extractable Zinc (Zn)	ug/g	120	820	315	280	160	230	320	430	360	200	250	270	540	260	470	520	280	170	180	200			
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.13	0.12	0.17	0.23	0.18	0.5	0.064	3.8	0.34	0.66	0.1	0.33	0.22	0.082	0.085	<0.050	0.11			
PAHs																								
Acenaphthene	ug/g			88.9	0.069	0.47	0.49	0.46	<0.10	0.051	0.074	<0.050	0.16	0.25	0.09	0.023	<0.10	<0.050	<0.050	<0.050	<0.050			
Acenaphthylene	ug/g			128	<0.050	<0.050	<0.050	<0.15	<0.10	<0.050	<0.050	<0.050	<0.20	<0.20	<0.050	0.0057	<0.10	<0.050	<0.050	<0.050	<0.050			
Anthracene	ug/g	0.22	370	245	<0.050	1.1	0.26	0.69	0.14	0.1	0.13	<0.050	0.2	0.37	0.18	0.037	0.17	<0.050	0.092	0.092	<0.050			
Benzo(a)anthracene	ug/g	0.32	1480	385	0.1	0.43	0.48	0.93	0.81	0.62	0.25	0.12	0.52	0.94	0.44	0.09	0.7	0.23	0.16	0.29	0.11			
Benzo(a)pyrene	ug/g	0.37	1440	782	0.098	0.28	0.38	0.78	1	0.75	0.2	0.12	0.51	0.89	0.43	0.087	0.86	0.26	0.15	0.25	0.1			
Benzo(b)fluoranthene	ug/g				0.16	0.41	0.55	1.1	1.8	1.3	0.32	0.19	0.68	1.4	0.68	0.14	0.37	0.46	0.23	0.35	0.16			
Benzo(g,h,i)perylene	ug/g	0.17	320		0.073	0.23	0.23	0.38	0.98	0.69	0.11	0.09	0.37	0.66	0.33	0.071	0.84	0.24	0.12	0.17	0.08			
Benzo(k)fluoranthene	ug/g	0.24	1340		0.056	0.15	0.21	0.39	0.61	0.44	0.11	0.065	0.28	0.48	0.24	0.046	0.52	0.16	0.091	0.12	<0.050			
Chrysene	ug/g	0.34	460	862	0.11	0.4	0.42	0.87	1.1	0.67	0.27	0.15	0.5	0.95	0.42	0.097	0.98	0.26	0.12	0.3	0.12			
Dibenz(a,h)anthracene	ug/g	0.06	130	135	<0.050	0.053	<0.050	<0.15	0.15	0.12	<0.050	0.064	0.16	0.064	0.019	<0.050	0.14	<0.050	<0.050	<0.050	<0.050			
Fluoranthene	ug/g	0.75	1020	2355	0.38	4.1	1.5	3.2	3	2.1	1.1	0.53	1.5	2.9	1.5	0.31	2.7	0.86	0.49	0.95	0.39			
Fluorene	ug/g	0.19	160	144	<0.050	0.48	0.29	0.36	<0.10	0.19	<0.050	0.085	0.19	0.37	0.079	0.017	<0.10	<0.050	<0.050	<0.050	<0.050			
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.068	0.2	0.25	0.43	0.91	0.66	0.12	0.082	0.38	0.7	0.32	0.07	0.77	0.23	0.13	0.19	0.082			
Methylnaphthalene, 2-(1-)	ug/g			201	<0.050	<0.050	0.061	<0.15	<0.10	<0.050	<0.050	<0.050	0.18	0.36	<0.050	0.0056	<0.10	<0.050	<0.050	<0.050	<0.050			
1-Methylnaphthalene	ug/g				<0.050	<0.050	<0.050	<0.15	<0.10	<0.050	<0.050	<0.050	0.18	0.45	<0.050	0.0058	0.1	<0.050	<0.050	<0.050	<0.050			
2-Methylnaphthalene	ug/g				<0.050	<0.050	<0.050	<0.15	<0.10	<0.050	<0.050	<0.10	<0.10	<0.20	<0.050	<0.0050	<0.10	<0.050	<0.050	<0.050	<0.050			
Naphthalene	ug/g			391	<0.050	<0.050	<0.050	<0.15	<0.10	<0.050	0.086	<0.10	<0.10	<0.20	<0.050	<0.0050	<0.10	<0.050	<0.050	<0.050	<0.050			
Phenanthrene	ug/g	0.56	950	515	0.																			

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C17										CC-C18							
Sample ID					CC-C03-CENTRE-30-45	CC-C03-EAST-0-15	CC-C17-WEST-0-15	CC-C17-WEST-15-30	CC-C17-WEST-30-45	CC-C17-WEST-45-60	CC-C17-CENTRE-0-15	CC-C17-CENTRE-15-30	CC-C17-CENTRE-30-45	CC-C17-EAST-0-15	CC-C18-WEST-0-15	CC-C18-WEST-15-30	CC-C18-WEST-30-45	CC-C18-WEST-45-60	CC-C18-CENTRE-0-15	CC-C18-CENTRE-15-30	CC-C18-CENTRE-30-45	
Sampling Date and Time					4/13/21 10:30	4/13/21 9:30	4/13/21 14:00	4/13/21 14:00	4/13/21 14:00	4/13/21 14:00	4/13/21 13:30	4/13/21 13:30	4/13/21 13:30	4/13/21 13:00	4/14/21 10:00	4/14/21 10:00	4/14/21 10:00	4/14/21 10:00	4/14/21 9:30	4/14/21 9:30	4/14/21 9:30	
Quality Criteria		PSQG			CSQG																	
PARAMETER	Units	O.Reg. 153/04 & LEL	SEL	PEL																		
PHYSICAL																						
Moisture	%				17	24	42	23	33	33	23	26	37	34	33	35	38	22	30	22		
ANIONS & NUTRIENTS																						
Total Ammonia-N	ug/g				<20	<20	145	171	216	135	46	86	84	<20	284	211	175	129	46	36	23	
Nitrogen (N)	%																					
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		309	657	1810	573	1280	1340	594	746	823	1250	1660	1040	1590	1510	608	612	578	
Nitrite (N)	ug/g																					
Nitrate (N)	ug/g																					
Nitrate + Nitrite (N)	ug/g																					
METALS																						
Acid Extractable Aluminum (Al)	ug/g				6300	5600	8900	7800	11000	10000	8400	9400	7000	8200	8600	9900	12000	13000	7100	7700	8000	
Acid Extractable Antimony (Sb)	ug/g				0.73	0.37	0.98	1.1	3.5	3.2	0.78	1.9	1.6	0.8	1.2	1.9	2.7	4.1	0.6	1.4	1.8	
Acid Extractable Arsenic (As)	ug/g	6	33	17	3.3	2.6	4.2	3.9	7	7	3.9	5.7	4.1	4.8	4.3	6.5	7.1	10	3.6	5	4.2	
Acid Extractable Barium (Ba)	ug/g				50	49	100	73	130	190	100	95	67	94	110	180	230	77	96	100	100	
Acid Extractable Beryllium (Be)	ug/g				0.33	0.32	0.51	0.46	0.58	0.49	0.46	0.52	0.4	0.44	0.49	0.56	0.64	0.66	0.37	0.42	0.4	
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	1.2	<1.0	<1.0	<1.0	
Acid Extractable Boron (B)	ug/g				6	8.8	20	17	29	22	18	18	13	14	23	25	23	15	12	11		
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	4.9	0.29	0.71	1.5	10	23	1.1	8.3	10	0.59	0.71	7.6	21	23	0.58	7.9	11	
Acid Extractable Calcium (Ca)	ug/g				60000	63000	63000	64000	64000	59000	68000	65000	54000	70000	67000	67000	58000	59000	72000	56000	63000	
Acid Extractable Chromium (Cr)	ug/g	26	110	90	14	13	27	23	29	23	24	23	21	24	29	42	43	24	22	22		
Acid Extractable Cobalt (Co)	ug/g				6.9	5.4	8	8.4	12	13	7.8	10	8.4	7.2	7.6	10	14	15	6.5	8.5	7.9	
Acid Extractable Copper (Cu)	ug/g	16	110	197	31	32	89	46	88	74	70	60	51	76	61	110	100	68	56	50		
Acid Extractable Iron (Fe)	ug/g	2%	4%		16000	16000	23000	21000	24000	22000	22000	17000	21000	21000	23000	24000	25000	23000	19000	18000		
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	23	24	42	50	85	120	27	68	59	38	41	83	120	140	46	67	50	
Acid Extractable Magnesium (Mg)	ug/g				7400	12000	22000	19000	19000	13000	23000	16000	8900	17000	22000	20000	10000	12000	22000	10000	9200	
Acid Extractable Manganese (Mn)	ug/g	460	1100		490	440	530	550	790	610	510	720	570	470	490	640	680	570	480	600	560	
Acid Extractable Molybdenum (Mo)	ug/g				<0.50	0.67	1.2	0.72	0.89	1	1.1	0.85	0.6	1.1	1.3	0.96	1.1	1.2	0.83	0.69	0.52	
Acid Extractable Nickel (Ni)	ug/g	16	75		16	12	21	20	36	41	20	31	24	18	20	27	42	47	18	24	24	
Acid Extractable Phosphorus (P)	ug/g				810	880	1200	830	1000	1600	990	840	1100	1200	1100	1600	1200	930	1000	890		
Acid Extractable Potassium (K)	ug/g				1000	1000	1800	1400	1900	1500	1700	1600	1100	1500	1600	1800	1900	1700	1400	1100	1300	
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Acid Extractable Silver (Ag)	ug/g				0.5	<0.20	0.56	0.75	2.2	5.1	0.41	2.5	0.27	0.78	1.2	5.3	3.6	<0.20	1.8	1.4		
Acid Extractable Sodium (Na)	ug/g				150	200	370	200	280	250	260	210	310	330	240	210	210	200	190	140		
Acid Extractable Strontium (Sr)	ug/g				110	120	120	96	100	110	110	110	110	160	120	110	110	110	100	100	110	
Acid Extractable Thallium (Tl)	ug/g				0.077	0.099	0.17	0.12	0.13	0.14	0.14	0.12	0.1	0.14	0.15	0.16	0.16	0.17	0.1	0.1	0.096	
Acid Extractable Tin (Sn)	ug/g				3.5	4.1	12	7.3	10	20	2.7	4.8	8.2	4	7.1	18	21	2.6	10	8.1		
Acid Extractable Uranium (U)	ug/g				0.44	0.42	0.65	0.51	0.63	0.56	0.62	0.44	0.62	0.66	0.57	0.65	0.61	0.51	0.46	0.44		
Acid Extractable Vanadium (V)	ug/g				19	18	23	19	23	24	23	19	21	22	23	27	28	20	20	20		
Acid Extractable Zinc (Zn)	ug/g	120	820	315	85	130	300	190	260	400	230	230	200	250	300	320	360	440	220	190	170	
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.053	<0.050	0.12	0.12	0.36	0.6	0.093	0.32	0.23	0.12	0.46	0.25	0.62	0.48	0.085	0.15	0.14	
PAHs																						
Acenaphthene	ug/g				88.9	0.0076	0.028	0.12	0.073	0.21	0.34	0.081	0.13	0.13	<0.10	<0.050	0.11	0.31	0.23	0.077	0.054	0.053
Acenaphthylene	ug/g				128	0.009	0.0052	<0.020	<0.050	<0.050	<0.050	<0.050	0.025	<0.10	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.22	370	245	0.036	0.088	0.32	0.12	0.3	0.43	0.37	0.14	0.21	0.11	0.078	0.19	0.43	0.43	0.11	0.06	0.097	
Benzo(a)anthracene	ug/g	0.32	1480	385	0.15	0.25	0.92	0.32	0.73	1.1	1.8	0.49	0.5	0.34	0.32	0.65	1	1.1	0.33	0.16	0.28	
Benzo(a)pyrene	ug/g	0.37	1440	782	0.15	0.28	0.89	0.28	0.65	0.97	1.1	0.42	0.45	0.39	0.38	0.69	0.9	1	0.29	0.15	0.25	
Benzo(b)fluoranthene	ug/g				0.22	0.47	1.5	0.38	0.9	1.3	1.8	0.64	0.58	0.73	0.62	1.1	1.3	1.7	0.45	0.24	0.39	
Benzo(g,h,i)perylene	ug/g	0.17	320		0.12	0.24	0.66	0.19	0.4	0.58	0.51	0.26	0.31	0.36	0.32	0.59	0.53	0.77	0.21	0.11	0.2	
Benzo(k)fluoranthene	ug/g	0.24	1340		0.15	0.24	0.66	0.14	0.27	0.48	0.64	0.18	0.23	0.17	0.17	0.41	0.39	0.6	0.14	0.067	0.13	
Chrysene	ug/g	0.34	460	862	0.12	0.29	0.93	0.33	0.65	1	1.5	0.54	0.48	0.42	0.42	0.7	0.93	1.1	0.36	0.18	0.29	
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	0.027	0.045	0.15	<0.050	0.099	0.15	0.15	0.062	0.091	<0.10	<0.050	0.13	0.13	0.18	<0.050	<0.050	<0.050	
Fluoranthene	ug/g	0.75	1020	2355	0.45	0.91	2.8	0.97	2	3.2	4.5	1.6	1.5	1.3	2	2.9	3.2	3.2	1.2	0.5	0.81	
Fluorene	ug/g	0.19	160	144	0.0069	0.031	0.15	0.076	0.25	0.48	0.66	0.14	0.15	<0.10	0.058	0.16	0.44	0.36	0.076	0.068	<0.050	
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.12	0.23	0.65	0.2	0.45	0.67	0.56	0.3	0.34	0.36	0.32	0.6	0.61	0.81	0.22	0.11	0.22	
Methylnaphthalene, 2-(1-)	ug/g			201	<0.0071	0.017	0.095	<0.071	0.27	0.63	<0.071	0.19	0.34	<0.14	<0.071	0.17	0.59	0.41	<0.071	<0.071	<0.071	
1-Methylnaphthalene	ug/g				<0.0050	<0.0050	0.021	<0.050	0.12	0.26	<0.050	0.089	0.15	<0.10	<0.050	0.079	0.24	0.16	<0.050	<0.050	<0.050	
2-Methylnaphthalene	ug/g				0.0054	0.017	0.074	<0.050	0.15	0.37	<0.050	0.098	0.18	<0.10	<0.050	0.089	0.36	0.25	<0.050	<0.050	<0.050	
Naphthalene	ug/g			391	0.0056	0.0064	0.037	<0.050	0.052	<0.050	<0.050	0.052	<0.050	<0.050	<0.050	0.054	<0.10	<0.050	<0.050	<0.050	<0.050	
Phenanthrene	ug/g	0.56	950	515	0.072	0.33	1.3	0.57	1.5	2.5	1.5	1.3	1	0.39	0.55	0.99	2.3</					

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C19										CC-C04							
Sample ID					CC-C18-EAST-0-15	CC-C19-WEST-0-15	CC-C19-WEST-15-30	CC-C19-WEST-30-45	CC-C19-WEST-45-60	CC-C19-CENTRE-0-15	CC-C19-CENTRE-15-30	CC-C19-CENTRE-30-45	CC-C19-CENTRE-45-60	CC-C19-EAST-0-15	CC-C04-WEST-0-15	CC-C04-WEST-15-30	CC-C04-WEST-30-45	CC-C04-WEST-45-60	CC-C04-CENTRE-0-15	CC-C04-CENTRE-15-30	CC-C04-CENTRE-30-45	
Sampling Date and Time					4/14/21 9:00	4/14/21 12:00	4/14/21 12:00	4/14/21 12:00	4/14/21 12:00	4/14/21 11:30	4/14/21 11:30	4/14/21 11:30	4/14/21 11:30	4/14/21 11:00	4/19/21 13:00	4/19/21 13:00	4/19/21 13:00	4/19/21 13:00	4/19/21 12:30	4/19/21 12:30	4/19/21 12:30	
Quality Criteria		PSQG			CSQG																	
PARAMETER	Units	O.Reg. 153/04 & LEL	SEL	PEL																		
PHYSICAL																						
Moisture	%				47	47	28	38	32	25	27	31	40	37	34	34	32	20	32	34		
ANIONS & NUTRIENTS																						
Total Ammonia-N	ug/g				35	252	218	271	183	67	95	135	156	<20	152	179	181	140	43	133	155	
Nitrogen (N)	%													0.17	0.18	0.14	0.11	0.056	0.13	0.12		
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		2300	2590	1070	1810	1230	1290	795	982	1420	1900	1720	1810	1360	1130	560	1300	1170	
Nitrite (N)	ug/g													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Nitrate (N)	ug/g													<2	<2	<2	<2	<2	<2	<2		
Nitrate + Nitrite (N)	ug/g													<3	<3	<3	<3	<3	<3	<3		
METALS																						
Acid Extractable Aluminum (Al)	ug/g				9300	11000	8000	9500	12000	9000	9900	8900	10000	9200	9800	9300	11000	11000	7600	12000	12000	
Acid Extractable Antimony (Sb)	ug/g				0.92	1.3	1.4	2.5	2	4.7	1.6	1.9	2.2	0.97	1.6	2.1	2.1	1.8	2	2		
Acid Extractable Arsenic (As)	ug/g	6	33	17	5.3	5.3	13	5.5	6	5.4	5.6	5.3	5.8	4.7	5.7	5.5	6.5	5.7	4.1	7.3	6.2	
Acid Extractable Barium (Ba)	ug/g				100	120	100	240	170	180	100	170	86	160	190	240	220	120	89	240	150	
Acid Extractable Beryllium (Be)	ug/g				0.49	0.56	0.43	0.46	0.59	0.46	0.51	0.46	0.46	0.5	0.44	0.44	0.51	0.5	0.41	0.56	0.6	
Acid Extractable Bismuth (Bi)	ug/g				<1.0	1.1	<1.0	<1.0	1	<1.0	1.2	<1.0	<1.0	3	1.5	<1.0	<1.0	<1.0	<1.0	<1.0		
Acid Extractable Boron (B)	ug/g				20	22	22	26	25	23	21	20	20	22	25	22	22	23	17	27	25	
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	0.63	0.96	3.8	38	17	15	7.7	38	6.1	21	0.65	14	26	30	7.9	3.2	30	14
Acid Extractable Calcium (Ca)	ug/g				66000	71000	72000	57000	65000	64000	65000	65000	64000	66000	63000	57000	58000	61000	66000	66000	62000	
Acid Extractable Chromium (Cr)	ug/g	26	110	90	22	30	25	56	25	41	39	24	21	41	39	25	40	51	30	23	57	37
Acid Extractable Cobalt (Co)	ug/g				8	9.1	8.5	14	13	11	9.6	10	13	8.2	11	13	14	11	7.1	15	12	
Acid Extractable Copper (Cu)	ug/g	16	110	197	58	86	78	150	94	93	56	62	110	67	150	130	76	46	120	83		
Acid Extractable Iron (Fe)	ug/g	2%	4%		23000	25000	20000	24000	22000	21000	20000	22000	22000	22000	23000	19000	23000	22000	20000	25000	24000	
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	49	46	91	110	95	120	65	62	92	33	110	98	110	72	40	140	85	
Acid Extractable Magnesium (Mg)	ug/g				22000	25000	22000	16000	16000	20000	13000	16000	18000	22000	20000	16000	15000	15000	20000	19000	16000	
Acid Extractable Manganese (Mn)	ug/g	460	1100		520	550	510	480	660	510	650	660	600	510	500	590	710	490	630	720		
Acid Extractable Molybdenum (Mo)	ug/g				1.2	1.4	0.78	0.85	0.86	0.96	0.85	0.77	0.96	1.3	1.2	0.83	1	0.75	1.2	0.88		
Acid Extractable Nickel (Ni)	ug/g	16	75		22	25	27	58	45	38	28	28	46	20	41	53	56	32	20	53	40	
Acid Extractable Phosphorus (P)	ug/g				1100	1300	970	1500	1300	1200	830	1200	1000	930	1300	1400	1700	1100	970	1500	1200	
Acid Extractable Potassium (K)	ug/g				1700	2100	1600	1500	1800	1700	1600	1500	1700	1800	1600	1400	1500	1600	1500	1900	1900	
Acid Extractable Selenium (Se)	ug/g				<0.50	0.57	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Acid Extractable Silver (Ag)	ug/g				0.24	0.68	1.5	9.8	3.3	3.1	1.5	1.5	4.6	0.3	7.8	11	5.3	5	0.85	5.7	3.1	
Acid Extractable Sodium (Na)	ug/g				570	430	220	230	250	350	320	330	370	370	440	320	310	260	270	510	450	
Acid Extractable Strontium (Sr)	ug/g				140	160	120	100	110	110	100	100	100	140	130	96	110	98	99	120	110	
Acid Extractable Thallium (Tl)	ug/g				0.18	0.21	0.12	0.12	0.13	0.13	0.12	0.12	0.11	0.12	0.16	0.11	0.12	0.12	0.1	0.14	0.13	
Acid Extractable Tin (Sn)	ug/g				3.2	5.2	6.9	19	14	17	2.9	6.3	7	2.9	9.2	16	23	7.8	3.1	24	11	
Acid Extractable Uranium (U)	ug/g				0.61	0.71	0.53	0.59	0.62	0.58	0.52	0.52	0.57	0.68	0.63	0.59	0.61	0.57	0.44	0.65	0.62	
Acid Extractable Vanadium (V)	ug/g				21	24	20	23	25	23	24	23	21	22	23	19	22	22	19	25	24	
Acid Extractable Zinc (Zn)	ug/g	120	820	315	340	400	290	500	330	390	210	200	350	320	440	420	440	260	210	520	300	
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.068	0.19	0.22	0.54	0.38	0.29	0.27	0.27	0.37	0.13	3.8	0.47	0.42	0.29	0.14	0.45	0.3	
PAHs																						
Acenaphthene	ug/g				88.9	<0.10	<0.10	0.21	0.54	0.41	0.26	0.13	0.28	0.4	0.052	0.11	0.39	0.48	0.31	0.1	0.38	0.31
Acenaphthylene	ug/g				128	<0.10	<0.10	<0.050	<0.20	<0.10	<0.050	<0.050	0.044	<0.10	0.015	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10
Anthracene	ug/g	0.22	370	245	0.13	0.15	0.36	0.52	0.37	0.31	0.14	0.44	0.38	0.18	0.15	0.5	0.39	0.37	0.2	0.47	0.29	
Benzo(a)anthracene	ug/g	0.32	1480	385	0.27	0.73	1	1.1	0.87	0.6	0.41	1.1	0.72	0.66	0.48	0.95	0.82	0.75	0.5	1.1	0.58	
Benzo(a)pyrene	ug/g	0.37	1440	782	0.25	0.83	0.84	0.98	0.83	0.5	0.4	1	0.66	0.76	0.54	0.86	0.82	0.71	0.47	1	0.58	
Benzo(b)fluoranthene	ug/g				0.38	1.3	1.2	1.3	1.6	1.3	0.79	1.5	1	1.3	0.89	1.2	1.2	1	0.71	1.6	0.86	
Benzo(g,h,i)perylene	ug/g	0.17	320		0.19	0.73	0.53	0.73	0.61	0.34	0.28	0.64	0.47	0.66	0.52	0.62	0.67	0.51	0.34	0.84	0.49	
Benzo(k)fluoranthene	ug/g	0.24	1340		0.11	0.37	0.35	0.56	0.45	0.34	0.22	0.2	0.54	0.34	0.45	0.39	0.45	0.39	0.36	0.55	0.3	
Chrysene	ug/g	0.34	460	862	0.29	0.94	0.99	1.1	0.9	0.66	0.39	0.98	0.68	0.76	0.59	0.95	0.93	0.76	0.48	1.2	0.65	
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	<0.10	0.11	0.12	0.16	0.11	0.069	0.16	0.18	0.11	0.12	0.12	0.18	0.16	0.16	0.079	0.2	0.14	
Fluoranthene	ug/g	0.75	1020	2355	1	2.8	2.6	3.7	2.5	2.2	1.1	2.8	2.2	2.4	1.8	3	2.5	2.4	1.8	3.8	1.7	
Fluorene	ug/g	0.19	160	144	<0.10	0.1	0.28	0.65	0.45	0.37	0.17	0.35	0.45	0.075	0.15	0.53	0.52	0.3	0.13	0.51	0.33	
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.19	0.73	0.57	0.73	0.62	0.38	0.31	0.71	0.48	0.63	0.54							

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C20										CC-C21									
Sample ID					CC-C04-CENTRE-45-60	CC-C04-EAST-0-15	CC-C04-EAST-15-30	CC-C20-WEST-0-15	CC-C20-WEST-15-30	CC-C20-WEST-30-45	CC-C20-WEST-45-60	CC-C20-CENTRE-0-15	CC-C20-CENTRE-15-30	CC-C20-CENTRE-30-45	CC-C20-EAST-0-15	CC-C21-WEST-0-15	CC-C21-WEST-15-30	CC-C21-WEST-30-45	CC-C21-CENTRE-0-15	CC-C21-CENTRE-15-30	CC-C21-EAST-0-15			
Sampling Date and Time					4/19/21 12:30	4/19/21 12:00	4/19/21 12:00	4/14/21 15:00	4/14/21 15:00	4/14/21 15:00	4/14/21 15:00	4/14/21 14:30	4/14/21 14:30	4/14/21 14:30	4/14/21 14:00	4/15/21 10:00	4/15/21 10:00	4/15/21 10:00	4/15/21 9:30	4/15/21 9:30	4/15/21 9:00			
Quality Criteria		PSQG			CSQG																			
PARAMETER	Units	O.Reg. 153/04 & LEL	SEL	PEL																				
PHYSICAL																								
Moisture	%					55	25	57	57	32	35	36	38	39	50	57	36	28	30	38	51			
ANIONS & NUTRIENTS																								
Total Ammonia-N	ug/g					29	<20	341	463	218	214	150	174	137	<20	61	<20	<20	<20	<20	126			
Nitrogen (N)	%					0.26	0.055																	
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800			2590	554	3800	3800	1290	1650	1390	1750	1630	2160	3240	1230	671	1010	1490	2580			
Nitrite (N)	ug/g					<0.5	<0.5																	
Nitrate (N)	ug/g					<2	<2																	
Nitrate + Nitrite (N)	ug/g					<3	<3																	
METALS																								
Acid Extractable Aluminum (Al)	ug/g					11000	5500	11000	10000	9500	11000	14000	9300	11000	10000	12000	10000	8600	7400	11000	11000			
Acid Extractable Antimony (Sb)	ug/g					1.3	0.42	1.3	1.8	1.3	2	2	1.8	2.2	0.79	1.6	1.7	1.9	1.1	2	1.5			
Acid Extractable Arsenic (As)	ug/g	6	33	17		5.9	2.9	5	5.1	5.2	6.4	7.6	5.1	5.7	5.8	6.4	6.6	4.1	6.5	5.5				
Acid Extractable Barium (Ba)	ug/g					100	46	120	150	110	270	200	250	100	120	110	92	100	180	120				
Acid Extractable Beryllium (Be)	ug/g					0.51	0.25	0.56	0.58	0.48	0.55	0.65	0.43	0.54	0.59	0.5	0.52	0.38	0.57	0.55				
Acid Extractable Bismuth (Bi)	ug/g					1.1	<1.0	1.3	1.2	1.5	<1.0	1.2	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0				
Acid Extractable Boron (B)	ug/g					16	7	21	22	18	27	25	21	25	20	19	13	7.9	15	16	20			
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5		0.81	0.28	1.1	7.7	2.6	32	30	7.7	27	36	0.62	1.2	13	5.3	7.1	0.88			
Acid Extractable Calcium (Ca)	ug/g					66000	70000	64000	58000	78000	42000	64000	56000	57000	65000	64000	61000	60000	71000	57000	70000			
Acid Extractable Chromium (Cr)	ug/g	26	110	90		29	12	31	39	26	61	61	42	85	32	33	35	23	27	35	30			
Acid Extractable Cobalt (Co)	ug/g					8.5	4.5	8.9	11	8.6	17	16	12	15	8.5	9.4	11	7.7	7.5	12	9.1			
Acid Extractable Copper (Cu)	ug/g	16	110	197		83	29	93	130	67	130	110	180	51	110	76	55	91	86	87				
Acid Extractable Iron (Fe)	ug/g	2%	4%			25000	15000	25000	24000	24000	21000	28000	19000	23000	25000	25000	22000	18000	19000	23000	25000			
Acid Extractable Lead (Pb)	ug/g	31	250	91.3		39	15	43	88	100	140	140	110	130	41	51	74	87	110	100	44			
Acid Extractable Magnesium (Mg)	ug/g					22000	11000	23000	20000	22000	13000	15000	13000	13000	24000	23000	14000	8400	19000	16000	23000			
Acid Extractable Manganese (Mn)	ug/g	460	1100			520	410	520	540	620	490	660	470	490	540	520	420	340	450	460	540			
Acid Extractable Molybdenum (Mo)	ug/g					1.6	0.65	1.7	1.6	1.2	1.2	1.2	0.85	1.2	0.94	1.8	0.96	1.2	0.81	1	1.5			
Acid Extractable Nickel (Ni)	ug/g	16	75			23	11	26	34	26	61	58	47	61	22	25	35	23	23	40	23			
Acid Extractable Phosphorus (P)	ug/g					1100	800	1300	1500	1100	1500	1300	1500	1200	1500	1500	730	1100	890	1400				
Acid Extractable Potassium (K)	ug/g					1900	850	2100	1700	1600	1400	2200	1400	1600	2000	2000	1600	1200	1400	1700	2000			
Acid Extractable Selenium (Se)	ug/g					0.71	<0.50	0.62	0.56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.65	<0.50	<0.50	0.57			
Acid Extractable Silver (Ag)	ug/g					0.47	<0.20	0.74	2.7	0.95	7.6	6	5.9	14	<0.20	0.89	2.6	1.3	4	3	0.64			
Acid Extractable Sodium (Na)	ug/g					250	120	540	420	230	210	330	310	440	440	1600	940	580	1000	650				
Acid Extractable Strontium (Sr)	ug/g					160	130	140	140	170	110	90	99	110	130	110	96	120	110	91	170			
Acid Extractable Thallium (Tl)	ug/g					0.19	0.073	0.19	0.2	0.15	0.15	0.17	0.11	0.16	0.17	0.22	0.12	0.14	0.12	0.13	0.2			
Acid Extractable Tin (Sn)	ug/g					4.3	1.2	6.4	9.9	8.1	15	23	16	15	3	7.9	15	20	9.2	13	4.4			
Acid Extractable Uranium (U)	ug/g					0.76	0.45	0.75	0.74	0.62	0.67	0.69	0.55	0.69	0.56	0.77	0.6	0.78	0.55	0.59	0.65			
Acid Extractable Vanadium (V)	ug/g					24	16	24	25	23	27	26	23	27	23	26	24	23	20	25	24			
Acid Extractable Zinc (Zn)	ug/g	120	820	315		420	120	400	480	340	540	440	390	480	320	480	290	210	270	340	400			
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486		0.12	0.051	0.12	0.3	0.18	0.48	0.3	0.3	0.41	0.057	0.21	0.23	0.26	0.71	0.3	0.15			
PAHs																								
Acenaphthene	ug/g			88.9		<0.10	0.018	0.11	<0.10	<0.050	0.24	0.53	0.69	0.3	<0.10	0.79	0.054	0.016	0.57	0.33	<0.10			
Acenaphthylene	ug/g			128		<0.10	0.0061	<0.10	<0.10	<0.050	0.053	<0.20	<0.20	<0.10	<0.10	<0.20	<0.050	0.022	0.035	0.05	<0.10			
Anthracene	ug/g	0.22	370	245		0.16	0.034	0.25	0.16	0.078	0.22	0.43	0.73	0.29	0.23	0.86	0.12	0.072	0.71	0.57	0.13			
Benzo(a)anthracene	ug/g	0.32	1480	385		0.64	0.16	1	0.83	0.33	0.61	0.92	1.4	0.57	0.76	2.6	0.45	0.26	2	1.9	0.65			
Benzo(a)pyrene	ug/g	0.37	1440	782		0.85	0.22	1.1	0.97	0.36	0.59	0.84	1.2	0.48	0.8	2.3	0.5	0.25	1.7	1.6	0.77			
Benzo(b)fluoranthene	ug/g					1.5	0.39	1.9	1.8	0.65	0.99	1.4	2.1	0.74	1.2	3.8	0.8	2.6	2.4	2.4	1.4			
Benzo(g,h,i)perylene	ug/g	0.17	320			0.92	0.26	0.99	0.94	0.33	0.45	0.64	0.97	0.33	0.64	1.5	0.33	0.17	1	1	0.73			
Benzo(k)fluoranthene	ug/g	0.24	1340			0.44	0.12	0.67	0.55	0.22	0.35	0.69	0.55	0.22	0.34	1.3	0.83	0.12	0.91	0.83	0.47			
Chrysene	ug/g	0.34	460	862		0.96	0.26	1.2	1	0.44	0.7	0.95	1.5	0.61	0.88	3	0.33	0.19	1.9	1.8	0.87			
Dibenzo(a,h)anthracene	ug/g	0.06	130	135		0.15	0.05	0.17	0.15	0.057	0.1	0.14	0.22	<0.10	0.11	0.34	0.077	0.044	0.28	0.31	0.12			
Fluoranthene	ug/g	0.75	1020	2355		2.8	0.66	3.4	3	1.1	2	2.9	4.5	1.9	2.8	9.7	1.4	0.57	6	5	2.4			
Fluorene	ug/g	0.19	160	144		<0.10	0.016	0.14	<0.10	0.062	0.3	0.6	0.99	0.4	0.1	0.8	<0.050	0.018	0.5	0.3	<0.10			
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320			0.84	0.24	0.92	0.87	0.32	0.46	0.65	0.93	0.36	0.66	1.6	0.37	0.18	1.1	1.1	0.67			
Methylnaphthalene, 2-(1-)	ug/g			201		<0.14	0.015	<0.14	<0.14	<0.071	1	2.1	3.1	0.81	<0.14	0.38	<0.050	0.0063	0.084	0.17	<0.10			
1-Methylnaphthalene	ug/g					<0.10	<0.0050	<0.10	<0.10	<0.050	0.62	0.94	1.6	0.51	<0.10	0.38	<0.050	0.0063						

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C22										CC-C23						
Sample ID					CC-C21-EAST-15-30	CC-C22-WEST-0-15	CC-C22-WEST-15-30	CC-C22-WEST-30-45	CC-C22-WEST-45-60	CC-C22-CENTRE-0-15	CC-C22-CENTRE-15-30	CC-C22-CENTRE-30-45	CC-C22-EAST-0-15	CC-C23-WEST-0-15	CC-C23-WEST-15-30	CC-C23-WEST-30-45	CC-C23-WEST-45-60	CC-C23-CENTRE-0-15	CC-C23-CENTRE-15-30	CC-C23-EAST-0-15	CC-C05-WEST-0-15
Sampling Date and Time					4/15/21 9:00	4/15/21 12:00	4/15/21 12:00	4/15/21 12:00	4/15/21 12:00	4/15/21 11:30	4/15/21 11:30	4/15/21 11:30	4/15/21 11:00	4/15/21 14:00	4/15/21 14:00	4/15/21 14:00	4/15/21 14:00	4/15/21 13:30	4/15/21 13:30	4/15/21 13:00	4/20/21 10:00
Quality Criteria		PSQG			CSQG																
PARAMETER	Units	O.Reg. 153/04 & LEL	SEL	PEL																	
PHYSICAL																					
Moisture	%				59	53	20	34	34	34	42	59	53	48	30	29	26	38	67	39	42
ANIONS & NUTRIENTS																					
Total Ammonia-N	ug/g				474	317	90	165	204	114	186	252	27	213	182	178	149	61	227	41	178
Nitrogen (N)	%																				0.21
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		5500	3240	367	1000	1320	1370	2840	6380	2160	2610	879	970	894	1710	7340	1800	2080
Nitrite (N)	ug/g																				<0.5
Nitrate (N)	ug/g																				<2
Nitrate + Nitrite (N)	ug/g																				<3
METALS																					
Acid Extractable Aluminum (Al)	ug/g				12000	11000	6900	7100	9400	8800	9900	8500	10000	10000	6600	7000	7200	8200	11000	8800	7500
Acid Extractable Antimony (Sb)	ug/g				0.56	1.6	1	1.4	1.9	4.2	3.4	4	1.3	1.1	1.6	1.5	2.4	0.45	0.39	1.6	0.84
Acid Extractable Arsenic (As)	ug/g	6	33	17	5.1	5.5	3.5	6.3	6.3	7.2	7.3	6.5	6.1	5.1	4.4	5	5.8	3.8	4	6.2	3.7
Acid Extractable Barium (Ba)	ug/g				110	130	86	130	190	260	160	190	110	110	91	130	95	84	120	95	94
Acid Extractable Beryllium (Be)	ug/g				0.54	0.55	0.36	0.41	0.55	0.44	0.51	0.46	0.52	0.49	0.33	0.41	0.42	0.4	0.54	0.47	0.42
Acid Extractable Bismuth (Bi)	ug/g				<1.0	1.7	<1.0	<1.0	<1.0	<1.0	1.2	1.1	<1.0	1	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0
Acid Extractable Boron (B)	ug/g				14	19	14	20	25	20	20	29	18	19	15	19	18	14	17	15	16
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	0.72	0.94	0.65	4.7	9.9	20	9.8	8.4	0.87	0.75	2.6	5.8	9.8	0.39	0.44	1.2	0.66
Acid Extractable Calcium (Ca)	ug/g				57000	64000	74000	64000	65000	65000	54000	56000	72000	65000	66000	64000	64000	71000	66000	67000	64000
Acid Extractable Chromium (Cr)	ug/g	26	110	90	22	33	22	21	33	48	43	38	30	28	24	29	36	18	22	24	24
Acid Extractable Cobalt (Co)	ug/g				8.9	9	6.6	11	13	15	9.8	9.8	9.2	8.7	8.2	9.8	11	7.2	8.8	7.6	7.2
Acid Extractable Copper (Cu)	ug/g	16	110	197	41	120	54	54	67	110	120	110	78	85	91	74	84	47	38	62	79
Acid Extractable Iron (Fe)	ug/g	2%	4%		23000	25000	21000	18000	22000	22000	23000	24000	23000	24000	25000	21000	20000	21000	23000	23000	23000
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	28	45	120	110	130	160	150	230	41	43	120	110	110	52	120	67	
Acid Extractable Magnesium (Mg)	ug/g				17000	22000	19000	18000	15000	18000	12000	24000	17000	15000	14000	18000	15000	14000	21000	18000	18000
Acid Extractable Manganese (Mn)	ug/g	460	1100		490	510	470	480	590	540	500	440	610	530	450	480	500	450	520	440	
Acid Extractable Molybdenum (Mo)	ug/g				0.79	1.8	0.87	0.74	0.86	1	1.4	1.3	1.3	1.4	0.9	0.74	1.6	0.71	0.82	1.2	1
Acid Extractable Nickel (Ni)	ug/g	16	75		21	25	17	27	51	54	33	32	23	23	20	39	44	19	21	20	18
Acid Extractable Phosphorus (P)	ug/g				980	1300	850	1000	1300	1000	1400	1500	1300	1000	910	1300	780	910	1100	1100	1200
Acid Extractable Potassium (K)	ug/g				1700	1900	1200	1200	1600	1400	1400	1100	1900	1900	1200	1200	1100	1500	1800	1500	1500
Acid Extractable Selenium (Se)	ug/g				<0.50	0.74	<0.50	<0.50	<0.50	<0.50	0.59	0.67	0.54	0.56	<0.50	<0.50	<0.50	<0.50	0.54	0.51	<0.50
Acid Extractable Silver (Ag)	ug/g				<0.20	0.79	1.1	1.5	2.2	5.9	3.3	2.2	0.48	0.54	4.4	2.5	3.3	1.1	<0.20	1.7	0.66
Acid Extractable Sodium (Na)	ug/g				340	560	250	210	220	390	260	260	550	480	220	230	220	390	500	470	320
Acid Extractable Strontium (Sr)	ug/g				130	160	130	110	120	150	140	120	170	140	120	110	120	140	150	150	130
Acid Extractable Thallium (Tl)	ug/g				0.15	0.22	0.11	0.08	0.11	0.11	0.14	0.16	0.2	0.19	0.1	0.091	0.12	0.15	0.15	0.15	0.15
Acid Extractable Tin (Sn)	ug/g				2.6	5.2	20	28	9.4	5.8	11	3.6	28	3.5	3.6	3.4	9.4	1.7	9.4	12	6.8
Acid Extractable Uranium (U)	ug/g				0.63	0.74	0.54	0.51	0.55	0.57	0.55	0.56	0.67	0.63	0.53	0.51	0.53	0.54	0.57	0.61	0.66
Acid Extractable Vanadium (V)	ug/g				25	25	23	20	23	23	23	24	23	23	33	28	25	20	22	23	29
Acid Extractable Zinc (Zn)	ug/g	120	820	315	240	470	200	270	320	420	470	500	380	380	240	290	340	180	320	310	310
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.076	0.27	0.25	0.74	0.39	0.52	0.46	0.62	0.15	0.12	9.1	0.41	0.35	1.2	0.07	2.5	0.18
PAHs																					
Acenaphthene	ug/g			88.9	<0.10	<0.10	<0.0050	0.043	0.1	0.17	0.098	8.1	<0.10	<0.10	0.044	0.086	0.16	<0.10	<0.10	0.22	<0.10
Acenaphthylene	ug/g			128	<0.10	<0.10	<0.0050	0.0093	0.029	<0.10	0.045	0.13	<0.10	<0.10	0.0088	0.025	0.035	<0.10	<0.10	<0.10	<0.10
Anthracene	ug/g	0.22	370	245	<0.10	0.17	<0.0050	0.051	0.14	0.21	0.17	11	0.13	0.16	0.065	0.096	0.25	<0.10	<0.10	0.29	<0.10
Benzo(a)anthracene	ug/g	0.32	1480	385	0.27	0.78	0.011	0.14	0.35	0.53	0.56	17	0.66	0.81	0.22	0.31	0.61	0.16	<0.10	1.1	<0.10
Benzo(a)pyrene	ug/g	0.37	1440	782	0.3	0.97	0.011	0.13	0.32	0.48	0.54	12	0.79	1	0.23	0.28	0.52	0.16	<0.10	1.5	<0.10
Benzo(b)fluoranthene	ug/g				0.52	1.7	0.22	0.21	0.5	1.4	0.82	1.6	1.4	1.7	0.79	0.47	0.77	0.28	0.14	1.9	<0.10
Benzo(g,h,i)perylene	ug/g	0.17	320		0.27	0.88	0.0098	0.098	0.24	0.38	0.39	6.3	0.76	0.74	0.19	0.21	0.33	0.12	<0.10	1.1	<0.10
Benzo(k)fluoranthene	ug/g	0.24	1340		0.18	0.56	0.0068	0.075	0.18	0.29	0.27	5.5	0.49	0.57	<0.10	0.16	0.29	<0.10	<0.10	0.69	<0.10
Chrysene	ug/g	0.34	460	862	0.36	1	0.016	0.14	0.34	0.56	0.49	14	0.89	1.1	0.25	0.31	0.57	0.17	<0.10	1.1	<0.10
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	<0.10	0.14	<0.0050	0.02	0.052	<0.10	0.096	2	0.13	0.14	0.037	0.045	0.086	<0.10	<0.10	0.26	<0.10
Fluoranthene	ug/g	0.75	1020	2355	0.92	2.8	0.061	0.42	1	1.6	1.3	46	2.5	3	0.77	0.93	1.7	0.63	0.4	2.6	0.14
Fluorene	ug/g	0.19	160	144	<0.10	0.11	<0.0050	0.05	0.14	0.23	0.1	8.8	<0.10	0.11	0.06	0.12	0.19	<0.10	0.12	0.17	<0.10
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.25	0.83	0.0093	0.097	0.24	0.38	0.4	6.4	0.7	0.78	0.19	0.21	0.36	0.11	<0.10	1.1	<0.10
Methylnaphthalene, 2-(1-)	ug/g			201	<0.10	<0.10	<0.0050	0.026	0.1	0.13	0.033	1	<0.10	<0.10	0.01	0.062	0.065	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene	ug/g				<0.10	<0.10	<0.0050	0.017	0.048	<0.10	0.07	1.6	<0.10	<0.10	0.019	0.041	0.045	<0.10	<0.10	0.11	<0.10
2-Methylnaphthalene	ug/g				<0.10	<0.10	<0.0050	0.041	<0.020	<0.10	0.041	2.6	<0.10	<0.10	<0.010	<0.050	<0.050	<0.10	<0.10	0.13	<0.10
Naphthalene	ug/g			391	0.32	1.1	0.012	0.26	0.75	1.1	0.65	49	0.91	1.3	0.34	0.58	1.2	0.22	0.2	1.2	<0.10
Phenanthrene	ug/g	0.56	950	515	0.32	1.1	0.012	0.26	0.75	1.1	0.65</										

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C05										CC-C24						
Sample ID					CC-C05-WEST-15-30	CC-C05-WEST-30-45	CC-C05-WEST-45-60	CC-C05-WEST-60-75	CC-C05-WEST-75-90	CC-C05-CENTRE-0-15	CC-C05-EAST-0-15	CC-C05-EAST-15-30	CC-C24-WEST-0-15	CC-C24-WEST-15-30	CC-C24-CENTRE-0-15	CC-C24-CENTRE-15-30	CC-C24-CENTRE-30-45	CC-C24-CENTRE-45-60	CC-C24-EAST-0-15	CC-C24-EAST-15-30	CC-C25-WEST-0-15
Sampling Date and Time					4/20/21 10:00	4/20/21 10:00	4/20/21 10:00	4/20/21 10:00	4/20/21 11:00	4/20/21 9:30	4/20/21 8:00	4/20/21 9:00	4/20/21 12:00	4/20/21 12:00	4/20/21 11:30	4/20/21 11:30	4/20/21 11:30	4/20/21 11:00	4/20/21 11:00	4/20/21 14:00	
PARAMETER	Units	Quality Criteria			PSQG										CSQG						
		O.Reg. 153/04 & LEL	SEL	PEL																	
PHYSICAL																					
Moisture	%				18	33	42	49	46	24	25	35	52	27	19	18	35	30	38	31	43
ANIONS & NUTRIENTS																					
Total Ammonia-N	ug/g				85	188	286	269	228	25	93	157	84	<20	<20	31	119	114	43	57	113
Nitrogen (N)	%				0.035	0.12	0.22	0.33	0.3	0.074	0.091	0.21	0.3	0.067	0.035	0.019	0.13	0.13	0.16	0.096	0.22
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		349	1240	2200	3260	3010	736	908	2120	3010	668	353	187	1350	1260	1580	957	2250
Nitrite (N)	ug/g				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate (N)	ug/g				<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nitrate + Nitrite (N)	ug/g				<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
METALS																					
Acid Extractable Aluminum (Al)	ug/g				4900	9700	11000	12000	8900	8100	9700	11000	11000	9000	6600	3700	11000	7900	7300	9400	9300
Acid Extractable Antimony (Sb)	ug/g				0.49	2.8	3	1.5	0.64	1	2.5	1.4	0.47	0.43	1	2.5	1.8	0.75	0.66	0.89	
Acid Extractable Arsenic (As)	ug/g	6	33	17	2.9	6.2	6.5	6.2	4.5	5.3	6.1	7.1	5.9	4.5	3.5	2.6	8.4	5.3	3.9	5.1	4.5
Acid Extractable Barium (Ba)	ug/g				57	220	98	210	260	100	260	100	140	120	55	70	43	250	170	110	120
Acid Extractable Beryllium (Be)	ug/g				0.29	0.51	0.56	0.61	0.46	0.47	0.53	0.65	0.59	0.45	0.39	0.23	0.61	0.45	0.39	0.5	0.5
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acid Extractable Boron (B)	ug/g				12	29	31	36	26	18	19	20	20	11	16	36	25	15	15	20	
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	1.5	16	29	21	4	0.98	1.3	3.2	0.94	0.49	0.58	0.63	17	16	0.52	0.89	0.79
Acid Extractable Calcium (Ca)	ug/g				67000	63000	53000	64000	67000	72000	62000	55000	62000	58000	69000	67000	59000	58000	64000	64000	67000
Acid Extractable Chromium (Cr)	ug/g	26	110	90	18	47	56	44	20	30	34	30	33	20	18	37	18	20	23	27	
Acid Extractable Cobalt (Co)	ug/g				6	14	16	13	7.9	8.7	9	9.4	9.1	7.8	7.2	4.6	17	12	6.6	8.2	
Acid Extractable Copper (Cu)	ug/g	16	110	197	38	120	170	140	46	62	98	87	110	46	38	89	120	120	48	51	72
Acid Extractable Iron (Fe)	ug/g	2%	4%		21000	22000	21000	22000	18000	24000	35000	25000	25000	21000	19000	17000	24000	19000	18000	18000	21000
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	65	150	170	100	56	90	160	98	55	24	48	140	200	120	48	66	39
Acid Extractable Magnesium (Mg)	ug/g				14000	14000	12000	11000	7800	18000	11000	20000	17000	11000	17000	15000	15000	17000	14000	14000	21000
Acid Extractable Manganese (Mn)	ug/g	460	1100		410	510	500	540	500	590	580	670	520	550	490	390	600	520	470	530	500
Acid Extractable Molybdenum (Mo)	ug/g				0.61	0.93	1.1	0.92	0.74	1.3	1.3	1.7	1.7	0.66	0.59	0.53	1.1	0.87	0.85	0.88	1.3
Acid Extractable Nickel (Ni)	ug/g	16	75		16	58	58	44	22	23	24	26	24	18	17	10	69	38	16	20	20
Acid Extractable Phosphorus (P)	ug/g				880	1500	1700	1400	890	1200	1100	1400	810	1400	870	1600	1500	970	860	1300	
Acid Extractable Potassium (K)	ug/g				1000	1600	1600	1700	1200	1700	1900	1600	1900	1400	1500	1800	1300	1400	1600	1700	
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5	0.68	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	0.5	
Acid Extractable Silver (Ag)	ug/g				0.28	4.7	12	8	1.5	0.89	0.4	0.81	0.69	<0.20	<0.20	<0.20	5.2	5.4	0.28	0.55	
Acid Extractable Sodium (Na)	ug/g				180	270	250	290	240	360	450	540	520	260	250	200	490	380	420	430	410
Acid Extractable Strontium (Sr)	ug/g				120	120	110	150	150	140	140	150	110	110	120	100	130	99	120	120	140
Acid Extractable Thallium (Tl)	ug/g				0.087	0.15	0.15	0.15	0.11	0.16	0.16	0.14	0.24	0.12	0.12	0.12	0.067	0.17	0.12	0.15	0.14
Acid Extractable Tin (Sn)	ug/g				5.1	10	15	13	7.3	21	45	25	4.6	2.2	2.8	5.7	12	14	3.2	5	3.4
Acid Extractable Uranium (U)	ug/g				0.5	0.64	0.64	0.65	0.47	0.7	0.57	0.63	0.77	0.79	0.49	0.44	0.73	0.57	0.55	1	0.62
Acid Extractable Vanadium (V)	ug/g				30	26	25	25	21	22	40	26	27	25	20	23	26	20	22	25	22
Acid Extractable Zinc (Zn)	ug/g	120	820	315	190	420	570	400	160	260	380	300	440	170	190	200	480	390	220	230	340
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.28	0.45	0.55	0.35	0.12	0.12	0.16	0.28	0.14	0.11	0.082	0.079	0.43	0.48	0.095	0.39	0.15
PAHs																					
Acenaphthene	ug/g				88.9	<0.050	0.14	0.51	0.2	<0.10	0.86	<0.050	<0.10	<0.050	<0.050	<0.050	2.3	0.22	<0.050	<0.050	<0.10
Acenaphthylene	ug/g				128	<0.050	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.050	<0.050	0.073	<0.050	<0.050	<0.050	<0.10	
Anthracene	ug/g	0.22	370	245	<0.050	0.12	0.31	0.19	<0.10	1.7	<0.050	<0.10	0.12	<0.050	<0.050	3.7	0.19	<0.050	<0.050	0.12	
Benzo(a)anthracene	ug/g	0.32	1480	385	0.2	0.39	0.53	0.48	0.16	4.9	<0.050	<0.10	0.61	0.19	0.18	4.4	0.5	0.25	0.21	0.64	
Benzo(a)pyrene	ug/g	0.37	1440	782	0.19	0.37	0.46	0.45	0.19	3.8	<0.050	<0.10	0.74	0.21	0.17	2.6	0.44	0.29	0.21	0.69	
Benzo(b)fluoranthene	ug/g				0.34	0.63	0.74	0.77	0.22	5.3	<0.050	<0.10	1.2	0.36	0.28	3.2	0.71	0.48	0.37	1.1	
Benzo(g,h,i)perylene	ug/g	0.17	320		0.14	0.3	0.29	0.33	0.13	2.1	<0.050	<0.10	0.62	0.18	0.13	0.11	0.95	0.33	0.24	0.17	0.52
Benzo(k)fluoranthene	ug/g	0.24	1340		0.12	0.22	0.21	0.26	<0.10	1.6	<0.050	<0.10	0.4	0.1	0.082	1.2	0.24	0.14	0.097	0.32	
Chrysene	ug/g	0.34	460	862	0.25	0.43	0.57	0.49	0.17	4.9	0.05	<0.10	0.81	0.31	0.22	3.9	0.5	0.34	0.27	0.83	
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	<0.050	0.055	<0.10	<0.10	<0.10	0.52	<0.050	<0.10	0.11	<0.050	<0.050	0.33	0.078	<0.050	<0.050	<0.10	
Fluoranthene	ug/g	0.75	1020	2355	0.78	1.3	1.8	1.4	0.37	15	0.17	0.26	2.5	0.68	0.62	5.4	1.4	1.5	0.95	0.71	2.5
Fluorene	ug/g	0.19	160	144	<0.050	0.19	<0.050	0.19	<0.10	0.79	<0.050	<0.10	<0.10	<0.050	<0.050	3	0.25	<0.050	<0.050	<0.10	
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.14	0.3	0.33	0.34	0.14	2.4	<0.050	<0.10	0.62	0.18	0.13	1.1	1.2	0.33	0.24	0.18	0.55
Methylnaphthalene, 2-(1-)	ug/g				201	<0.071	0.25	0.79	0.53	<0.14	0.34	<0.071	<0.14	<0.071	<0.071	3.1	0.56	<0.071	<0.071	<0.14	
1-Methylnaphthalene	ug/g				<0.050	0.19	0.61	0.39	<0.10	0.13	<0.050	<0.10	<0.050	<0.050	<0.050	1.3	0.37	<0.050	<0.050	<0.10	
2-Methylnaphthalene	ug/g				<0.050	0.062	0.18	0.15	<0.10	0.21	<0.050	<0.10	<0.10	<0.050	<0.050	1.8	0.19	<0.050	<0.050	<0.10	
Naphthalene	ug/g				391	<0.050	0.058	<0.10	<0.10	0.77	<0.050	<0.10	<0.10	<0.050	<0.050	3.1	<0.070	<0.050	<0.050	<	

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C25												CC-C26					
Sample ID					CC-C25-WEST-15-30	CC-C25-WEST-30-45	CC-C25-WEST-45-60	CC-C25-WEST-60-75	CC-C25-CENTRE-0-15	CC-C25-CENTRE-15-30	CC-C25-CENTRE-30-45	CC-C25-CENTRE-45-60	CC-C25-EAST-0-15	CC-C25-EAST-15-30	CC-C26-WEST-0-15	CC-C26-WEST-15-30	CC-C26-WEST-30-45	CC-C26-WEST-45-60	CC-C26-CENTRE-0-15	CC-C26-CENTRE-15-30	CC-C26-CENTRE-30-45	
Sampling Date and Time					4/20/21 14:00	4/20/21 14:00	4/20/21 14:00	4/20/21 14:00	4/20/21 13:30	4/20/21 13:30	4/20/21 13:30	4/20/21 13:30	4/20/21 13:00	4/20/21 13:00	4/21/21 10:00	4/21/21 10:00	4/21/21 10:00	4/21/21 10:00	4/21/21 9:30	4/21/21 9:30	4/21/21 9:30	
Quality Criteria		PSQG			CSQG																	
PARAMETER	Units	O.Reg. 153/04 & LEL	SEL	PEL																		
PHYSICAL																						
Moisture	%				30	32	43	44	23	20	19	37	51	40	29	25	24	45	20	20	21	
ANIONS & NUTRIENTS																						
Total Ammonia-N	ug/g				168	238	387	454	22	90	98	349	219	228	65	145	133	428	35	99	146	
Nitrogen (N)	%				0.12	0.14	0.24	0.28	0.066	0.052	0.045	0.15	0.29	0.16	0.11	0.093	0.12	0.36	0.048	0.058	0.063	
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800		1200	1390	2440	2830	655	515	451	1510	2950	1610	1060	932	1150	3590	479	582	629	
Nitrite (N)	ug/g				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Nitrate (N)	ug/g				<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Nitrate + Nitrite (N)	ug/g				<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
METALS																						
Acid Extractable Aluminum (Al)	ug/g				7300	10000	14000	15000	6900	6500	6100	9800	11000	10000	6500	7700	7000	14000	5300	6400	6000	
Acid Extractable Antimony (Sb)	ug/g				0.75	2.2	3.2	3	0.78	0.52	0.68	3.2	1.4	0.77	5.4	1.6	3.8	3.7	0.41	0.41	0.36	
Acid Extractable Arsenic (As)	ug/g	6	33	17	4.6	6.1	9.2	9.7	3.3	3.9	3.7	6.8	5.4	5.8	4.3	4.7	5.1	11	3.1	3.6	3.7	
Acid Extractable Barium (Ba)	ug/g				78	190	370	260	74	69	64	230	120	97	65	100	130	260	68	63	62	
Acid Extractable Beryllium (Be)	ug/g				0.42	0.54	0.68	0.73	0.39	0.37	0.35	0.54	0.6	0.53	0.35	0.45	0.4	0.74	0.31	0.39	0.34	
Acid Extractable Bismuth (Bi)	ug/g				<1.0	<1.0	1.7	2.7	<1.0	1.1	<1.0	1.4	<1.0	<1.0	<1.0	1.1	3.9	<1.0	<1.0	<1.0	<1.0	
Acid Extractable Boron (B)	ug/g				21	34	57	46	18	21	21	45	21	18	30	47	82	15	22	25	25	
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5	0.99	12	44	29	0.63	0.6	0.66	18	0.96	1.2	0.85	10	22	76	0.56	0.7	0.86	
Acid Extractable Calcium (Ca)	ug/g				67000	59000	54000	52000	70000	69000	68000	60000	68000	65000	69000	70000	63000	53000	73000	70000	70000	
Acid Extractable Chromium (Cr)	ug/g	26	110	90	24	45	90	67	21	21	18	51	34	28	21	37	63	280	18	18	19	
Acid Extractable Cobalt (Co)	ug/g				7.9	14	20	16	6.9	6.4	6.1	15	9.2	8.8	6.9	11	18	21	5.5	6.4	6.3	
Acid Extractable Copper (Cu)	ug/g	16	110	197	55	90	220	170	66	44	59	120	95	64	57	90	160	410	43	52	52	
Acid Extractable Iron (Fe)	ug/g	2%	4%		20000	21000	26000	29000	23000	19000	18000	22000	25000	23000	19000	20000	18000	30000	18000	19000	17000	
Acid Extractable Lead (Pb)	ug/g	31	250	91.3	50	120	230	220	89	41	72	140	55	54	69	93	140	240	70	51	63	
Acid Extractable Magnesium (Mg)	ug/g				20000	14000	14000	13000	19000	17000	14000	21000	19000	18000	16000	15000	14000	16000	16000	16000	13000	
Acid Extractable Manganese (Mn)	ug/g	460	1100		500	540	560	570	460	470	460	540	530	570	460	510	610	430	480	480	480	
Acid Extractable Molybdenum (Mo)	ug/g				0.86	0.89	1.5	1.3	0.79	0.65	0.57	0.99	1.6	0.77	0.93	0.91	3.2	0.62	0.58	0.59	0.59	
Acid Extractable Nickel (Ni)	ug/g	16	75		20	58	91	62	16	16	15	68	24	23	21	29	43	91	12	15	17	
Acid Extractable Phosphorus (P)	ug/g				1100	1700	2300	2100	1200	920	1600	1500	1300	980	1300	1300	2500	950	920	1000	1000	
Acid Extractable Potassium (K)	ug/g				1400	1700	2100	2200	1500	1400	1200	1700	2000	1600	1300	1400	1200	2100	1200	1300	1200	
Acid Extractable Selenium (Se)	ug/g				<0.50	<0.50	0.67	0.73	<0.50	<0.50	<0.50	0.71	<0.50	<0.50	<0.50	0.84	<0.50	<0.50	<0.50	<0.50	<0.50	
Acid Extractable Silver (Ag)	ug/g				0.73	3.6	16	9.4	<0.20	1.6	0.21	6.1	0.86	0.56	0.28	3.1	5	11	<0.20	0.25	0.75	
Acid Extractable Sodium (Na)	ug/g				240	260	360	290	260	220	200	300	500	350	250	280	230	400	220	210	220	
Acid Extractable Strontium (Sr)	ug/g				130	120	130	110	130	120	120	130	170	140	110	120	82	100	120	120	120	
Acid Extractable Thallium (Tl)	ug/g				0.14	0.14	0.22	0.24	0.12	0.11	0.1	0.15	0.22	0.16	0.13	0.13	0.25	0.095	0.11	0.11	0.11	
Acid Extractable Tin (Sn)	ug/g				3.3	8.7	22	34	3.7	7.6	4.2	9.9	8.8	4.5	14	6.7	8.6	81	2.5	3.3	3.3	
Acid Extractable Uranium (U)	ug/g				0.58	0.63	0.76	0.73	0.61	0.54	0.48	0.62	0.76	0.56	0.57	0.54	0.49	0.87	0.54	0.5	0.43	
Acid Extractable Vanadium (V)	ug/g				23	24	31	21	29	24	31	22	27	25	21	20	21	28	23	22	19	
Acid Extractable Zinc (Zn)	ug/g	120	820	315	260	450	780	870	260	210	170	430	430	330	260	340	530	1500	200	240	170	
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486	0.38	0.46	0.78	1.1	0.098	0.44	1.8	0.14	0.44	0.46	0.17	0.51	0.53	0.6	1.5	0.12	0.43	
PAHs																						
Acenaphthene	ug/g				88.9	0.13	0.27	0.15	0.37	0.094	<0.050	0.26	0.39	<0.10	0.074	<0.050	0.11	0.37	0.67	<0.050	<0.050	0.058
Acenaphthylene	ug/g				128	<0.050	<0.050	<0.10	0.11	<0.050	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.22	370	245	0.14	0.19	0.17	0.32	0.16	0.16	0.43	0.26	0.11	0.08	0.1	0.3	0.41	<0.050	<0.050	<0.050	0.086	
Benzo(a)anthracene	ug/g	0.32	1480	385	0.75	0.46	0.5	0.9	0.66	0.26	1	0.64	0.56	0.57	0.43	0.37	0.92	0.86	0.15	0.23	0.32	
Benzo(a)pyrene	ug/g	0.37	1440	782	0.72	0.41	0.48	0.78	0.62	0.3	0.69	0.54	0.66	0.61	0.44	0.36	0.85	0.75	0.16	0.23	0.3	
Benzo(b)fluoranthene	ug/g				1.2	0.59	0.77	1.2	0.97	0.5	1	0.83	1.1	0.69	0.6	1.2	1.1	0.26	0.39	0.45	0.45	
Benzo(g,h,i)perylene	ug/g	0.17	320		0.53	0.25	0.38	0.52	0.44	0.26	0.32	0.31	0.54	0.48	0.36	0.3	0.62	0.55	0.14	0.19	0.22	
Benzo(k)fluoranthene	ug/g	0.24	1340		0.4	0.22	0.27	0.43	0.35	0.18	0.27	0.32	0.25	0.3	0.21	0.18	0.42	0.39	0.092	0.11	0.16	
Chrysene	ug/g	0.34	460	862	0.95	0.48	0.52	0.99	0.68	0.33	0.98	0.66	0.8	0.76	0.57	0.44	0.9	1	0.2	0.29	0.4	
Dibenzo(a,h)anthracene	ug/g	0.06	130	135	0.12	0.065	0.1	0.15	0.1	<0.050	0.078	0.1	<0.10	0.091	0.051	<0.050	0.13	0.1	<0.050	<0.050	<0.050	
Fluoranthene	ug/g	0.75	1020	2355	2.9	1.5	1.5	2.5	2.1	0.86	3.1	2.1	2.2	2	1.4	1.1	2.1	2.3	0.57	0.79	1.2	
Fluorene	ug/g	0.19	160	144	0.13	0.19	0.21	0.32	0.085	<0.050	0.24	0.29	<0.10	0.091	<0.050	0.096	0.3	0.39	<0.050	<0.050	0.064	
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320		0.59	0.29	0.37	0.6	0.45	0.25	0.4	0.36	0.56	0.51	0.38	0.32	0.66	0.63	0.15	0.21	0.24	
Methylnaphthalene, 2-(1-)	ug/g			201	0.16	<0.071	0.31	0.38	<0.071	<0.071	<0.071	0.28	<0.14	<0.071	<0.071	<0.071	0.35	0.58	<0.071	<0.071	<0.071	
1-Methylnaphthalene	ug/g				0.066	<0.050	0.16	<0.050	0.18	<0.050	0.17	<0.050	<0.050	<0.050	<0.050	<0.050	0.12	0.32	<0.050	<0.050	<0.050	
2-Methylnaphthalene	ug/g				0.096	<0.050	0.14	0.21	<0.050	<0.050	<0.050	0.11	<0.10	<0.050	<0.050	0.051	0.23	0.26	<0.050	<0.050	<0.050	
Naphthalene	ug/g			391	0.19																	

Table A1: Chedoke Creek Sediment Sample Analytical Results

Station					CC-C26-CENTRE-45-60	CC-C26-EAST-0-15	CC-C26-EAST-15-30	CC-C26-EAST-30-45	CC-C26-EAST-45-60				
Sample ID					4/21/21 9:30	4/21/21 9:00	4/21/21 9:00	4/21/21 9:00	4/21/21 9:00				
Sampling Date and Time													
PARAMETER	Quality Criteria	Units	PSQG		SEL	CSQG	PEL						
			O.Reg. 153/04 & LEL	SEL									
PHYSICAL													
Moisture	%							25	46	38	33	41	
ANIONS & NUTRIENTS													
Total Ammonia-N	ug/g							210	205	249	244	462	
Nitrogen (N)	%							0.081	0.25	0.16	0.14	0.19	
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800					815	2480	1640	1380	1900	
Nitrite (N)	ug/g							<0.5	<0.5	<0.5	<0.5	<0.5	
Nitrate (N)	ug/g							<2	<2	<2	<2	<2	
Nitrate + Nitrite (N)	ug/g							<3	<3	<3	<3	<3	
METALS													
Acid Extractable Aluminum (Al)	ug/g							6800	11000	11000	9600	12000	
Acid Extractable Antimony (Sb)	ug/g							0.47	1.1	0.74	0.79	3.8	
Acid Extractable Arsenic (As)	ug/g	6	33	17				4	5.3	5.9	5.1	8.9	
Acid Extractable Barium (Ba)	ug/g							80	110	96	99	320	
Acid Extractable Beryllium (Be)	ug/g							0.39	0.57	0.57	0.51	0.63	
Acid Extractable Bismuth (Bi)	ug/g							<1.0	<1.0	<1.0	<1.0	1.1	
Acid Extractable Boron (B)	ug/g							33	27	30	35	65	
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5				1.4	1.1	1.3	1.8	26	
Acid Extractable Calcium (Ca)	ug/g							68000	73000	73000	68000	58000	
Acid Extractable Chromium (Cr)	ug/g	26	110	90				24	31	29	30	72	
Acid Extractable Cobalt (Co)	ug/g							7.9	8.8	9.4	8.7	20	
Acid Extractable Copper (Cu)	ug/g	16	110	197				70	81	62	71	150	
Acid Extractable Iron (Fe)	ug/g	2%	4%					20000	24000	24000	23000	26000	
Acid Extractable Lead (Pb)	ug/g	31	250	91.3				110	44	53	75	190	
Acid Extractable Magnesium (Mg)	ug/g							15000	21000	20000	18000	15000	
Acid Extractable Manganese (Mn)	ug/g	460	1100					510	550	590	560	600	
Acid Extractable Molybdenum (Mo)	ug/g							0.69	1.2	1	0.95	2.8	
Acid Extractable Nickel (Ni)	ug/g	16	75					22	23	23	23	76	
Acid Extractable Phosphorus (P)	ug/g							1000	1300	1200	1300	2000	
Acid Extractable Potassium (K)	ug/g							1200	2000	1900	1600	1700	
Acid Extractable Selenium (Se)	ug/g							<0.50	0.58	0.51	<0.50	0.67	
Acid Extractable Silver (Ag)	ug/g							1.9	0.52	0.46	1.1	7.6	
Acid Extractable Sodium (Na)	ug/g							260	460	330	270	320	
Acid Extractable Strontium (Sr)	ug/g							120	190	170	130	130	
Acid Extractable Thallium (Tl)	ug/g							0.11	0.2	0.18	0.15	0.17	
Acid Extractable Tin (Sn)	ug/g							6.8	3.8	4.5	7.3	17	
Acid Extractable Uranium (U)	ug/g							0.51	0.65	0.57	0.63	0.67	
Acid Extractable Vanadium (V)	ug/g							21	25	25	25	26	
Acid Extractable Zinc (Zn)	ug/g	120	820	315				240	400	340	300	690	
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486				1.3	0.11	0.16	0.54	0.57	
PAHs													
Acenaphthene	ug/g							88.9	0.082	<0.10	0.063	0.088	0.56
Acenaphthylene	ug/g							128	<0.050	<0.10	<0.050	<0.050	<0.050
Anthracene	ug/g	0.22	370	245				0.14	<0.10	0.12	0.11	0.26	
Benzo(a)anthracene	ug/g	0.32	1480	385				0.31	0.56	0.6	0.51	0.48	
Benzo(a)pyrene	ug/g	0.37	1440	782				0.26	0.69	0.65	0.55	0.43	
Benzo(b)fluoranthene	ug/g							0.39	1.1	0.97	0.8	0.7	
Benzo(g,h,i)perylene	ug/g	0.17	320					0.2	0.62	0.54	0.45	0.31	
Benzo(k)fluoranthene	ug/g	0.24	1340					0.14	0.31	0.35	0.29	0.21	
Chrysene	ug/g	0.34	460	862				0.35	0.79	0.79	0.67	0.51	
Dibenzo(a,h)anthracene	ug/g	0.06	130	135				<0.050	<0.10	0.08	0.067	0.053	
Fluoranthene	ug/g	0.75	1020	2355				0.99	2.1	1.9	1.8	1.6	
Fluorene	ug/g	0.19	160	144				0.11	<0.10	0.072	0.087	0.36	
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320					0.22	0.66	0.6	0.49	0.34	
Methylnaphthalene, 2-(1-)	ug/g			201				<0.071	<0.14	<0.071	<0.071	0.32	
1-Methylnaphthalene	ug/g							<0.050	<0.10	<0.050	<0.050	0.2	
2-Methylnaphthalene	ug/g							<0.050	<0.10	<0.050	<0.050	0.12	
Naphthalene	ug/g			391				<0.050	<0.10	<0.050	<0.050	<0.050	
Phenanthrene	ug/g	0.56	950	515				0.68	0.72	0.7	0.72	1.3	
Pyrene	ug/g	0.49	850	875				0.75	1.6	1.5	1.3	1.3	
SIZE DISTRIBUTION													
< -1 Phi (2 mm)	%							99					
< 0 Phi (1 mm)	%							97					
< +1 Phi (0.5 mm)	%							94					
< +2 Phi (0.25 mm)	%							71					
< +3 Phi (0.12 mm)	%							39					
< +4 Phi (0.062 mm)	%							30					
< +5 Phi (0.031 mm)	%							26					
< +6 Phi (0.016 mm)	%							22					
< +7 Phi (0.0078 mm)	%							14					
< +8 Phi (0.0039 mm)	%							12					
< +9 Phi (0.0020 mm)	%							8.2					
Gravel	%							1.3					
Coarse Sand	%							41					
Fine Sand	%							28					
Silt	%							19					
Clay	%							12					
Loss on Ignition	%w/w							4.3					
Wet Bulk Density	g/cm3							2					
Liquid Limit	%w/w							COMMENT					
Plastic Limit	%w/w							COMMENT					
Plasticity Index	%w/w							COMMENT					
Dissolved BOD5	mg/L												

Notes

1. PSQG: Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in
2. CSQG: Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection
3. MDL: Method Detection Limit provided by Bureau Veritas, Mississauga, ON (see raw data)
4. "Less than" indicates that the reported concentration was less than the detection limit
5. **Green** shaded cells indicate concentrations that exceed the PSQG LEL
6. **Blue** shaded values indicate concentrations that exceed the PSQG SEL
7. **Purple** shaded values indicate concentrations that exceed the CSQG PEL
8. **Grey** shaded values indicate concentrations that exceed both the PSQG SEL and CSQG PEL

Table A3: Coote Paradise Sediment Sample Analytical Results

Station					CP-REF-1			CP-REF-02					
PARAMETER	Quality Criteria	Units	Sampling Date and Time		CP-REF-1-15-30	CP-REF-1-30-45	CP-REF-1-45-60	CP-REF-2-0-15	CP-REF-2-15-30	CP-REF-2-30-45	CP-REF-2-45-60	CP-REF-2-60-75	
			PSQG	CSQG	4/26/21 9:30	4/26/21 9:30	4/26/21 9:30	4/26/21 10:30	4/26/21 10:30	4/26/21 10:30	4/26/21 11:30		
			O.Reg. 153/04 & LEL	SEL	PEL								
PHYSICAL													
Moisture	%					29	38	59	59	46	51	47	44
ANIONS & NUTRIENTS													
Total Ammonia-N	ug/g					<20	72	126	39	81	102	152	210
Nitrogen (N)	%					0.078	0.27	0.63	0.27	0.22	0.26	0.32	0.3
Calculated Total Kjeldahl Nitrogen (TKN)	ug/g	550	4800			782	2670	6320	2740	2210	2590	3210	2960
Nitrite (N)	ug/g					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate (N)	ug/g					<2	<2	<2	<2	<2	<2	<2	<2
Nitrate + Nitrite (N)	ug/g					<3	<3	<3	<3	<3	<3	<3	<3
METALS													
Acid Extractable Aluminum (Al)	ug/g					5800	15000	15000	14000	15000	16000	21000	25000
Acid Extractable Antimony (Sb)	ug/g					<0.20	<0.20	<0.20	0.25	0.45	0.56	0.47	<0.20
Acid Extractable Arsenic (As)	ug/g	6	33	17		2.8	6	8.1	4.9	5.9	7.2	6.9	4.6
Acid Extractable Barium (Ba)	ug/g					40	95	120	110	110	120	130	190
Acid Extractable Beryllium (Be)	ug/g					0.28	0.66	0.65	0.66	0.66	0.69	0.88	1.1
Acid Extractable Bismuth (Bi)	ug/g					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acid Extractable Boron (B)	ug/g					<5.0	6.2	6.1	8.2	11	12	15	7.4
Acid Extractable Cadmium (Cd)	ug/g	0.6	10	3.5		0.25	0.34	0.35	0.7	1.3	2.5	1.7	0.19
Acid Extractable Calcium (Ca)	ug/g					55000	44000	16000	96000	82000	70000	48000	22000
Acid Extractable Chromium (Cr)	ug/g	26	110	90		11	22	21	24	28	33	41	32
Acid Extractable Cobalt (Co)	ug/g					5.2	11	11	10	11	12	13	13
Acid Extractable Copper (Cu)	ug/g	16	110	197		20	39	39	41	48	53	44	31
Acid Extractable Iron (Fe)	ug/g	2%	4%			14000	25000	25000	27000	29000	30000	33000	36000
Acid Extractable Lead (Pb)	ug/g	31	250	91.3		15	32	27	33	51	69	68	15
Acid Extractable Magnesium (Mg)	ug/g					11000	13000	10000	11000	12000	12000	10000	9000
Acid Extractable Manganese (Mn)	ug/g	460	1100			430	810	410	870	780	720	630	480
Acid Extractable Molybdenum (Mo)	ug/g					<0.50	0.57	0.68	0.8	0.72	0.74	0.77	0.77
Acid Extractable Nickel (Ni)	ug/g	16	75			12	25	26	25	30	38	38	34
Acid Extractable Phosphorus (P)	ug/g					770	890	870	890	940	1100	1000	800
Acid Extractable Potassium (K)	ug/g					760	1800	1600	2200	2000	2100	2800	2900
Acid Extractable Selenium (Se)	ug/g					<0.50	<0.50	<0.50	<0.50	0.72	0.74	0.65	<0.50
Acid Extractable Silver (Ag)	ug/g					<0.20	<0.20	<0.20	<0.20	0.44	0.75	0.35	<0.20
Acid Extractable Sodium (Na)	ug/g					120	170	180	270	250	270	240	210
Acid Extractable Strontium (Sr)	ug/g					96	81	43	350	230	160	110	67
Acid Extractable Thallium (Tl)	ug/g					0.11	0.14	0.14	0.22	0.25	0.28	0.28	0.2
Acid Extractable Tin (Sn)	ug/g					1.1	1.4	<1.0	1.8	3.2	3.9	3.3	<1.0
Acid Extractable Uranium (U)	ug/g					0.33	0.55	0.78	0.54	0.56	0.59	0.78	0.88
Acid Extractable Vanadium (V)	ug/g					15	28	28	25	28	29	34	39
Acid Extractable Zinc (Zn)	ug/g	120	820	315		94	220	270	250	280	320	210	98
Acid Extractable Mercury (Hg)	ug/g	0.2	2	0.486		<0.050	<0.050	<0.050	<0.050	0.12	0.13	0.096	<0.050
PAHs													
Acenaphthene	ug/g				88.9	<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	ug/g				128	<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	ug/g	0.22	370	245		<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)anthracene	ug/g	0.32	1480	385		0.054	<0.050	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	ug/g	0.37	1440	782		0.059	0.054	<0.10	<0.10	0.1	0.1	<0.10	<0.10
Benzo(b)fluoranthene	ug/g					0.1	0.079	<0.10	0.16	0.21	0.19	0.17	<0.10
Benzo(g,h,i)perylene	ug/g	0.17	320			<0.050	0.068	<0.10	<0.10	<0.10	<0.10	0.12	<0.10
Benzo(k)fluoranthene	ug/g	0.24	1340			<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	ug/g	0.34	460	862		0.064	<0.050	<0.10	<0.10	0.11	<0.10	<0.10	<0.10
Dibenzo(a,h)anthracene	ug/g	0.06	130	135		<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	ug/g	0.75	1020	2355		0.11	<0.050	<0.10	0.16	0.17	0.19	0.16	<0.10
Fluorene	ug/g	0.19	160	144		<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Indeno(1,2,3-cd)pyrene	ug/g	0.2	320			<0.050	0.051	<0.10	<0.10	<0.10	<0.10	0.12	<0.10
Methylnaphthalene, 2-(1-)	ug/g				201	<0.071	<0.071	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
1-Methylnaphthalene	ug/g					<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2-Methylnaphthalene	ug/g					<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Naphthalene	ug/g				391	<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	ug/g	0.56	950	515		<0.050	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	ug/g	0.49	850	875		0.094	<0.050	<0.10	0.14	0.15	0.16	0.15	<0.10
SIZE DISTRIBUTION													
< -1 Phi (2 mm)	%												
< 0 Phi (1 mm)	%												
< +1 Phi (0.5 mm)	%												
< +2 Phi (0.25 mm)	%												
< +3 Phi (0.12 mm)	%												
< +4 Phi (0.062 mm)	%												
< +5 Phi (0.031 mm)	%												
< +6 Phi (0.016 mm)	%												
< +7 Phi (0.0078 mm)	%												
< +8 Phi (0.0039 mm)	%												
< +9 Phi (0.0020 mm)	%												
Gravel	%												
Coarse Sand	%												
Fine Sand	%												
Silt	%												
Clay	%												
Loss on Ignition	%w/w												
Wet Bulk Density	g/cm3												
Liquid Limit	%w/w												
Plastic Limit	%w/w												
Plasticity Index	%w/w												
Dissolved BOD5	mg/L												

Notes

1. PSQG: Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in Ontario
2. CSQG: Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. MDL: Method Detection Limit provided by Bureau Veritas, Mississauga, ON (see raw data)
4. "Less than" indicates that the reported concentration was less than the detection limit
5. Green shaded cells indicate concentrations that exceeded the PSQG LEL
6. Blue shaded values indicate concentrations that exceeded the PSQG SEL
7. Purple shaded values indicate concentrations that exceeded the CSQG PEL
8. Grey shaded values indicate concentrations that exceeded both the PSQG SEL and CSQG PEL