

Appendix B to the *Douglas Shoal remediation project: Site assessment report (2019)*



Laboratory Analysis Report

Douglas Shoal Remediation Project

Great Barrier Reef Marine Park Authority

26/07/19

Advisian

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Australian Government

**Great Barrier Reef
Marine Park Authority**

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301001-02112-EN-REP-0003 – Laboratory Analysis Report

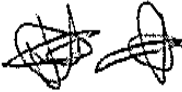


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Publication note: Appendices not publicly released

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Appendix H	Work Order EB1907623
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Appendix CC	Certified Reference Material Certificates of Analysis

1 Report structure

This Laboratory Analysis Report provides the collated physical (Particle Size Distribution – PSD and Settleability) and chemical results from the laboratory analysis of sediments collected from Douglas Shoal during the Sediment sampling field trip in March 2019.

The collated results for each Priority and Reference Area (and sub-Areas) are in specific sections of this report as follows:

- Priority Area A – Section 2
- Priority Area C – Section 3
- Priority Area E – Section 4
- Priority Area F – Section 5
- Reference Area 1 and 2 – Section 6

Quality Assurance and Quality Control analyses are provided in Section 7

A summary of the primary laboratory (ALS) workorders, the analyses assigned and the sampling site Identification (Site ID) are provide in Table 1-1. A summary of the secondary laboratory (NMI) workorders, analyses assigned and the sampling site Identification (Site ID) are provided in Table 1-2. The corresponding laboratory reports for each workorder are provided in the Appendices as referenced in Table 1-1 and Table 1-2.

Detailed analysis on these results will be provided in the Site Assessment Report.

Table 1-1: Summary of primary laboratory (ALS) workorders and site IDs with Appendix reference

Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
EB1906947	Appendix A	Sediment	Metals, TBT & Total Organic Carbon (TOC)	C2-1	C2-9	F2-3
				C2-2	C2-10	F2-4
				C2-3	C2-11	F2-5
				C2-4	C2-12	F2-6
				C2-5	E4-1	F2-7
				C2-6	E4-7	F2-8
				C2-7	E4-9	F2-9
				C2-8	E4-11	F2-10
				E4-3	F2-1	F2-11

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
				E4-5	F2-2	F2-12
EB1906960	Appendix B	Sediment	Metals, TBT & TOC	A3-1	A6-4 (T3)	A8-5
				A3-3	A6-5	E3-1
				A3-5	A6-6	E3-3
				A3-7	A6-7	E3-5
				A3-9	A6-8	E3-7
				A3-11	A6-9	E3-9
				A6-1	A6-10	E3-11
				A6-2	A6-11	F1-1
				A6-3	A6-12	D1
				A6-4 (T1)	A8-1	D3
				A6-4 (T2)		
EB1906960	Appendix B	Sediment	Reanalysis – Metals, TBT & TOC	A3-5	A6-8	A8-1
				A6-3	A6-9	
EB1906964	Appendix C	Sediment	Metals, TBT & TOC	A2-1	C1-1	E2-3
				A2-3	C1-3	E2-5
				A2-5	C1-5	E2-7
				A2-7	C1-7	E2-9
				A2-9	C1-9	E2-11 (T1)
				A2-11	C1-11	E2-11 (T2)
				A4-1	E1-1	E2-11 (T3)
				A4-3	E1-3	EX-1
				A4-5	E1-5	EX-3
				A4-7	E1-7	EX-5
				A4-9	E1-9	EX-7
				A4-11	E1-11	EX-9
				A5-1	E2-1	EX-11
				A5-3		

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
EB1906974	Appendix D	Sediment	Metals, TBT & TOC	A5-5	A5-11	AX-9
				A5-7	AX-1	AX-11
				A5-9 (T1)	AX-3	D5
				A5-9 (T2)	AX-5	D7
				A5-9 (T3)	AX-7	
EB1906974	Appendix D	Water (rinsate)	Metals	Rinsate #1 Rinsate #2	Rinsate #3 Rinsate #4	Rinsate #5
EB1907617	Appendix E	Sediment	Metals, TBT & TOC	C3-1	C4-5	R1-5
				C3-3	C4-7	R1-7
				C3-5	C4-9	R1-9
				C3-7	C4-11 (T1)	R1-11
				C3-9	C4-11 (T2)	D10
				C3-11	C4-11 (T3)	D12
				C4-1	R1-1	D14
				C4-3	R1-3	D16
EB1907620	Appendix F	Sediment	Metals, TBT & TOC	A7-1	CX-5	F3-3
				A7-3	CX-7	F3-5
				A7-5	CX-9 (T1)	F3-9
				A7-7	CX-9 (T2)	F3-11
				A7-9	CX-9 (T3)	R2-1
				A7-11	CX-11	R2-3
				A8-3	F1-3	R2-5
				A8-7	F1-5	R2-7 (T1)
				A8-9	F1-7	R2-7 (T2)
				A8-11	F1-9	R2-7 (T3)
				CX-1	F1-11	R2-9
				CX-3	F3-1	R2-11
EB1907622	Appendix G	Sediment	Metals, TBT & TOC	A3-10	E3-10	FX-2

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
				A4-6	F1-12	FX-3
				A5-4	F2-2a	FX-4
				A6-4a	F2-13	FX-5
				A6-8a	F2-14	FX-6
				A6-10a	F3-2	FX-7
				A7-4	F3-4	FX-8
				A8-6	F3-6	FX-9
				C2-8b	F3-7	FX-10
				C4-6	F3-8	FX-11
				C4-8	F3-10	FX-12
				E1-6	FX-1	
EB1907622	Appendix G	Sediment	Reanalysis – Metals, TBT & TOC	F3-6		
EB1907623	Appendix H	Sediment	Metals, TBT & TOC	A4-1a	A5-10	CX-6
				A4-2	A5-12	CX-8
				A4-4	AX-2	CX-10
				A4-8	AX-4	CX-12
				A4-10	AX-6	EX-2
				A4-12	AX-8	EX-4
				A5-2	AX-10	EX-6
				A5-6	AX-12	EX-8
				A5-8 (T1)	CX-2	EX-10
				A5-8 (T2)	CX-4	EX-12
				A5-8 (T3)		
EB1907624	Appendix I	Sediment	Metals, TBT & TOC	A1-2	A1-10	A3-6
				A1-4	A1-12	A3-8
				A1-6	A3-2	A3-10a
				A1-8	A3-4	A3-12

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
EB1907624	Appendix I	Water (rinsate)	Metals	Rinsate #6 Rinsate #7 Rinsate #8	Rinsate #9 Rinsate #10	Rinsate #11 Rinsate #12
EB1907810	Appendix J	Sediment	Metals, TBT & TOC	A1-1 A1-3	A1-5 A1-7	A1-9 A1-11
EB1906982	Appendix K	Sediment	PSD & Settling Rate	C2-1 C2-2 C2-10 C2-3 C2-5 C2-6 C2-7 C2-8 C2-9	C2-11 E4-1 E4-3 E4-7 E4-9 E4-11	F2-5 F2-6 F2-7 F2-8 F2-9 F2-10 F2-11 F2-12
EB1906986	Appendix L	Sediment	PSD & Settling Rate	A5-5 A5-7 A5-11	AX-1 AX-3 AX-5	AX-7 AX-9
EB1906987	Appendix M	Sediment	PSD & Settling Rate	A2-1 A2-3 A2-5 A2-7 A2-9 A2-11 A4-1 A4-3 A4-5 A4-7	A5-3 C1-1 C1-3 C1-5 C1-7 C1-9 C1-11 E1-1 E1-3 E1-5	E2-1 E2-3 E2-7 E2-9 E2-11 (T1) E2-11 (T2) E2-11 (T3) EX-1 EX-3 EX-7

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
				A4-9	E1-7	EX-9
				A4-11	E1-9	EX-11
				A5-1	E1-11	
EB1906993	Appendix N	Sediment	PSD & Settling Rate	A3-1	A6-4 (T2)	F1-1
				A3-3	A6-4 (T3)	E3-1
				A3-5	A6-5	E3-3
				A3-7	A6-8	E3-5
				A3-9	A6-9	E3-7
				A3-11	A6-10	E3-9
				A6-1	A6-11	E3-11
				A6-2	A6-12	D1
				A6-3	A8-1	D3
				A6-4 (T1)	A8-5	
EB1907628	Appendix O	Sediment	PSD & Settling Rate	C3-1	C4-5	R1-1
				C3-3	C4-7	R1-3
				C3-5	C4-9	R1-7
				C3-7	C4-11 (T1)	R1-9
				C3-9	C4-11 (T2)	R1-11
				C3-11	C4-11 (T3)	D16
				C4-3		
EB1907630	Appendix P	Sediment	PSD & Settling Rate	A7-1	CX-1	R2-1
				A7-3	CX-7	F1-11
				A7-5	CX-9 (T1)	F3-3
				A7-7	CX-9 (T2)	F3-5
				A7-9	CX-9 (T3)	F3-11
				A7-11	CX-11	R2-3
				A8-3	F1-3	R2-5
				A8-7	F1-5	R2-7 (T1)
				A8-9	F1-7	R2-7 (T2)

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
				A8-11	F1-9	R2-7 (T3)
				CX-3	F3-1	R2-9
				CX-5	F3-9	R2-11
EB1907633	Appendix Q	Sediment	PSD & Settling Rate	A3-10	C4-8	F3-7
				A4-6	E1-6	F3-10
				A5-4	E3-10	FX-1
				A6-4a	F2-2a	FX-3
				A6-8a	F2-13	FX-5
				A6-10a	F2-14	FX-7
				A7-4	F3-2	FX-8
				A8-6	F3-4	FX-9
				C2-8b	F3-6	FX-11
				C4-6		
EB1907638	Appendix R	Sediment	PSD	A4-1a	A5-8 (T2)	EX-12
				A4-8	A5-8 (T3)	CX -2
				A4-12	AX-4	CX-6
				A5-8 (T1)	EX-4	
EB1907639	Appendix S	Sediment	PSD	A1-12	A3-10a	A3-12
EB1907813	Appendix T	Sediment	PSD	A1-1	A1-5	A1-9
				A1-3	A1-7	A1-11
EB1908498	Appendix U	Sediment	Elutriate Re-batch - TBT & Zineb	A5-5	A5-9 (T1)	A5-9 (T3)
				A5-7	A5-9 (T2)	A5-11
EB1909443	Appendix V	Sediment	Elutriate Re-batch - TBT, Zineb & Metals	A3-1	A6-4 (T2)	C2-1
				A3-3	A6-4 (T3)	C2-3
				A3-5	A6-7	C2-4
				A3-9	A6-8	C2-9
				A3-11	A6-9	C2-10
				A6-1	A6-10	C2-12

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Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID		
				A6-2	A6-11	E3-9
				A6-3	A6-12	D1
				A6-4 (T1)	A8-1	D3
EB1909703	Appendix W	Sediment	Elutriate Re-batch - TBT, Zineb & Metals	A4-1	C1-9	C4-5
				A4-5	C3-1	C4-7
				A4-9	C3-3	C4-9
				A4-11	C3-9	C4-11 (T1)
				A5-3	C3-11	C4-11 (T3)
				C1-3	EX-7	D12
				C1-7	C4-3	
EB1910331	Appendix X	Sediment	Elutriate Re-batch - TBT & Zineb	A5-2	A7-1	CX-8
				A5-6	A7-9	R2-7 (T1)
				A4-4	A8-9	R2-7 (T2)
				A4-8	AX-2	R2-7 (T3)
				A4-10	AX-4	
EB1910617	Appendix Y	Sediment	Elutriate Re-batch - TBT, Zineb & Metals	A3-2	A3-12	A6-10a
				A3-4	A4-6	A8-6
				A3-6	A5-4	C4-6
				A3-10	A6-4a	C4-8
				A3-10a	A6-8a	E3-10
EB1910608	Appendix Z	Sediment	Triplicate Reanalysis – TBT	A8-9	C2-10	CX-9 (T3)
				AX-2	CX-8	EX-7
				C2-4		

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Table 1-2 Summary of secondary laboratory (NMI) workorders and site IDs with Appendix reference

Workorder	Appendix Reference	Matrix	Analysis Assigned	Site ID	
ADV102_190321	Appendix AA	Sediment	Metals, TBT & TOC	D2 D4	D6 D8
ADV102_190321/1	Appendix AA	Sediment	Re-batch – metals, TBT & TOC	D2	D4
ADV102_190328	Appendix BB	Sediment	Metals, TBT & TOC	D9 D11	D13 D15
ADV102_190328/1	Appendix BB	Sediment	Re-batch – metals, TBT & TOC	D11	D15

2 Results – Priority Area A

2.1 Area A1

The notes provided below are applicable to the collated information provided in this section.

Notes

PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

2.1.1 Sediment Contamination Results

Table 2-1: Sediment Contamination results for Area A1

Work Order No.					EB1907810001	EB1907624007	EB1907810002	EB1907624008	EB1907810003	EB1907624009	EB1907810004	EB1907624010	EB1907810005	EB1907624011	EB1907810006	EB1907624012	ADV102-190328	EB1907617013
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A1-1	A1-2	A1-3	A1-4	A1-5	A1-6	A1-7	A1-8	A1-9	A1-10	A1-11	A1-12	D15	D16
Date Sampled					11/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019	20/03/2019	20/03/2019	15/03/2019
Misc																		
% Moisture	%	1	0.1	-	38.6	27.6	16.4	30.2	42.2	16.5	17.9	23.4	26.1	34.5	37.3	15.1	-	28.2
Total Organic Carbon	%	0.02	0.1	-	0.23	0.18	0.18	0.17	0.19	0.09	0.25	0.12	0.29	0.17	0.19	0.15	0.60	0.25
Total Metals and Metalloids																		
Aluminium, Al	mg/kg	50	200	-	280	300	430	250	350	420	230	150	140	490	490	820	300	180
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50
Arsenic, As	mg/kg	1	1	20	1.76	1.45	1.47	1.4	1.67	1.09	1.1	1.45	1.76	1.51	1.47	1.66	1.00	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2
Chromium, Cr	mg/kg	1	1	80	4.4	3.3	4.1	4.3	4.4	2.2	2.6	4	3.7	4.5	3.7	4.6	3.3	3.1
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.2	0.85	4
Iron, Fe	mg/kg	50	100	-	250	260	420	280	320	330	220	170	140	400	380	590	250	210
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Manganese, Mn	mg/kg	10	10	-	14	10	13	<10	13	10	<10	13	10	12	11	14	11	14
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01
Nickel, Ni	mg/kg	1	1	21	1.5	1.1	1.1	1.1	1.4	<1.0	1	1.3	1.3	1.2	1.3	1.3	1.3	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2
Vanadium, V	mg/kg	2	2	-	2.4	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	<2.0	2.2	2.3	<2.0	2.1	0.9	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	1	<1.0	4	1.1	<1.0
1ML HCL Metals and Metalloids																		
Aluminium, Al	mg/kg	50	200	-	70	60	70	<50	90	80	80	70	60	130	110	90	120	110
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0
Arsenic, As	mg/kg	1	1	20	1.3	1.2	1.3	1.4	1.4	1.2	1.2	1.3	1.5	1.6	1.4	<1.0	0.9	1.2
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.12
Chromium, Cr	mg/kg	1	1	80	3.2	2.7	2.9	2.6	3.2	4	3.1	3.3	2.5	5.4	2.8	3.2	3.30	2.9
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	4.7	<1.0	<1.0	<1.0	4	<1.0	14.4	0.8	<1.0
Iron, Fe	mg/kg	50	100	-	90	80	90	80	110	110	100	80	80	160	110	120	120	120
Lead, Pb	mg/kg	1	1	50	<1.0	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Manganese, Mn	mg/kg	10	10	-	14	12	12	16	13	12	11	11	12	16	12	13	16	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.8	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.7	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	3.7	<1.0	<1.0	<1.0	3.2	<1.0	8.5	0.8	<1.0
Organotins																		
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<4	1	0.8	<1
Normalised to % TOC	µg Sn/kg	-	-	-												5.0	1.4	
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1
Normalised to % TOC	µg Sn/kg	-	-	-														
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9													1.2	

2.1.2 PSD and Settleability Results

Table 2-2: PSD and Settleability results for Area A1

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1907813001	A1-1	11/03/2019	1	<1	90	9	<1	2.47	-	-	-	-	-	-	-	-	-	-
EB1907813002	A1-3	11/03/2019	1	<1	83	16	<1	2.49	-	-	-	-	-	-	-	-	-	-
EB1907813003	A1-5	11/03/2019	1	<1	45	54	<1	2.61	-	-	-	-	-	-	-	-	-	-
EB1907813004	A1-7	11/03/2019	1	<1	55	44	<1	2.48	1.76	56.8	56.2	56.2	Clear	1.75	57	22.6	22.6	Clear
EB1907813005	A1-9	11/03/2019	1	<1	34	65	<1	2.44	-	-	-	-	-	-	-	-	-	-
EB1907813006	A1-11	11/03/2019	1	<1	75	24	<1	2.55	-	-	-	-	-	-	-	-	-	-

2.2 Area A2

The notes provided below are applicable to the collated information provided in this section.

Notes

PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

2.2.1 Sediment Contamination Results

Table 2-3: Sediment Contamination results for Area A2

Work Order No.					EB1906964033	EB1906964034	EB1906964035	EB1906964036	EB1906964037	EB1906964038
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A2-1	A2-3	A2-5	A2-7	A2-9	A2-11
Date Sampled					12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019
Misc										
% Moisture	%	1	0.1	-	26.1	25.2	28.3	27.2	24.6	36.6
Total Organic Carbon	%	0.02	0.1	-	0.16	0.16	0.2	0.14	0.19	0.18
Total Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	110	100	160	200	120	120
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.15	1.51	1.4	1.49	1.1	1.59
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	2.8	3.5	4	3.9	2.9	4.4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	1.6	1.8	1.8	1.6	1.6	1.9
Iron, Fe	mg/kg	50	100	-	140	200	230	270	170	230
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	14	11	12	<10	17
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.3	1.4	1.8	1.7	1.4	1.7
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	2.4	2.7	3	3.1	2.8	3.3
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1ML HCL Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	60	50	70	60	80	100
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.2	1.3	1.4	1.3	1.4	1.9
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	3.6	2.9	3.3	2.6	3.7	4.6
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	80	80	80	100	100	110
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	12	10	13	13	14	17
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	1
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Organotins										
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-						
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-						
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9						

2.2.2 PSD and Settleability Results

Table 2-4: PSD and Settleability results for Area A2

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906987033	A2-1	12/03/2019	5	<1	67	28	<1	2.45	1.71	58.5	54.6	54.6	Clear	1.93	57.6	22.4	22.4	Clear
EB1906987034	A2-3	12/03/2019	8	2	47	43	<1	2.36	-	-	-	-	-	-	-	-	-	-
EB1906987035	A2-5	12/03/2019	10	<1	54	36	<1	2.43	-	-	-	-	-	-	-	-	-	-
EB1906987036	A2-7	12/03/2019	8	<1	46	46	<1	2.43	-	-	-	-	-	-	-	-	-	-
EB1906987037	A2-9	12/03/2019	8	<1	52	40	<1	2.54	-	-	-	-	-	-	-	-	-	-
EB1906987038	A2-11	12/03/2019	4	<1	87	9	<1	2.4	-	-	-	-	-	-	-	-	-	-

2.3 Area A3

The notes below provide details applicable to the results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910617) or possible laboratory contamination (EB1909443).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.3.1 Sediment Contamination Results

Table 2-5: Sediment Contamination results for Area A3

Work Order No.					EB1906960017	EB1907624001	EB1906960018	EB1906960021	ADVI02-190321	EB1907624002	EB1906960019	EB1907624003	EB1906960020	EB1907624004	EB1906960023	EB1907622018	EB1907624005	EB1906960024	EB1907624006
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A3-1	A3-2	A3-3	D1	D2	A3-4	A3-5	A3-6	A3-7	A3-8	A3-9	A3-10	A3-10a	A3-11	A3-12
Date Sampled					10/03/2019	20/03/2019	10/03/2019	10/03/2019	10/03/2019	20/03/2019	10/03/2019	20/03/2019	10/03/2019	20/03/2019	11/03/2019	18/03/2019	20/03/2019	11/03/2019	20/03/2019
Misc																			
% Moisture	%	1	0.1	-	23.3	27.2	21.5	30.6	-	13.5	34.1	28.6	28	35.8	18.1	13.5	20.6	20.9	22.2
Total Organic Carbon	%	0.02	0.1	-	0.08	0.11	0.11	0.12	0.36	0.12	0.11	0.16	0.12	0.13	0.19	0.1	0.12	0.12	0.2
Total Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	200	430	350	530	450	830	370	450	180	440	360	500	670	700	320
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.22	1.12	1.27	1.48	1.10	1.12	1.2	1.45	<1.00	2.16	1.13	1.81	1.22	1.05	1.39
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	3.2	4.4	4.6	5.0	4.5	4.3	4.1	3.1	2.7	4.9	2.8	4.1	6.1	5.7	9.2
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	1.6	2.5	4.3	12.2	7.1	2.8	4.8	<1.0	1.7	<1.0	<1.0	3.2	2.2	2.7	3.6
Iron, Fe	mg/kg	50	100	-	200	370	330	430	400	560	410	380	180	370	280	620	770	570	270
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	12	13	18	13	11	14	12	10	14	15	15	10	16	20
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.3	1.1	1.5	1.3	1.4	1.2	1.4	1.2	<1.0	1.4	1.1	1.4	1.5	1.5	2.5
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	0.3	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	1.3	<2.0	<2.0	<2.0	<2.0	2.5	<2.0	2.7	2.2	<2.0	2.7
Zinc, Zn	mg/kg	1	1	200	<1.0	1.9	2.8	5.7	2.9	2.1	2.6	<1.0	1.3	<1.0	<1.0	3	1.5	3.4	2.8
1ML HCL Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	70	80	70	80	110	<50	70	60	60	120	50	60	70	110	60
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	1.2	<1.0	<1.0	0.7	1.2	<1.0	1.4	<1.0	1.8	<1.0	1	1.3	<1.0	1.3
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	2.2	3.8	2.5	3.4	3.2	1.7	2.7	2.6	2.3	5.1	2.3	4.8	3.2	4	3
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	2.3	2	2.7	5.6	<1.0	387	<1.0	4.2	<1.0	<1.0	1.1	<1.0	3.4	<1.0
Iron, Fe	mg/kg	50	100	-	60	110	70	80	130	60	80	70	70	130	60	100	80	110	80
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	18	12	14	13	<10	12	12	11	15	11	<10	11	14	12
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	0.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	2.2	1.6	2.0	2.6	<1.0	33.3	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	2.8	<1.0
Organotins																			
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	36	13	4.2	<1	16	<1	<1	<1	1	<1	4	114	<4
Normalised to % TOC	µg Sn/kg	-	-	-			180.0	65.0	11.7		80.0				5.0		20.0	570.0	
Dibutyltin	µgSn/kg	1	1	-	2	<1	233	66	0.7	<1	70	<1	<1	<1	<2	<1	2	59	<1
Normalised to % TOC	µg Sn/kg	-	-	-	10.0		1165.0	330.0	1.9		350.0						10.0	295.0	
Tributyltin	µg Sn/kg	0.5	1	-	31.8	1.4	1470	369	3.6	28.3	338	6	<0.5	<0.5	3.3	1.2	3	566	<1.0
Normalised to % TOC	µg Sn/kg	-	-	9	159.0	7.0	7350.0	1845.0	10.0	141.5	1690.0	30.0			16.5	6.0	15.0	2830.0	

2.3.2 PSD and Settleability Results

Table 2-6: PSD and Settleability results for Area A3

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
			%	%	%	%	%		g/cm ³	g/cm ³	%	mm/min		mm/min	g/cm ³	%	mm/min		mm/min
Units																			
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
<i>Size (mm)</i>			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906993014	A3-1	10/03/2019	4	<1	69	27	<1	2.48	1.4	59.4	55	55	Clear	1.54	59.2	22.2	22.2	Clear	
EB1906993015	A3-3	10/03/2019	3	<1	72	25	<1	2.29	-	-	-	-	-	-	-	-	-	-	-
EB1906993016	A3-5	10/03/2019	4	<1	69	27	<1	2.51	-	-	-	-	-	-	-	-	-	-	-
EB1906993017	A3-7	10/03/2019	2	<1	70	28	<1	2.54	1.52	60	55.4	55.4	Clear	1.49	60.8	22	22	Clear	
EB1906993020	A3-9	11/03/2019	1	3	29	67	<1	2.49	-	-	-	-	-	-	-	-	-	-	-
EB1907633018	A3-10	18/03/2019	7	5	13	75	<1	2.63	-	-	-	-	-	-	-	-	-	-	-
EB1907639001	A3-10a	20/03/2019	2	<1	20	78	<1	2.58	-	-	-	-	-	-	-	-	-	-	-
EB1906993021	A3-11	11/03/2019	3	<1	20	77	<1	2.51	1.59	62.8	56.2	56.2	Clear	1.62	61.9	22.4	22.4	Clear	
EB1907639002	A3-12	20/03/2019	2	<1	12	86	<1	2.68	-	-	-	-	-	-	-	-	-	-	-

2.3.3 Elutriate Results

Table 2-7: Elutriate results for Area A3

Work Order No.	Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909443020	EB1910617011	EB1909443021	EB1910617012	EB1909443022	EB1910617013	EB1909443025	EB1910617004	EB1910617014	EB1909443026	EB1910617015
							A3-1	A3-2	A3-3	A3-4	A3-5	A3-6	A3-9	A3-10	A3-10a	A3-11	A3-12
							10/03/2019	20/03/2019	10/03/2019	20/03/2019	10/03/2019	20/03/2019	11/03/2019	18/03/2019	20/03/2019	11/03/2019	20/03/2019
Totals in Sediment																	
Total Organic Carbon	%	0.02	0.1	-	-	-	0.08	0.11	0.11	0.12	0.11	0.16	0.19	0.1	0.12	0.12	0.2
Tributyltin	µg Sn/kg	0.5	1	-	-	-	31.8	1.4	1470	28.3	338	6	3.3	1.2	3	566	<1.0
Normalised to % TOC	µg Sn/kg	-	9	-	-	-	159.0	7.0	7350.0	141.5	1690.0	30.0	16.5	6.0	15.0	2830.0	
Zinc	mg/kg	1	1	200	-	-	<1.0	1.9	2.8	2.1	2.6	<1.0	<1.0	3	1.5	3.4	2.8
Copper	mg/kg	1	1	65	-	-	1.6	2.5	4.3	2.8	4.8	<1.0	<1.0	3.2	2.2	2.7	3.6
Elutriate (as per NAGD guidelines)																	
Tributyltin	ng Sn/L	2	-	-	0.4	-	6	<3	<13	142	9	<2	<10	<5	22	<4	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	-	0.06	0.015	0.065	1.42	0.09	0.01	0.05	0.025	0.22	0.02	0.01
Zineb	µg/L	2	-	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

2.4 Area A4

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910331, EB1910617).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.4.1 Sediment Contamination Results

Table 2-8: Sediment Contamination results for Area A4

Work Order No.					EB1906964007	EB1907623021	EB1907623022	EB1906964008	EB1907623023	EB1906964009	EB1906960022	ADV102-190321	EB1907622019	EB1906964010	EB1907623024	EB1906964011	EB1907623025	EB1906964012	EB1907623026
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A4-1	A4-1a	A4-2	A4-3	A4-4	A4-5	D3	D4	A4-6	A4-7	A4-8	A4-9	A4-10	A4-11	A4-12
Date Sampled					11/03/2019	20/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019	11/03/2019	11/03/2019	18/03/2019	11/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019	20/03/2019
Misc																			
% Moisture	%	1	0.1	-	36.2	16.6	34.4	25.5	21.6	18.4	21.2	-	23.9	26.1	18.5	26.5	18.6	15.8	18.1
Total Organic Carbon	%	0.02	0.1	-	0.12	0.23	0.19	0.16	0.23	0.11	0.10	0.27	0.03	0.18	0.19	0.14	0.1	0.04	0.1
Total Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	100	200	420	440	430	980	380	660	420	220	990	640	400	2380	150
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.17	1.12	1.47	1.34	1.23	1.49	<1.00	0.97	1.43	1.6	1.52	<1.00	1.41	1.24	1.26
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.3	<0.2	<0.3	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	2	3.2	5.2	3.5	4.1	5.2	3.7	5.4	4.5	4.1	9.3	3	5.2	6.3	3.3
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	1.9	1.2	1.2	1.3	3.5	6	4.1	7.9	5.2	1.5	5.1	4	2.5	365	<1.0
Iron, Fe	mg/kg	50	100	-	140	200	380	260	360	610	310	510	410	250	830	380	370	1310	170
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	10	13	14	12	16	13	14	14	13	18	14	14	28	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	1.9	1.5	1.1	1.6	1.0	2.2	1.3	1.4	2	1.5	1.1	2.5	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.3	<0.2	<0.3	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.3	<0.2	<0.3	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	3	<2.0	2.2	2.6	<2.0	2.9	<2.0	1.5	2.4	2.8	2.7	2.8	2.2	3.5	<2.0
Zinc, Zn	mg/kg	1	1	200	1.8	<1.0	<1.0	<1.0	2.5	4	3.3	5.2	2.2	<1.0	4.3	2.5	1.9	16.5	<1.0
1ML HCL Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	360	<120	<120	90	<120	350	90	95	80	420	<120	240	<120	140	<120
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1	1.3	1.8	1.2	1.6	1.1	<1.0	0.6	<1.0	1.3	1.6	1	1.4	<1.0	1.4
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.13	<0.12	<0.12	<0.12	<0.5	<0.12	<0.13	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	2.5	2.2	2.7	3.4	3.7	2.4	3.9	3.4	3.1	2.8	3.4	2.4	2.7	3.2	1.7
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	4.1	4	5.2	4.2	4.8	<1.0	2.9	3.2	3	86.7	<1.0
Iron, Fe	mg/kg	50	100	-	250	70	100	120	160	240	100	110	110	260	130	200	120	140	60
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	13	11	14	12	10	13	14	15	12	12	19	12	16	11	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	1.4	<1.0	<1.0	<1.0	3.5	3	3.1	3.1	3.3	2.8	2.2	6	2.7	14.6	<1.0
Organotins																			
Monobutyltin	µg Sn/kg	1	1	-	1	<1	<1	<1	<1	3	<1	3	<1	<1	3	91	56	14	<1
Normalised to % TOC	µg Sn/kg	-	-	-	5.0					15.0		11.1			15.0	455.0	280.0	70.0	
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	0.5	1	<1	<1	116	324	8	<1
Normalised to % TOC	µg Sn/kg	-	-	-								2.0	5.0			580.0	1620.0	40.0	
Tributyltin	µg Sn/kg	0.5	1	-	0.5	<0.5	<0.5	<0.5	1.9	2.1	1.4	1.1	8.1	<0.5	1.2	1130	3960	53.3	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9	2.5				8.3	10.5	7.0	4.1	40.5		6.0	5650.0	19800.0	266.5	

2.4.2 PSD and Settleability Results

Table 2-9: PSD and Settleability results for Area A4

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906987007	A4-1	11/03/2019	4	<1	69	27	<1	2.19	-	-	-	-	-	-	-	-	-	-
EB1907638007	A4-1a	20/03/2019	1	<1	41	58	<1	2.37	-	-	-	-	-	-	-	-	-	-
EB1906987008	A4-3	11/03/2019	4	3	45	48	<1	2.42	-	-	-	-	-	-	-	-	-	-
EB1906987009	A4-5	11/03/2019	5	<1	36	59	<1	2.42	-	-	-	-	-	-	-	-	-	-
EB1907633019	A4-6	18/03/2019	7	2	41	50	<1	2.5	-	-	-	-	-	-	-	-	-	-
EB1906987010	A4-7	11/03/2019	6	<1	53	41	<1	2.4	1.88	53.2	54.2	54.2	Clear	1.59	57.2	21.6	21.6	Clear
EB1907638008	A4-8	20/03/2019	4	<1	5	91	<1	2.54	-	-	-	-	-	-	-	-	-	-
EB1906987011	A4-9	11/03/2019	5	<1	53	42	<1	2.47	1.94	57.3	54.4	54.4	Clear	1.61	56.6	21.4	21.4	Clear
EB1906987012	A4-11	11/03/2019	8	2	12	78	<1	2.49	-	-	-	-	-	-	-	-	-	-
EB1907638009	A4-12	20/03/2019	1	<1	57	42	<1	2.54	-	-	-	-	-	-	-	-	-	-

2.4.3 Elutriate Results

Table 2-10: Elutriate results for Area A4

Work Order No.						EB1909703001	EB1910331012	EB1909703002	EB1910617005	EB1910331013	EB1909703003	EB1910331014	EB1909703004
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	A4-1	A4-4	A4-5	A4-6	A4-8	A4-9	A4-10	A4-11
Date Sampled						11/03/2019	20/03/2019	11/03/2019	18/03/2019	20/03/2019	11/03/2019	20/03/2019	11/03/2019
Totals in Sediment													
Total Organic Carbon	%	0.02	0.1	-	-	0.12	0.23	0.11	0.03	0.19	0.14	0.1	0.04
Tributyltin	µg Sn/kg	0.5	1	-	-	0.5	1.9	2.1	8.1	1.2	1130	3960	53.3
Normalised to % TOC	µg Sn/kg		-	9	-	2.5	8.3	10.5	40.5	6.0	5650.0	19800.0	266.5
Zinc	mg/kg	1	1	200	-	1.8	2.5	4	2.2	4.3	2.5	1.9	16.5
Copper	mg/kg	1	1	65	-	1.9	3.5	6	5.2	5.1	4	2.5	365
Elutriate (as per NAGD guidelines)													
Tributyltin	ng Sn/L	2	-	-	0.4	3	34	22	21	<3	8	18	194
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.03	0.34	0.22	0.21	0.015	0.08	0.18	1.94
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc	µg/L	5	-	-	7	-	-	-	-	-	-	-	9
Zinc (100 times dilution)*	µg/L	5	-	-	7								0.09
Copper	µg/L	0.2	-	-	0.3	-	-	-	-	-	-	-	221
Copper (100 times dilution)*	µg/L	0.2	-	-	0.3								2.21

2.5 Area A5

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1908498, EB1910331, EB1910617).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.5.1 Sediment Contamination Results

Table 2-11: Sediment Contamination results for Area A5

Work Order No.					EB1906964039	EB1907623019	EB1906964040	EB1907622020	EB1906974003	EB1907623020	EB1906974004	EB1907623027	EB1907623028	EB1907623029	EB1906974005	EB1906974006	EB1906974007	EB1907623030	EB1906974008	EB1907623031	
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A5-1	A5-2	A5-3	A5-4	A5-5	A5-6	A5-7	A5-8 (T1)	A5-8 (T2)	A5-8 (T3)	A5-9 (T1)	A5-9 (T2)	A5-9 (T3)	A5-10	A5-11	A5-12	
Date Sampled					12/03/2019	19/03/2019	12/03/2019	18/03/2019	14/03/2019	19/03/2019	14/03/2019	20/03/2019	20/03/2019	20/03/2019	14/03/2019	14/03/2019	14/03/2019	20/03/2019	14/03/2019	20/03/2019	
Misc																					
% Moisture	%	1	0.1	-	32.5	16.8	22.7	26	15.5	27.4	29.2	14.8	14.2	13.6	17.6	29.9	20.1	16.7	20.9	15.3	
Total Organic Carbon	%	0.02	0.1	-	0.16	0.12	0.09	0.1	0.1	0.19	0.11	0.13	0.12	0.18	0.22	0.26	0.27	0.15	0.13	0.15	
Total Metals and Metalloids																					
Aluminium, Al	mg/kg	50	200	-	250	410	220	470	800	250	240	200	330	390	400	260	240	290	150	240	
Antimony, Sb	mg/kg	0.5	0.5	2	<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	
Arsenic, As	mg/kg	1	1	20	1.51	1.12	1.01	1.17	1.09	1.06	<1.00	1.47	1.21	1.25	1.41	1.19	<1.00	1.62	<1.00	1.66	
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Chromium, Cr	mg/kg	1	1	80	3.8	3.8	3.1	3.9	5.8	2.9	3.1	2.5	3.5	4.1	3.7	3.4	3.2	3.8	2.5	3.3	
Cobalt, Co	mg/kg	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	
Copper, Cu	mg/kg	1	1	65	2.2	1.2	2.3	8	13.1	2	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Iron, Fe	mg/kg	50	100	-	320	310	260	380	660	250	240	180	320	360	330	240	210	250	150	330	
Lead, Pb	mg/kg	1	1	50	<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	
Manganese, Mn	mg/kg	10	10	-	14	15	10	13	16	<10	11	11	19	15	13	14	12	10	<10	14	
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	
Nickel, Ni	mg/kg	1	1	21	1.8	1	1.6	1.5	1.6	<1.0	<1.0	<1.0	1.2	1.2	1.2	1.1	1	1.1	<1.0	<1.0	
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Vanadium, V	mg/kg	2	2	-	3.2	<2.0	2.9	2	2	<2.0	<2.0	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0	<2.0	2.4	
Zinc, Zn	mg/kg	1	1	200	1.3	1.2	<1.0	3.8	6	1.5	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	
1ML HCL Metals and Metalloids																					
Aluminium, Al	mg/kg	50	200	-	160	<120	80	<50	90	<120	<50	<120	<120	<120	60	60	60	<120	60	<120	
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Arsenic, As	mg/kg	1	1	20	1.5	1.2	1.3	<1.0	<1.0	1.3	<1.0	1.5	1.3	1.3	<1.0	<1.0	<1.0	1.6	<1.0	1.4	
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	
Chromium, Cr	mg/kg	1	1	80	3.5	2.1	3	2	2.7	2.1	1.7	2.7	2.3	2	2	2.7	2.4	2.2	2.4	2.2	
Cobalt, Co	mg/kg	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	
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	7.6	1.4	2.1	<1.0	<1.0	<1.0	<1.0	1.2	1.1	<1.0	<1.0	<1.0	
Iron, Fe	mg/kg	50	100	-	130	120	110	80	90	100	60	110	90	110	60	80	60	70	70	90	
Lead, Pb	mg/kg	1	1	50	<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	
Manganese, Mn	mg/kg	10	10	-	15	<10	15	12	11	10	<10	<10	12	13	<10	11	<10	<10	<10	<10	
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Nickel, Ni	mg/kg	1	1	21	<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	
Selenium, Se	mg/kg	0.5	0.1	-	<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	
Silver, Ag	mg/kg	1	0.1	1	<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	
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Zinc, Zn	mg/kg	1	1	200	<1.0	1.3	<1.0	<1.0	5.6	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Organotins																					
Monobutyltin	µg Sn/kg	1	1	-	<1	2	14	3	67	3	26	<1	<1	<1	<1	22	<1	<1	<1	<1	
Normalised to % TOC	µg Sn/kg	-	-	-		10.0	70.0	15.0	335.0	15.0	130.0					84.6					
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	71	2	158	2	77	<1	<1	<1	<1	33	<1	<1	2	<1	
Normalised to % TOC	µg Sn/kg	-	-	-			355.0	10.0	790.0	10.0	385.0					126.9			10.0		
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	1.7	443	8.3	569	7.7	460	<0.5	<0.5	<0.5	0.5	375	0.9	<0.5	10.1	<0.5	
Normalised to % TOC	µg Sn/kg	-	-	9		8.5	2215.0	41.5	2845.0	38.5	2300.0				2.3	1442.3	3.3		50.5		

2.5.2 PSD and Settleability Results

Table 2-12: PSD and Settleability results for Area A5

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	
			%	%	%	%	%		g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
Units			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001	0.01	0.1	0.001	0.001		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001	0.01	0.1	0.001	0.001		
<i>Size (mm)</i>			<i><0.02</i>	<i>0.02-0.6</i>	<i>0.6-2</i>	<i>2-60</i>	<i>>60</i>											
EB1906987039	A5-1	12/03/2019	3	<1	87	10	<1	2.43	1.76	63.3	56.6	56.6	Clear	1.58	63.5	19.8	19.8	Clear
EB1906987040	A5-3	12/03/2019	7	4	24	65	<1	2.6	-	-	-	-	-	-	-	-	-	-
EB1907633020	A5-4	18/03/2019	10	5	23	62	<1	2.53	-	-	-	-	-	-	-	-	-	-
EB1906986001	A5-5	14/03/2019	3	6	24	67	<1	2.41	-	-	-	-	-	-	-	-	-	-
EB1906986002	A5-7	14/03/2019	1	7	23	69	<1	2.59	-	-	-	-	-	-	-	-	-	-
EB1907638010	A5-8 (T1)	20/03/2019	1	<1	17	82	<1	2.52	-	-	-	-	-	-	-	-	-	-
EB1907638011	A5-8 (T2)	20/03/2019	2	<1	11	87	<1	2.62	-	-	-	-	-	-	-	-	-	-
EB1907638012	A5-8 (T3)	20/03/2019	2	<1	10	88	<1	2.87	-	-	-	-	-	-	-	-	-	-
EB1906986006	A5-11	14/03/2019	<1	1	59	40	<1	2.89	-	-	-	-	-	-	-	-	-	-

2.5.3 Elutriate Results

Table 2-13: Elutriate results for Area A5

Work Order No.					ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1910331010	EB1909703009	EB1910617006	EB1908498001	EB1910331011	EB1908498002	EB1908498003	EB1908498004	EB1908498005	EB1908498006
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level		A5-2	A5-3	A5-4	A5-5	A5-6	A5-7	A5-9 (T1)	A5-9 (T2)	A5-9 (T3)	A5-11
Date Sampled						19/03/2019	12/03/2019	18/03/2019	14/03/2019	19/03/2019	14/03/2019	14/03/2019	14/03/2019	14/03/2019	14/03/2019
Totals in Sediment															
Total Organic Carbon	%	0.02	0.1	-	-	0.12	0.09	0.1	0.1	0.19	0.11	0.22	0.26	0.27	0.13
Tributyltin	µg Sn/kg	0.5	1	-	-	1.7	443	8.3	569	7.7	460	0.5	375	0.9	10.1
Normalised to % TOC	µg Sn/kg	-	-	9	-	8.5	2215.0	41.5	2845.0	38.5	2300.0	2.3	1442.3	3.3	50.5
Zinc	mg/kg	1	1	200	-	1.2	<1.0	3.8	6	1.5	1.2	<1.0	<1.0	<1.0	<1.0
Copper	mg/kg	1	1	65	-	1.2	2.3	8	13.1	2	1.8	<1.0	<1.0	<1.0	<1.0
Elutriate (as per NAGD guidelines)															
Tributyltin	ng Sn/L	2	-	-	0.4	<5	3	<2	<3	<10	<3	<2	<2	<3	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.025	0.03	0.01	0.015	0.05	0.015	0.01	0.01	0.015	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

2.6 Area A6

The notes below provide details applicable to results in this section.

Notes

PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910617) or possible laboratory contamination (EB1909443).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.6.1 Sediment Contamination Results

Table 2-14: Sediment Contamination results for Area A6

Work Order No.					EB1906960001	EB1906960002	EB1906960003	EB1906960004	EB1906960005	EB1906960006	EB1907622021	EB1906960007	EB1906960008	EB1906960009	EB1906960010	EB1907622022	EB1906960011	EB1906960012	EB1907622023	EB1906960013	EB1906960014
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A6-1	A6-2	A6-3	A6-4 (T1)	A6-4 (T2)	A6-4 (T3)	A6-4a	A6-5	A6-6	A6-7	A6-8	A6-8a	A6-9	A6-10	A6-10a	A6-11	A6-12
Date Sampled					10/03/2019	10/03/2019	10/03/2019	10/03/2019	10/03/2019	10/03/2019	18/03/2019	10/03/2019	10/03/2019	10/03/2019	10/03/2019	18/03/2019	10/03/2019	10/03/2019	18/03/2019	10/03/2019	10/03/2019
Misc																					
% Moisture	%	1	0.1	-	14.5	13.8	23.4	18.3	20.6	40.3	21.7	43.4	32.9	42.8	31.9	29.9	31.3	16.6	19.7	28.4	23
Total Organic Carbon	%	0.02	0.1	-	0.09	0.06	0.08	0.1	0.16	0.14	0.05	0.13	0.11	0.14	0.13	0.08	0.21	0.11	0.11	0.13	0.16
Total Metals and Metalloids																					
Aluminium, Al	mg/kg	50	200	-	570	520	260	160	330	160	190	180	220	370	450	200	360	500	130	340	190
Antimony, Sb	mg/kg	0.5	0.5	2	<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
Arsenic, As	mg/kg	1	1	20	1.1	1	<1.00	<1.00	<1.00	<1.00	1.13	<1.00	1.19	<1.00	1.13	<1.00	1.18	1.23	1.01	1.34	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	5.7	4.5	3.6	2.4	7.8	2.7	2.8	2.7	3.4	9.3	4.5	2.6	3.6	4.9	2	3.9	2.7
Cobalt, Co	mg/kg	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	<0.5
Copper, Cu	mg/kg	1	1	65	26	5	11.5	1.9	647	6.2	2.5	1.8	1.4	175	23	15.1	5.6	9.3	2.4	3.1	2.2
Iron, Fe	mg/kg	50	100	-	590	500	260	150	190	150	180	180	230	210	440	200	350	530	130	350	200
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	23	16	12	<10	<10	<10	<10	<10	<10	12	10	14	12	14	15	<10	13
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.9	1.7	1.2	<1.0	1.5	1.2	<1.0	1.2	1.3	1.2	1.5	<1.0	1.4	1.6	<1.0	1.4	1.1
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	11.9	4.1	5.2	<1.0	150	2.7	1.9	<1.0	<1.0	88.8	8.7	4.6	2.6	5.1	1.6	1.6	<1.0
1ML HCL Metals and Metalloids																					
Aluminium, Al	mg/kg	50	200	-	110	110	90	60	70	60	<50	60	60	80	110	90	80	80	60	50	70
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0	1	<1.0	<1.0
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	3.7	3	3.1	2.3	2.9	2.3	2	2	2.3	2.8	3.4	3.3	3.3	2.6	2.1	2	2.3
Cobalt, Co	mg/kg	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	<0.5
Copper, Cu	mg/kg	1	1	65	7.2	3.8	514	2.8	14.9	1.6	1	<1.0	<1.0	14.4	28.4	22.6	292	10	1.1	1.5	6.9
Iron, Fe	mg/kg	50	100	-	130	110	90	50	80	60	70	60	70	90	120	130	80	80	70	50	60
Lead, Pb	mg/kg	1	1	50	<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
Manganese, Mn	mg/kg	10	10	-	14	15	13	<10	10	10	<10	<10	<10	11	12	14	11	13	13	<10	108
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<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
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	4.5	2.9	62.2	<1.0	5.4	1.5	1.3	<1.0	<1.0	7.8	13	13.6	44.3	6	1.3	<1.0	1.2
Organotins																					
Monobutyltin	µg Sn/kg	1	1	-	8	7	27	<1	2	1	2	<1	<1	<5	49	38	99	<1	2	2	2
Normalised to % TOC	µg Sn/kg	-	-	-	40.0	35.0	135.0		10.0	5.0	10.0			245.0	190.0	471.4		10.0	10.0	10.0	
Dibutyltin	µg Sn/kg	1	1	-	15	7	94	<1	<1	2	<1	<1	<1	47	154	88	646	<1	<1	5	<1
Normalised to % TOC	µg Sn/kg	-	-	-	75.0	35.0	470.0		10.0					235.0	770.0	440.0	3076.2			25.0	
Tributyltin	µg Sn/kg	0.5	1	-	98.6	23.9	939	3.9	2	17.1	0.8	<0.5	<0.5	970	1300	1830	3760	17.4	1.7	46.7	2.2
Normalised to % TOC	µg Sn/kg	-	-	9	493.0	119.5	4695.0	19.5	10.0	85.5	4.0			4850.0	6500.0	9150.0	17904.8	87.0	8.5	233.5	11.0

2.6.2 PSD and Settleability Results

Table 2-15: PSD and Settleability results for Area A6

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
			Units	%	%	%	%		g/cm ³	g/cm ³	%	mm/min		mm/min	g/cm ³	%	mm/min		mm/min
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906993029	A6-1	10/03/2019	3	2	12	83	<1	2.72	-	-	-	-	-	-	-	-	-	-	-
EB1906993001	A6-2	10/03/2019	13	8	3	76	<1	2.74	-	-	-	-	-	-	-	-	-	-	-
EB1906993002	A6-3	10/03/2019	12	20	6	62	<1	2.42	-	-	-	-	-	-	-	-	-	-	-
EB1906993003	A6-4 (T1)	10/03/2019	4	<1	80	16	<1	2.3	-	-	-	-	-	-	-	-	-	-	-
EB1906993004	A6-4 (T2)	10/03/2019	6	3	30	61	<1	2.53	-	-	-	-	-	-	-	-	-	-	-
EB1906993005	A6-4 (T3)	10/03/2019	12	3	32	53	<1	2.46	-	-	-	-	-	-	-	-	-	-	-
EB1907633021	A6-4a	18/03/2019	3	2	70	25	<1	2.52	-	-	-	-	-	-	-	-	-	-	-
EB1906993006	A6-5	10/03/2019	3	<1	81	16	<1	2.4	-	-	-	-	-	-	-	-	-	-	-
EB1906993007	A6-8	10/03/2019	11	5	22	62	<1	2.56	-	-	-	-	-	-	-	-	-	-	-
EB1907633022	A6-8a	18/03/2019	10	7	12	71	<1	2.53	-	-	-	-	-	-	-	-	-	-	-
EB1906993008	A6-9	10/03/2019	9	3	35	53	<1	2.53	1.3	59	55.2	55.2	Clear	1.3	59.1	21.4	21.4	Clear	
EB1906993009	A6-10	10/03/2019	10	7	13	70	<1	2.43	-	-	-	-	-	-	-	-	-	-	-
EB1907633023	A6-10a	18/03/2019	5	<1	66	29	<1	2.46	-	-	-	-	-	-	-	-	-	-	-
EB1906993010	A6-11	10/03/2019	4	<1	64	32	<1	2.34	1.88	53.2	56	56	Clear	1.85	54.2	22.8	22.8	Clear	
EB1906993011	A6-12	10/03/2019	9	<1	45	46	<1	2.3	-	-	-	-	-	-	-	-	-	-	-

2.6.3 Elutriate Results

Table 2-16: Elutriate results for Area A6

Work Order No.	Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909443007	EB1909443008	EB1909443009	EB1909443010	EB1909443011	EB1909443012	EB1910617007	EB1909443013	EB1909443014	EB1910617008	EB1909443015	EB1909443016	EB1910617014	EB1909443017	EB1909443018
							A6-1	A6-2	A6-3	A6-4 (T1)	A6-4 (T2)	A6-4 (T3)	A6-4a	A6-7	A6-8	A6-8a	A6-9	A6-10	A6-10a	A6-11	A6-12
							9/03/2019	10/03/2019	10/03/2019	10/03/2019	10/03/2019	10/03/2019	18/03/2019	10/03/2019	10/03/2019	18/03/2019	10/03/2019	10/03/2019	20/03/2019	10/03/2019	10/03/2019
Totals in Sediment																					
Total Organic Carbon	%	0.02	0.1	-	-	-	0.09	0.06	0.08	0.1	0.16	0.14	0.05	0.14	0.13	0.08	0.21	0.11	0.11	0.13	0.16
Tributyltin	µg Sn/kg	0.5	1	-	-	-	98.6	23.9	939	3.9	2	17.1	0.8	970	1300	1830	3760	17.4	1.7	46.7	2.2
Normalised to % TOC	µg Sn/kg	-	9	-	-	-	493.0	119.5	4695.0	19.5	10.0	85.5	4.0	4850.0	6500.0	9150.0	17904.8	87.0	8.5	233.5	11.0
Zinc	mg/kg	1	1	200	-	-	11.9	4.1	5.2	<1.0	150	2.7	1.9	88.8	8.7	4.6	2.6	5.1	1.6	1.6	<1.0
Copper	mg/kg	1	1	65	-	-	26	5	11.5	1.9	647	6.2	2.5	175	23	15.1	5.6	9.3	2.4	3.1	2.2
Elutriate (as per NAGD guidelines)																					
Tributyltin	ng Sn/L	2	-	-	0.4	-	62	164	18	<3	9	11	<2	10	42	56	<7	<9	22	<3	<4
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	-	0.62	1.64	0.18	0.015	0.09	0.11	0.01	0.1	0.42	0.56	0.035	0.045	0.22	0.015	0.02
Zineb	µg/L	2	-	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc	µg/L	5	-	-	7	-	-	-	-	-	<5	-	-	<5	-	<5	-	-	-	-	-
Zinc (100 times dilution)*	µg/L	5	-	-	7	-	-	-	-	-	0.025	-	-	0.025	-	0.025	-	-	-	-	-
Copper	µg/L	0.2	-	-	0.3	-	-	-	-	-	54	-	-	95.3	-	149	-	-	-	-	-
Copper (100 times dilution)*	µg/L	0.2	-	-	0.3	-	-	-	-	-	0.54	-	-	0.95	-	1.49	-	-	-	-	-

2.7 Area A7

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910331).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.7.1 Sediment Contamination Results

Table 2-17: Sediment Contamination results for Area A7

Work Order No.					EB1907620011	EB1907620012	EB1907622024	EB1907620013	EB1907620014	EB1907620015	EB1907620016
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A7-1	A7-3	A7-4	A7-5	A7-7	A7-9	A7-11
Date Sampled					16/03/2019	16/03/2019	18/03/2019	16/03/2019	16/03/2019	16/03/2019	16/03/2019
Misc											
% Moisture	%	1	0.1	-	20.6	27.6	25.5	21.1	28.2	16.9	35.1
Total Organic Carbon	%	0.02	0.1	-	0.16	0.17	0.09	0.22	0.24	0.18	0.12
Total Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	120	190	220	110	330	180	220
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	<1.00	<1.00	1.24	<1.00	1.64	1.21	1.8
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	2.4	3.1	3.5	2.9	4.2	3.6	5.9
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	1.2	<1.0	1.7	<1.0	1.5	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	120	180	210	150	280	200	330
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	<10	<10	<10	<10	13
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	1.2	<1.0	1.4	1	1.2
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	2.1	<2.0	<2.0	<2.0	2.9
Zinc, Zn	mg/kg	1	1	200	1.7	<1.0	<1.0	<1.0	1.7	1.9	<1.0
1ML HCL Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	<50	70	90	60	<50	<50	<50
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	1.1	1	1.2	1.2	1.3	1.5
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	1	1.9	2.5	1.9	1.6	1.8	4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	<50	90	110	80	80	60	80
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	<10	<10	<10	<10	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.3
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Organotins											
Monobutyltin	µg Sn/kg	1	1	-	4	<1	<1	<1	12	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-	20.0				50.0		
Dibutyltin	µg Sn/kg	1	1	-	1	<1	<1	<1	33	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-	5.0				137.5		
Tributyltin	µg Sn/kg	0.5	1	-	3.1	<0.5	<0.5	<0.5	81.7	<0.5	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9	15.5				340.4		

2.7.2 PSD and Settleability Results

Table 2-18: PSD and Settleability results for Area A7

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1907630011	A7-1	16/03/2019	8	5	36	51	<1	2.51	-	-	-	-	-	-	-	-	-	-
EB1907630012	A7-3	16/03/2019	5	<1	77	18	<1	2.47	-	-	-	-	-	-	-	-	-	-
EB1907633024	A7-4	18/03/2019	7	2	48	43	<1	2.52	-	-	-	-	-	-	-	-	-	-
EB1907630013	A7-5	16/03/2019	8	4	37	51	<1	2.38	-	-	-	-	-	-	-	-	-	-
EB1907630014	A7-7	16/03/2019	14	<1	55	31	<1	2.38	-	-	-	-	-	-	-	-	-	-
EB1907630015	A7-9	16/03/2019	3	1	40	56	<1	2.46	-	-	-	-	-	-	-	-	-	-
EB1907630016	A7-11	16/03/2019	4	<1	91	5	<1	2.6	1.55	58.7	55.4	55.4	Clear	1.49	61.2	23.2	23.2	Clear

2.7.3 Elutriate Results

Table 2-19: Elutriate results for Area A7

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1910331001	EB1910331002	
Sample ID						A7-1	A7-9	
Date Sampled							16/03/2019	16/03/2019
Totals in Sediment								
Total Organic Carbon	%	0.02	0.1	-	-	0.16	0.18	
Tributyltin	µg Sn/kg	0.5	1	-	-	3.1	<0.5	
Normalised to % TOC	µg Sn/kg		-	9	-	15.5		
Zinc	mg/kg	1	1	200	-	1.7	1.9	
Copper	mg/kg	1	1	65	-	1.2	<1.0	
Elutriate (as per NAGD guidelines)								
Tributyltin	ng Sn/L	2	-	-	0.4	<2	<2	
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.01	0.01	
Zineb	µg/L	2	-	-	-	<2.0	<2.0	

2.8 Area A8

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910331, EB1910617) or possible laboratory contamination (EB1909443).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.8.1 Sediment Contamination Results

Table 2-20: Sediment Contamination results for Area A8

Work Order No.					EB1906960015	EB1907620017	EB1906960016	EB1907622025	EB1907620018	EB1907620019	EB1907620020
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	A8-1	A8-3	A8-5	A8-6	A8-7	A8-9	A8-11
Date Sampled					10/03/2019	16/03/2019	10/03/2019	18/03/2019	16/03/2019	16/03/2019	16/03/2019
Misc											
% Moisture	%	1	0.1	-	23.1	26.6	34.4	21.2	30.9	25.2	30.8
Total Organic Carbon	%	0.02	0.1	-	0.12	0.15	0.13	0.04	0.14	0.2	0.13
Total Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	210	110	250	520	220	250	280
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	<1.00	1.26	2.22	1.86	1.93	1.5	3.08
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	2.5	4.2	7.6	5.8	6.6	4.3	10.4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	2.2	<1.0	1.4	2.4	<1.0	1.1	<1.0
Iron, Fe	mg/kg	50	100	-	230	180	500	530	380	290	580
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	16	14	12	13	19
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1	1	1.2	1.6	1	1.4	1.3
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	2.6	2.6	2.8	2.3	4.2
Zinc, Zn	mg/kg	1	1	200	<1.0	1	<1.0	1.3	4.5	1.3	<1.0
1ML HCL Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	80	<50	80	70	80	<50	<50
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	1.2	<1.0	<1.0	1.6	1.1	1.5
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	2	1.5	5.6	1.8	4.8	1.8	5.1
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	89.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	60	50	90	70	100	<50	80
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	15	<10	11	<10	12
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	2
Zinc, Zn	mg/kg	1	1	200	24.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Organotins											
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	28	<1	65	<1
Normalised to % TOC	µg Sn/kg	-	-	-				140.0		325.0	
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	241	<1	252	<1
Normalised to % TOC	µg Sn/kg	-	-	-				1205.0		1260.0	
Tributyltin	µg Sn/kg	0.5	1	-	1.1	<0.5	<0.5	1520	<0.5	1750	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9	5.5			7600.0		8750.0	

2.8.2 PSD and Settleability Results

Table 2-21: PSD and Settleability results for Area A8

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability					
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity
			%	%	%	%	%		g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min	Clarity	g/cm ³	%	mm/min	mm/min	Clarity
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906993012	A8-1	10/03/2019	4	<1	61	35	<1	2.43	1.37	66.3	54.6	54.6	Clear	1.37	66.6	19.6	19.6	Clear
EB1907630017	A8-3	16/03/2019	1	2	82	15	<1	2.54	-	-	-	-	-	-	-	-	-	-
EB1906993013	A8-5	10/03/2019	3	<1	90	7	<1	2.42	-	-	-	-	-	-	-	-	-	-
EB1907633025	A8-6	18/03/2019	3	2	67	28	<1	2.37	-	-	-	-	-	-	-	-	-	-
EB1907630018	A8-7	16/03/2019	3	<1	91	6	<1	2.59	-	-	-	-	-	-	-	-	-	-
EB1907630019	A8-9	16/03/2019	2	2	73	23	<1	2.53	-	-	-	-	-	-	-	-	-	-
EB1907630020	A8-11	16/03/2019	<1	4	94	2	<1	2.7	-	-	-	-	-	-	-	-	-	-

2.8.3 Elutriate Results

Table 2-22: Elutriate results for Area A8

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909443019	EB1910617010	EB1910331003
Sample ID						A8-1	A8-6	A8-9
Date Sampled						10/03/2019	18/03/2019	16/03/2019
Totals in Sediment								
Total Organic Carbon	%	0.02	0.1	-	-	0.12	0.04	0.2
Tributyltin	µg Sn/kg	0.5	1	-	-	1.1	1520	1750
Normalised to % TOC	µg Sn/kg		-	9	-	5.5	7600.0	8750.0
Zinc	mg/kg	1	1	200	-	<1.0	1.3	1.3
Copper	mg/kg	1	1	65	-	2.2	2.4	1.1
Elutriate (as per NAGD guidelines)								
Tributyltin	ng Sn/L	2	-	-	0.4	37	<6	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.37	0.03	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0

2.9 Area AX

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910331).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

2.9.1 Sediment Contamination Results

Table 2-23: Sediment Contamination results for Area AX

Work Order No.					EB1906974009	EB1907623013	EB1906974010	EB1907623014	EB1906974011	EB1907623015	EB1906974012	EB1907623016	EB1906974013	EB1907623017	EB1906974014	EB1906974002	ADV102-190321	EB1907623018
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	AX-1	AX-2	AX-3	AX-4	AX-5	AX-6	AX-7	AX-8	AX-9	AX-10	AX-11	D7	D8	AX-12
Date Sampled					14/03/2019	19/03/2019	14/03/2019	19/03/2019	14/03/2019	19/03/2019	14/03/2019	19/03/2019	14/03/2019	19/03/2019	14/03/2019	12/03/2019	14/03/2019	19/03/2019
Misc																		
% Moisture	%	1	0.1	-	31.3	30.6	26.2	22.1	29.4	28.5	23.8	15.5	29.3	14.3	30.6	26.8	-	23.1
Total Organic Carbon	%	0.02	0.1	-	0.18	0.1	0.18	0.14	0.19	0.09	0.18	0.11	0.1	0.16	0.14	0.18	0.49	0.1
Total Metals and Metalloids																		
Aluminium, Al	mg/kg	50	200	-	200	100	130	510	240	260	130	90	320	120	110	160	280	60
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50
Arsenic, As	mg/kg	1	1	20	1.14	<1.00	1.16	1.86	1.36	1.27	1.04	<1.00	3	<1.00	1.24	<1.00	1.10	1.12
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.5	<0.2
Chromium, Cr	mg/kg	1	1	80	3.4	2.2	3.2	4.7	6.8	3.6	2.7	2.6	11.6	2.5	2.9	2.7	2.8	2.3
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Iron, Fe	mg/kg	50	100	-	210	160	170	560	290	300	190	140	740	170	180	170	230	140
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<0.5	1.7
Manganese, Mn	mg/kg	10	10	-	12	<10	12	12	29	11	12	12	22	11	10	11	12	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01
Nickel, Ni	mg/kg	1	1	21	1	<1.0	1.1	1.2	1.7	1	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	1.1	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	0.1	<0.2	0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.5	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.5	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.5	<2.0	<2.0	<2.0	0.9	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	1.2	1	1.4	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0
1ML HCL Metals and Metalloids																		
Aluminium, Al	mg/kg	50	200	-	100	70	60	100	320	80	70	<50	120	60	80	60	100	50
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0
Arsenic, As	mg/kg	1	1	20	1.1	1.6	<1.0	1.6	1.2	1.5	<1.0	1.6	1.5	1.4	<1.0	<1.0	0.8	1.8
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.12
Chromium, Cr	mg/kg	1	1	80	3.8	2.5	1.8	3.3	7.7	2.4	2.2	2	9.5	2.2	2.6	2.5	3.1	2.6
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	1	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Iron, Fe	mg/kg	50	100	-	80	90	70	100	310	100	70	70	140	80	70	60	94	70
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Manganese, Mn	mg/kg	10	10	-	12	11	11	<10	32	11	11	10	23	10	13	12	15	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10
Nickel, Ni	mg/kg	1	1	21	1	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	0.8	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	2.2	<2.0	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.6	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	1.5	<1.0	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.7	<1.0
Organotins																		
Monobutyltin	µg Sn/kg	1	1	-	<1	3	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1
Normalised to % TOC	µg Sn/kg	-	-	-		15.0		5.0										
Dibutyltin	µg Sn/kg	1	1	-	<1	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1
Normalised to % TOC	µg Sn/kg	-	-	-		40.0												
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	16.3	0.5	1.2	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9		81.5	2.5	6.0			5.0							

2.9.2 PSD and Settleability Results

Table 2-24: PSD and Settleability results for Area AX

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906986007	AX-1	14/03/2019	3	<1	69	28	<1	2.46	1.86	59.7	54.8	54.8	Clear	1.8	61.7	22.8	22.8	Clear	
EB1906986008	AX-3	14/03/2019	5	2	29	64	<1	2.32	1.6	47.9	53.6	53.6	Clear	1.57	53.1	20.6	20.6	Clear	
EB1907638006	AX-4	19/03/2019	1	<1	73	26	<1	2.42	-	-	-	-	-	-	-	-	-	-	
EB1906986009	AX-5	14/03/2019	1	<1	75	24	<1	2.46	1.82	68.5	57	57	Clear	1.64	67.8	23.6	23.6	Clear	
EB1906986010	AX-7	14/03/2019	3	1	46	50	<1	2.36	-	-	-	-	-	-	-	-	-	-	
EB1906986011	AX-9	14/03/2019	2	<1	95	3	<1	2.51	1.95	64.2	57	57	Clear	1.69	65.9	23.4	23.4	Clear	

2.9.3 Elutriate Results

Table 2-25: Elutriate results for Area AX

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1910331008	EB1910331009
Sample ID						AX-2	AX-4
Date Sampled						19/03/2019	19/03/2019
Totals in Sediment							
Total Organic Carbon	%	0.02	0.1	-	-	0.1	0.14
Tributyltin	µg Sn/kg	0.5	1	-	-	16.3	1.2
Normalised to % TOC	µg Sn/kg	-	-	9	-	81.5	6.0
Zinc	mg/kg	1	1	200	-	1.2	1.4
Copper	mg/kg	1	1	65	-	2.3	<1.0
Elutriate (as per NAGD guidelines)							
Tributyltin	ng Sn/L	2	-	-	0.4	<3	<3
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.015	0.015
Zineb	µg/L	2	-	-	-	<2.0	<2.0

3 Results – Priority Area C

3.1 Area C1

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

3.1.1 Sediment Contamination Results

Table 3-1: Sediment Contamination results for Area C1

Work Order No.					EB1906964027	EB1906964028	EB1906964029	EB1906964030	EB1906964031	EB1906964032
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	C1-1	C1-3	C1-5	C1-7	C1-9	C1-11
Date Sampled					12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019
Misc										
% Moisture	%	1	0.1	-	20.7	10.6	28.3	17.5	14.1	26.5
Total Organic Carbon	%	0.02	0.1	-	0.29	0.12	0.21	0.16	0.07	0.18
Total Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	340	830	190	320	340	250
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.94	1.59	1.65	1.39	1.38	1.52
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	4.4	6.2	3.2	3.5	3.7	4.6
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	2	4.3	2.2	1.8	3	2
Iron, Fe	mg/kg	50	100	-	400	800	220	340	380	270
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	16	16	<10	11	14	12
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	2.3	2.6	1.7	1.8	1.7	1.9
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	3.2	3.3	2.7	2.6	2.8	3
Zinc, Zn	mg/kg	1	1	200	1.4	4.3	<1.0	<1.0	2.4	<1.0
1ML HCL Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	80	160	60	100	130	80
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.3	1.3	1.1	1.2	1.3	1.4
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	2.7	3.4	2.5	2.8	3.4	2.6
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	2.5	<1.0	<1.0	2.1	<1.0
Iron, Fe	mg/kg	50	100	-	80	210	60	100	160	80
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	11	22	<10	12	14	11
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	2.1	<1.0	<1.0	3	<1.0
Organotins										
Monobutyltin	µg Sn/kg	1	1	-	<1	2	<1	<1	1	<1
Normalised to % TOC	µg Sn/kg	-	-	-		10.0			5.0	
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-						
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	0.5	<0.5	0.7	0.6	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9		2.5		3.5	3.0	

3.1.2 PSD and Settleability Results

Table 3-2: PSD and Settleability results for Area C1

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906987027	C1-1	12/03/2019	7	<1	49	44	<1	2.33	-	-	-	-	-	-	-	-	-	-	-
EB1906987028	C1-3	12/03/2019	6	<1	28	66	<1	2.48	1.82	61	56.4	56.4	Clear	1.81	61.5	22.2	22.2	Clear	
EB1906987029	C1-5	12/03/2019	4	<1	67	29	<1	2.45	-	-	-	-	-	-	-	-	-	-	-
EB1906987030	C1-7	12/03/2019	6	1	40	53	<1	2.58	-	-	-	-	-	-	-	-	-	-	-
EB1906987031	C1-9	12/03/2019	5	<1	51	44	<1	2.47	1.84	60.3	55.2	55.2	Clear	1.56	64.3	22.4	22.4	Clear	
EB1906987032	C1-11	12/03/2019	5	1	48	46	<1	2.49	-	-	-	-	-	-	-	-	-	-	-

3.1.3 Elutriate Results

Table 3-3: Elutriate results for Area C1

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909703006	EB1909703007	EB1909703008
Sample ID						C1-3	C1-7	C1-9
Date Sampled						12/03/2019	12/03/2019	12/03/2019
Totals in Sediment								
Total Organic Carbon	%	0.02	0.1	-	-	0.12	0.16	0.07
Tributyltin	µg Sn/kg	0.5	1	-	-	<0.5	0.7	0.6
Normalised to % TOC	µg Sn/kg		-	9	-		3.5	3.0
Zinc	mg/kg	1	1	200	-	4.3	<1.0	2.4
Elutriate (as per NAGD guidelines)								
Tributyltin	ng Sn/L	2	-	-	0.4	<2	3	5
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.01	0.03	0.05
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0

3.2 Area C2

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to possible laboratory contamination (EB1909443).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

3.2.1 Sediment Contamination Results

Table 3-4: Sediment Contamination results for Area C2

Work Order No.					EB1906947016	EB1906947017	EB1906947018	EB1906947019	EB1906947020	EB1906947021	EB1906947022	EB1906947023	EB1907622015	EB1906947024	EB1906947025	EB1906947026	EB1906947027
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	C2-1	C2-2	C2-3	C2-4	C2-5	C2-6	C2-7	C2-8	C2-8b	C2-9	C2-10	C2-11	C2-12
Date Sampled					9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019	18/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019
Misc																	
% Moisture	%	1	0.1	-	12.1	17.6	21.3	36.3	13.2	<1.0	28.5	27.4	20.9	12.4	26.9	25.4	28.4
Total Organic Carbon	%	0.02	0.1	-	0.11	0.16	0.26	0.28	0.14	0.13	0.18	0.15	0.05	0.16	0.19	0.26	0.28
Total Metals and Metalloids																	
Aluminium, Al	mg/kg	50	200	-	630	450	370	340	530	360	180	320	400	1070	290	130	90
Antimony, Sb	mg/kg	0.5	0.5	2	<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
Arsenic, As	mg/kg	1	1	20	1.26	1.52	1.12	1.46	1.48	<1.00	1.12	1.1	1.2	1.91	1.03	<1.00	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.3	<0.2	<0.3	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	6.1	4.7	6.3	3.9	4.8	4.1	3.7	4	3.9	9.4	3.3	3.5	2.4
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	4	1	<1.0	1.1	1.4	2	<1.0	<1.0	<1.0	3.6	<1.0	1	<1.0
Iron, Fe	mg/kg	50	100	-	720	480	340	360	590	420	240	350	350	1000	260	170	100
Lead, Pb	mg/kg	1	1	50	<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
Manganese, Mn	mg/kg	10	10	-	16	16	12	16	13	<10	11	12	11	17	<10	10	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.8	1.5	1.5	1.6	1.9	<1.0	<1.0	<1.0	1.2	2.4	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.3	<0.2	<0.3	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.3	<0.2	<0.3	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	2.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.5	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	3.2	1.2	1.2	<1.0	2.1	1.9	<1.0	<1.0	<1.0	6.7	<1.0	<1.0	1.1
1ML HCL Metals and Metalloids																	
Aluminium, Al	mg/kg	50	200	-	180	140	70	70	140	100	100	90	<60	130	110	80	60
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	1.2	1.4	1.2	1.5	1.2	1.2	<1.0
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	4.6	2.8	2.7	2.5	3.8	2.3	2.9	3.2	2.7	3.3	3.9	2.5	1.6
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	1.6	5.2	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	180	120	60	70	120	110	110	110	90	140	140	90	70
Lead, Pb	mg/kg	1	1	50	<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
Manganese, Mn	mg/kg	10	10	-	20	<10	<10	<10	16	<10	10	12	<10	<10	12	11	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	1.3	1.1	1.1	1	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<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
Vanadium, V	mg/kg	2	2	-	<2.0	2.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	2	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	1	<1.0	1.1	2.1	<1.0	<1.0
Organotins																	
Monobutyltin	µg Sn/kg	1	1	-	2	<1	<1	1	<1	1	<1	<1	<1	<1	3	<1	2
Normalised to % TOC	µg Sn/kg	-	-	-	10.0			3.6		5.0					15.0		7.1
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	10	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-				7.1							50.0		
Tributyltin	µg Sn/kg	0.5	1	-	1.2	<0.5	0.5	6.3	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	93.7	<0.5	1.6
Normalised to % TOC	µg Sn/kg	-	-	9	6.0		1.9	22.5						3.0	468.5		5.7

3.2.2 PSD and Settleability Results

Table 3-5: PSD and Settleability results for Area C2

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906982011	C2-1	9/03/2019	15	5	23	57	<1	2.65	-	-	-	-	-	-	-	-	-	-
EB1906982012	C2-2	9/03/2019	16	<1	34	50	<1	2.54	-	-	-	-	-	-	-	-	-	-
EB1906982013	C2-3	9/03/2019	30	<1	21	49	<1	2.56	-	-	-	-	-	-	-	-	-	-
EB1906982014	C2-5	9/03/2019	20	3	19	58	<1	2.58	-	-	-	-	-	-	-	-	-	-
EB1906982015	C2-6	9/03/2019	32	11	9	48	<1	2.31	-	-	-	-	-	-	-	-	-	-
EB1906982016	C2-7	9/03/2019	5	<1	79	16	<1	2.51	-	-	-	-	-	-	-	-	-	-
EB1906982017	C2-8	9/03/2019	4	<1	83	13	<1	2.63	-	-	-	-	-	-	-	-	-	-
EB1907633015	C2-8b	18/03/2019	8	1	42	49	<1	2.38	-	-	-	-	-	-	-	-	-	-
EB1906982018	C2-9	9/03/2019	16	<1	28	56	<1	2.68	-	-	-	-	-	-	-	-	-	-
EB1906982019	C2-10	9/03/2019	-	-	-	-	-	-	1.99	50.2	56.2	56.2	Clear	1.96	51	21.8	21.8	Clear
EB1906982020	C2-11	9/03/2019	10	<1	52	38	<1	2.56	-	-	-	-	-	-	-	-	-	-

3.2.3 Elutriate Results

Table 3-6: Elutriate results for Area C2

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909443002	EB1909443003	EB1909443004	EB1909443005	EB1909443006
Sample ID						C2-3	C2-4	C2-9	C2-10	C2-12
Date Sampled						9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019
Totals in Sediment										
Total Organic Carbon	%	0.02	0.1	-	-	0.26	0.28	0.16	0.19	0.28
Tributyltin	µg Sn/kg	0.5	1	-	-	0.5	6.3	0.6	93.7	1.6
<i>Normalised to % TOC</i>	µg Sn/kg		-	9	-	1.9	22.5	3.0	468.5	5.7
Zinc	mg/kg	1	1	200	-	1.2	<1.0	6.7	<1.0	1.1
Elutriate (as per NAGD guidelines)										
Tributyltin	ng Sn/L	2	-	-	0.4	<3	<3	<3	<3	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.015	0.015	0.015	0.015	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0

3.3 Area C3

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

3.3.1 Sediment Contamination Results

Table 3-7: Sediment Contamination results for Area C3

Work Order No.					EB1907617014	EB1907617015	EB1907617016	EB1907617017	EB1907617018	EB1907617019
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	C3-1	C3-3	C3-5	C3-7	C3-9	C3-11
Date Sampled					15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019
Misc										
% Moisture	%	1	0.1	-	28.5	14.4	21.4	17.7	25.1	12.1
Total Organic Carbon	%	0.02	0.1	-	0.12	0.1	0.11	0.1	0.11	0.13
Total Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	420	880	1060	1660	870	1460
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	<1.00	2.48	2.34	2.16	1.19	1.89
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	2.7	5.6	8.7	9.6	5.1	8.1
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	5.5	5	5.7	9.7	4.8	4.2
Iron, Fe	mg/kg	50	100	-	320	670	920	1530	580	990
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	1.1	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	11	16	14	21	13	14
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	<1.0	1.6	2.4	2.5	1.3	2
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	2.9	4	3.6	<2.0	2.4
Zinc, Zn	mg/kg	1	1	200	2	2.4	4	5	2.5	2.9
1ML HCL Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	<120	250	150	400	300	280
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.3	<1.0	1.5	2	1.4	1.5
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	2.8	3.2	2.6	5.1	6.5	5.3
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	2	1.2	1	3	1.7	1.6
Iron, Fe	mg/kg	50	100	-	410	220	160	490	360	340
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	12	12	<10	11	13	10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	1.5	1.4	1.3
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	1.6	1.1	1	2	1.8	1.8
Organotins										
Monobutyltin	µg Sn/kg	1	1	-	2	1	<1	1	<1	2
Normalised to % TOC	µg Sn/kg	-	-	-	10.0	5.0		5.0		10.0
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-						
Tributyltin	µg Sn/kg	0.5	1	-	0.6	0.7	<0.5	<0.5	0.8	0.7
Normalised to % TOC	µg Sn/kg	-	-	9	3.0	3.5			4.0	3.5

3.3.2 PSD and Settleability Results

Table 3-8: PSD and Settleability results for Area C3

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1907628008	C3-1	15/03/2019	4	<1	50	46	<1	2.53	1.71	58.4	55.6	55.6	Clear	1.64	60.9	23	23	Clear	
EB1907628009	C3-3	15/03/2019	8	7	13	72	<1	2.48	-	-	-	-	-	-	-	-	-	-	
EB1907628010	C3-5	15/03/2019	9	2	28	61	<1	2.62	-	-	-	-	-	-	-	-	-	-	
EB1907628011	C3-7	15/03/2019	3	1	52	44	<1	2.74	1.65	60.5	57	57	Clear	1.58	63.2	23	23	Clear	
EB1907628012	C3-9	15/03/2019	7	6	15	72	<1	2.59	-	-	-	-	-	-	-	-	-	-	
EB1907628013	C3-11	15/03/2019	7	5	5	83	<1	2.64	-	-	-	-	-	-	-	-	-	-	

3.3.3 Elutriate Results

Table 3-9: Elutriate results for Area C3

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909703011	EB1909703012	EB1909703013	EB1909703014
Sample ID						C3-1	C3-3	C3-9	C3-11
Date Sampled						15/03/2019	15/03/2019	15/03/2019	15/03/2019
Totals in Sediment									
Total Organic Carbon	%	0.02	0.1	-	-	0.12	0.1	0.11	0.13
Tributyltin	µg Sn/kg	0.5	1	-	-	0.6	0.7	0.8	0.7
Normalised to % TOC	µg Sn/kg		-	9	-	3.0	3.5	4.0	3.5
Zinc	mg/kg	1	1	200	-	2	2.4	2.5	2.9
Elutriate (as per NAGD guidelines)									
Tributyltin	ng Sn/L	2	-	-	0.4	<2	4	27	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.01	0.04	0.27	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0	<2.0

3.4 Area C4

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectrual interference (EB1910617).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

3.4.1 Sediment Contamination Results

Table 3-10: Sediment Contamination results for Area C4

Work Order No.					EB1907617020	EB1907617021	EB1907617022	EB1907622016	EB1907617023	EB1907622017	EB1907617024	ADV102-190328	EB1907617011	EB1907617025	EB1907617026	EB1907617027
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	C4-1	C4-3	C4-5	C4-6	C4-7	C4-8	C4-9	D11	D12	C4-11 (T1)	C4-11 (T2)	C4-11 (T3)
Date Sampled					15/03/2019	15/03/2019	15/03/2019	18/03/2019	15/03/2019	18/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019
Misc																
% Moisture	%	1	0.1	-	36.1	12.4	11.2	12	10.9	22	16	-	32	11.7	11.7	12.2
Total Organic Carbon	%	0.02	0.1	-	0.19	0.16	0.12	0.08	0.21	0.09	0.18	0.33	0.13	0.1	0.12	0.1
Total Metals and Metalloids																
Aluminium, Al	mg/kg	50	200	-	450	1330	920	1420	770	310	1080	610	1330	1770	450	1130
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.19	2.1	1.03	2.43	1.3	1.2	1.18	1.20	1.64	2.52	1.08	1.75
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	3.2	6.5	4.1	7.4	3.7	3	6.5	4.6	5.7	8.3	4.2	5.9
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	4.6	1.6	<1.0	3.6	<1.0	1.6	<1.0	1.7	5.0	2.9	1.5	1.6
Iron, Fe	mg/kg	50	100	-	350	990	570	1080	540	240	640	470	820	1300	370	810
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	12	18	12	43	14	10	13	12	25	22	20	13
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.2	1.9	1.3	2.5	1.2	1.1	1.6	1.8	2.0	2.4	1.2	1.5
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	2.4	<2.0	3.9	<2.0	<2.0	<2.0	1.6	2.4	3.9	<2.0	2.6
Zinc, Zn	mg/kg	1	1	200	1.2	3.4	1.5	3.4	1.7	<1.0	1.8	2.8	2.8	4.1	2.6	2.7
1ML HCL Metals and Metalloids																
Aluminium, Al	mg/kg	50	200	-	150	230	160	120	190	150	180	130	170	270	300	310
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.1	<1.0	1.5	<1.0	1.5	1.1	1.5	0.7	1.4	1.6	1.3	1.5
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	0.13	<0.12	<0.12	<0.12	<0.12	<0.5	<0.12	<0.12	<0.11	<0.12
Chromium, Cr	mg/kg	1	1	80	2.2	2	4.3	3.6	3.3	3.4	4.2	3.1	2.9	6.2	5.6	5.3
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	1.6
Iron, Fe	mg/kg	50	100	-	160	180	190	140	190	140	200	130	170	340	320	330
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	13	<10	15	15	13	11	20	10	<10	16	21	16
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	1.1	<1.0	1.1	<1.0	1.2	1.0	1.0	1.4	1.4	1.6
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.6	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	1.8	1.2	1	<1.0	<1.0	0.9	1.2	1.3	1.2	1.7
Organotins																
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	1	<1	<1	<1	<1	1.2	1	1	1	1
Normalised to % TOC	µg Sn/kg	-	-	-			5.0					3.6	5.0	5.0	5.0	5.0
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-												
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	0.8	0.6	1.8	1	1.1	0.6	1.2	1.2	0.7	<0.5	0.6
Normalised to % TOC	µg Sn/kg	-	-	9		4.0	3.0	9.0	4.8	5.5	3.0	3.6	6.0	3.5		3.0

3.4.2 PSD and Settleability Results

Table 3-11: PSD and Settleability results for Area C4

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1907628014	C4-3	15/03/2019	7	2	25	66	<1	2.5	1.57	63.8	55.6	55.6	Clear	1.56	64.2	22.2	22.2	Clear	
EB1907628015	C4-5	15/03/2019	7	4	8	81	<1	2.81	-	-	-	-	-	-	-	-	-	-	
EB1907633016	C4-6	18/03/2019	10	3	5	82	<1	2.81	-	-	-	-	-	-	-	-	-	-	
EB1907628016	C4-7	15/03/2019	7	3	7	83	<1	2.84	-	-	-	-	-	-	-	-	-	-	
EB1907633017	C4-8	18/03/2019	10	2	22	66	<1	2.66	-	-	-	-	-	-	-	-	-	-	
EB1907628017	C4-9	15/03/2019	7	<1	32	61	<1	2.56	-	-	-	-	-	-	-	-	-	-	
EB1907628018	C4-11 (T1)	15/03/2019	9	6	4	81	<1	2.76	-	-	-	-	-	-	-	-	-	-	
EB1907628019	C4-11 (T2)	15/03/2019	7	4	10	79	<1	2.56	-	-	-	-	-	-	-	-	-	-	
EB1907628020	C4-11 (T3)	15/03/2019	5	4	12	79	<1	2.6	-	-	-	-	-	-	-	-	-	-	

3.4.3 Elutriate Results

Table 3-12: Elutriate results for Area C4

Work Order No.						EB1909703015	EB1909703016	EB1910617002	EB1909703017	EB1910617003	EB1909703018	EB1909703019	EB1909703020
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	C4-3	C4-5	C4-6	C4-7	C4-8	C4-9	C4-11 (T1)	C4-11 (T3)
Date Sampled						15/03/2019	15/03/2019	18/03/2019	15/03/2019	18/03/2019	15/03/2019	15/03/2019	15/03/2019
Totals in Sediment													
Total Organic Carbon	%	0.02	0.1	-	-	0.16	0.12	0.08	0.21	0.09	0.18	0.1	0.1
Tributyltin	µg Sn/kg	0.5	1	-	-	0.8	0.6	1.8	1	1.1	0.6	0.7	0.6
Normalised to % TOC	µg Sn/kg		-	9	-	4.0	3.0	9.0	4.8	5.5	3.0	3.5	3.0
Zinc	mg/kg	1	1	200	-	3.4	1.5	3.4	1.7	<1.0	1.8	4.1	2.7
Elutriate (as per NAGD guidelines)													
Tributyltin	ng Sn/L	2	-	-	0.4	7	<2	<3	<2	<3	<2	<2	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.07	0.01	0.015	0.01	0.015	0.01	0.01	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

3.5 Area CX

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	The LOR for tributyltin for particular samples has been raised due to spectral interference (EB1910331).
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

3.5.1 Sediment Contamination Results

Table 3-13: Sediment Contamination Results for Area CX

Work Order No.					EB1907620029	EB1907623001	EB1907620030	EB1907623002	EB1907620031	EB1907623003	EB1907620032	EB1907623004	EB1907620033	EB1907620034	EB1907620035	EB1907623005	EB1907620036	EB1907623006	
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	CX-1	CX-2	CX-3	CX-4	CX-5	CX-6	CX-7	CX-8	CX-9 (T1)	CX-9 (T2)	CX-9 (T3)	CX-10	CX-11	CX-12	
Date Sampled					17/03/2019	19/03/2019	17/03/2019	19/03/2019	17/03/2019	19/03/2019	17/03/2019	19/03/2019	17/03/2019	17/03/2019	17/03/2019	19/03/2019	17/03/2019	19/03/2019	
Misc																			
% Moisture	%	1	0.1	-	8.7	22.3	30.6	31.2	37.3	28.7	24.4	15.2	32.1	34.3	33.5	13.1	30	15.3	
Total Organic Carbon	%	0.02	0.1	-	0.13	0.12	0.15	0.28	0.14	0.17	0.16	0.21	0.22	0.18	0.15	0.16	0.22	0.23	
Total Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	960	70	300	140	310	180	400	840	130	180	360	340	60	290	
Antimony, Sb	mg/kg	0.5	0.5	2	<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	
Arsenic, As	mg/kg	1	1	20	2.03	1.26	1.52	1.2	1.43	1.29	1.67	1.96	2.05	1.07	1.32	1.05	<1.00	1.3	
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Chromium, Cr	mg/kg	1	1	80	6.1	2.6	4	2.2	3.3	3.7	4.7	8.9	3.1	2.7	4.3	3.2	1.6	5.7	
Cobalt, Co	mg/kg	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	
Copper, Cu	mg/kg	1	1	65	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Iron, Fe	mg/kg	50	100	-	810	170	290	170	290	250	360	850	100	210	360	340	100	270	
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Manganese, Mn	mg/kg	10	10	-	14	10	11	<10	<10	<10	13	15	<10	<10	12	15	<10	12	
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Nickel, Ni	mg/kg	1	1	21	2.1	<1.0	1.4	<1.0	1.2	1	1.6	2.6	1.3	<1.0	1.2	1.4	<1.0	1.7	
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Vanadium, V	mg/kg	2	2	-	2.7	<2.0	2	<2.0	2.1	<2.0	2.3	2.6	2	<2.0	<2.0	<2.0	<2.0	<2.0	
Zinc, Zn	mg/kg	1	1	200	2.6	<1.0	<1.0	1	2.9	1.3	<1.0	2.6	2.4	<1.0	3	<1.0	<1.0	1.3	
1ML HCL Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	130	140	<50	90	<50	70	<50	70	<50	<60	<60	100	<60	80	
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Arsenic, As	mg/kg	1	1	20	1.7	1.4	1.8	1.6	2	1.6	1.7	1.4	1.6	1	1.1	1.5	1.3	1.6	
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.13	<0.12	
Chromium, Cr	mg/kg	1	1	80	3.6	3.2	2.7	3	2.5	2.6	2	2.3	2	3	2.2	2.8	2	2.7	
Cobalt, Co	mg/kg	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	
Copper, Cu	mg/kg	1	1	65	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Iron, Fe	mg/kg	50	100	-	200	110	90	100	90	80	60	100	60	100	80	100	70	80	
Lead, Pb	mg/kg	1	1	50	<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	
Manganese, Mn	mg/kg	10	10	-	18	10	10	14	<10	<10	<10	<10	<10	<10	<10	12	<10	11	
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Nickel, Ni	mg/kg	1	1	21	1.2	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	1.2	
Selenium, Se	mg/kg	0.5	0.1	-	<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	
Silver, Ag	mg/kg	1	0.1	1	<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	
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	2	<2.0	2.2	<2.0	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0	<2.0	
Zinc, Zn	mg/kg	1	1	200	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Organotins																			
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	1	1	<1	<2	<1	<1	<1	
Normalised to % TOC	µg Sn/kg	-	-	-								4.8	4.5						
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	10	<1	<1	<1	
Normalised to % TOC	µg Sn/kg	-	-	-											50.0				
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.8	0.8	0.5	137	<0.5	<0.5	<0.5	
Normalised to % TOC	µg Sn/kg	-	-	9								18.1	3.6	2.5	685.0				

3.5.2 PSD and Settleability Results

Table 3-14: PSD and Settleability results for Area CX

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability					
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity
			%	%	%	%	%		g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
Units			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001	0.01	0.1	0.001	0.001		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001	0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1907630029	CX-1	17/03/2019	5	1	31	63	<1	2.62	-	-	-	-	-	-	-	-		
EB1907638001	CX-2	19/03/2019	2	<1	42	56	<1	2.51	-	-	-	-	-	-	-	-		
EB1907630030	CX-3	17/03/2019	3	<1	91	6	<1	2.63	-	-	-	-	-	-	-	-		
EB1907630031	CX-5	17/03/2019	3	<1	93	4	<1	2.53	1.76	57	55.6	55.6	Clear	1.72	58.3	21.8	21.8	Clear
EB1907638002	CX-6	19/03/2019	1	<1	84	15	<1	2.57	-	-	-	-	-	-	-	-		
EB1907630032	CX-7	17/03/2019	6	<1	58	36	<1	2.5	-	-	-	-	-	-	-	-		
EB1907630033	CX-9 (T1)	17/03/2019	11	5	38	46	<1	2.47	-	-	-	-	-	-	-	-		
EB1907630034	CX-9 (T2)	17/03/2019	2	3	74	21	<1	2.57	-	-	-	<1	-	-	-	-		
EB1907630035	CX-9 (T3)	17/03/2019	4	<1	75	21	<1	2.56	-	-	-	-	-	-	-	-		
EB1907630036	CX-11	17/03/2019	3	<1	53	44	<1	2.45	1.69	59.2	55.4	55.4	Clear	1.68	59.6	21.8	21.8	Clear

3.5.3 Elutriate Results

Table 3-15: Elutriate results for Area CX

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1910331007
Sample ID						CX-8
Date Sampled						19/03/2019
Totals in Sediment						
Total Organic Carbon	%	0.02	0.1	-	-	0.21
Tributyltin	µg Sn/kg	0.5	1	-	-	3.8
Normalised to % TOC	µg Sn/kg			9		18.1
Zinc	mg/kg	1	1	200	-	2.6
Elutriate (as per NAGD guidelines)						
Tributyltin	ng Sn/L	2	-	-	0.4	<10
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.05
Zineb	µg/L	2	-	-	-	<2.0

4 Results – Priority Area E

4.1 Area E1

The notes below provide details applicable to results in this section.

Notes

PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

4.1.1 Sediment Contamination Results

Table 4-1: Sediment Contamination results for Area E1

Work Order No.					EB1906964001	EB1906964002	EB1906964003	EB1907622014	EB1906964004	EB1906964005	EB1906964006
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	E1-1	E1-3	E1-5	E1-6	E1-7	E1-9	E1-11
Date Sampled					11/03/2019	11/03/2019	11/03/2019	18/03/2019	11/03/2019	11/03/2019	11/03/2019
Misc											
% Moisture	%	1	0.1	-	21.3	15.5	29.9	22.4	46	14.3	32.7
Total Organic Carbon	%	0.02	0.1	-	0.22	0.18	0.26	0.1	0.22	0.19	0.12
Total Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	180	500	160	180	110	440	240
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.3	1.3	1.4	<1.00	1.03	1.11	1.4
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	1	1	80	2.2	4.5	2.3	2.2	2.3	3.2	2.7
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	2	1.7	1.6	<1.0	1.8	1.3	1.6
Iron, Fe	mg/kg	50	100	-	190	340	170	180	100	340	220
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	11	<10	<10	<10	10	11
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Nickel, Ni	mg/kg	1	1	21	1.2	1.6	1.3	1	<1.0	1.4	1.3
Selenium, Se	mg/kg	0.1	0.1	-	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3
Silver, Ag	mg/kg	0.1	0.1	1	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3
Vanadium, V	mg/kg	2	2	-	<2.0	2.4	2.6	<2.0	2.9	2.7	2.8
Zinc, Zn	mg/kg	1	1	200	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1ML HCL Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	170	180	110	<60	200	120	220
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.4	<1.0	1.2	1.2	1.8	<1.0	1.2
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.13	<0.12	<0.13
Chromium, Cr	mg/kg	1	1	80	2.9	1.8	1.9	2	3.2	2.4	3
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	130	140	100	90	170	100	180
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	10	10	<10	<10	15	<10	14
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	1	<1.0	<1.0	<1.0	1.1	<1.0	2
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	1.4
Organotins											
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-							
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-							
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9							

4.1.2 PSD and Settleability Results

Table 4-2: PSD and Settleability results for Area E1

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906987001	E1-1	11/03/2019	<1	5	54	41	<1	2.33	-	-	-	-	-	-	-	-	-	-
EB1906987002	E1-3	11/03/2019	5	6	28	61	<1	2.34	1.87	48.5	54.2	54.2	Clear	1.66	54.8	20.8	20.8	Clear
EB1906987003	E1-5	11/03/2019	3	<1	62	35	<1	2.36	-	-	-	-	-	-	-	-	-	-
EB1907633014	E1-6	18/03/2019	8	3	42	47	<1	2.47	-	-	-	-	-	-	-	-	-	-
EB1906987004	E1-7	11/03/2019	5	<1	51	44	<1	2.23	-	-	-	-	-	-	-	-	-	-
EB1906987005	E1-9	11/03/2019	5	3	39	53	<1	2.67	-	-	-	-	-	-	-	-	-	-
EB1906987006	E1-11	11/03/2019	3	2	69	26	<1	2.43	-	-	-	-	-	-	-	-	-	-

4.2 Area E2

The notes below provide details applicable to results in this section.

Notes

- PQL Practical Quantitation Limit
- Sample ID Sample location numbers
- No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
- Value exceeds NAGD or agreed screening level
- Normalised to % TOC* Normalised to % TOC, over the range of TOC from 0.2 to 10%
- Not calculated

4.2.1 Sediment Contamination Results

Table 4-3: Sediment Contamination results for Area E2

Work Order No.					EB1906964013	EB1906964014	EB1906964015	EB1906964016	EB1906964017	EB1906964018	EB1906964019	EB1906964020
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	E2-1	E2-3	E2-5	E2-7	E2-9	E2-11 (T1)	E2-11 (T2)	E2-11 (T3)
Date Sampled					12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019	12/03/2019
Misc												
% Moisture	%	1	0.1	-	30	27.5	18	30	24.3	37.2	35.5	33.5
Total Organic Carbon	%	0.02	0.1	-	0.15	0.17	0.21	0.2	0.27	0.14	0.13	0.17
Total Metals and Metalloids												
Aluminium, Al	mg/kg	50	200	-	200	340	360	420	210	120	230	250
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.17	1.54	1.02	1.46	<1.00	<1.00	1.6	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2
Chromium, Cr	mg/kg	1	1	80	3.7	3.6	2.9	3.7	3	1.6	3.1	2.4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	1.3	1.1	1	1.2	<1.0	<1.0	1.2	1
Iron, Fe	mg/kg	50	100	-	190	310	250	350	170	100	200	190
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	18	16	12	11	<10	<10	12	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.4	1.6	1.3	1.5	1.2	<1.0	1.5	1.1
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2
Vanadium, V	mg/kg	2	2	-	2.6	2.6	2.1	2.9	2.2	2.1	2.9	2.2
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1ML HCL Metals and Metalloids												
Aluminium, Al	mg/kg	50	200	-	370	120	80	80	160	140	160	60
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.5	1.3	1.1	<1.0	<1.0	1	1.2	<1.0
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.13	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	2.2	3.2	3.2	<1.0	2.2	2.5	3.1	2.4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	280	100	60	70	90	120	130	70
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	22	<10	<10	<10	<10	<10	<10	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	3.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Organotins												
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg											
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg											
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg			9								

4.2.2 PSD and Settleability Results

Table 4-4: PSD and Settleability results for Area E2

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906987013	E2-1	12/03/2019	5	4	34	57	<1	2.19	1.67	59.8	56.6	56.6	Clear	1.8	61.9	21.8	21.8	Clear
EB1906987014	E2-3	12/03/2019	4	<1	63	33	<1	2.45	-	-	-	-	-	-	-	-	-	-
EB1906987016	E2-7	12/03/2019	5	<1	62	33	<1	2.01	-	-	-	-	-	-	-	-	-	-
EB1906987017	E2-9	12/03/2019	7	1	52	40	<1	2.44	-	-	-	-	-	-	-	-	-	-
EB1906987018	E2-11 (T1)	12/03/2019	4	<1	81	15	<1	2.43	-	-	-	-	-	-	-	-	-	-
EB1906987019	E2-11 (T2)	12/03/2019	3	<1	75	22	<1	2.48	-	-	-	-	-	-	-	-	-	-
EB1906987020	E2-11 (T3)	12/03/2019	4	<1	77	19	<1	2.45	-	-	-	-	-	-	-	-	-	-

4.3 Area E3

The notes below provide details applicable to results in this section.

Notes

PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample.
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

4.3.1 Sediment Contamination Results

Table 4-5: Sediment Contamination results for Area E3

Work Order No.		PQL	NAGD PQL	NAGD Screening Level	EB1906960025	EB1906960026	EB1906960027	EB1906960028	EB1906960029	EB1907622013	EB1906960030
Sample ID	Units				E3-1	E3-3	E3-5	E3-7	E3-9	E3-10	E3-11
Date Sampled					11/03/2019	11/03/2019	11/03/2019	11/03/2019	11/03/2019	18/03/2019	11/03/2019
Misc											
% Moisture	%	1	0.1	-	23.2	17	24.9	32.3	13.4	17.6	23.7
Total Organic Carbon	%	0.02	0.1	-	0.24	0.23	0.13	0.13	0.1	0.16	0.07
Total Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	220	590	430	480	710	1210	880
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.04	1.15	1.05	1.16	<1.00	1.22	1.48
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	3.1	4.8	3.5	4.2	4.9	6.1	6.7
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	13.1	1	1.5
Iron, Fe	mg/kg	50	100	-	190	440	340	390	480	800	730
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	16	15	12	11	14	15
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1	1.9	1.3	1.3	1.7	2	2
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.2
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	1	<1.0	4.7	2.1	1.8
1ML HCL Metals and Metalloids											
Aluminium, Al	mg/kg	50	200	-	70	120	100	80	120	90	140
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	1	<1.0	<1.0	<1.0	1.1	<1.0
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	3.2	4.2	2.9	3	4.9	3.9	4.2
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	2.1
Iron, Fe	mg/kg	50	100	-	70	100	110	90	130	160	140
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	11	11	11	10	13	12	14
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	1.2	<1.0	<1.0	1	<1.0	1
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	2.1	1.1	1.8
Organotins											
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	1	1	2
Normalised to % TOC	µg Sn/kg	-	-	-					5.0	5.0	10.0
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-							
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	1.3	0.6	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9					6.5	3.0	

4.3.2 PSD and Settleability Results

Table 4-6: PSD and Settleability results for Area E3

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906993022	E3-1	11/03/2019	4	<1	14	82	<1	2.71	1.43	63.8	58.2	58.2	Clear	1.52	65.6	22	22	Clear	
EB1906993023	E3-3	11/03/2019	4	<1	15	81	<1	2.87	-	-	-	-	-	-	-	-	-	-	
EB1906993024	E3-5	11/03/2019	2	<1	54	44	<1	2.48	-	-	-	-	-	-	-	-	-	-	
EB1906993025	E3-7	11/03/2019	2	<1	84	14	<1	2.43	1.43	63.5	55.4	55.4	Clear	1.41	64.3	21.8	21.8	Clear	
EB1906993026	E3-9	11/03/2019	4	2	2	92	<1	2.44	-	-	-	-	-	-	-	-	-	-	
EB1907633013	E3-10	18/03/2019	6	4	29	61	<1	2.46	-	-	-	-	-	-	-	-	-	-	
EB1906993027	E3-11	11/03/2019	3	<1	49	48	<1	2.45	1.87	53.5	58	58	Clear	2.09	53.2	24	24	Clear	

4.3.3 Elutriate Results

Table 4-7: Elutriate results for Area E3

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909443027	EB1910617001
Sample ID						E3-9	E3-10
Date Sampled						11/03/2019	18/03/2019
Totals in Sediment							
Total Organic Carbon	%	0.02	0.1	-	-	0.23	0.16
Tributyltin	µg Sn/kg	0.5	1	-	-	<0.5	0.6
Normalised to % TOC	µg Sn/kg	-	-	9	-		3.0
Zinc	mg/kg	1	1	200	-	<1.0	2.1
Elutriate (as per NAGD guidelines)							
Tributyltin	ng Sn/L	2	-	-	0.4	<4	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.02	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0

4.4 Area E4

The notes below provide details applicable to results in this section.

Notes

PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

4.4.1 Sediment Contamination Results

Table 4-8: Sediment Contamination results for Area E4

Work Order No.					EB1906947028	EB1906947029	EB1906947030	EB1906947031	EB1906947032	EB1906947033
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	E4-1	E4-3	E4-5	E4-7	E4-9	E4-11
Date Sampled					9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019	9/03/2019
Misc										
% Moisture	%	1	0.1	-	26.3	23.4	20.8	23	15.4	1.7
Total Organic Carbon	%	0.02	0.1	-	0.28	0.26	0.2	0.18	0.12	0.18
Total Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	740	160	450	150	1620	220
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	2.53	<1.00	1.21	<1.00	1.18	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3
Chromium, Cr	mg/kg	1	1	80	12.5	3.4	5	2.8	4.7	2.1
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	1.1	<1.0	<1.0	<1.0	1.7	<1.0
Iron, Fe	mg/kg	50	100	-	910	200	470	200	780	210
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	17	12	11	<10	12	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Nickel, Ni	mg/kg	1	1	21	2.8	<1.0	<1.0	<1.0	1.1	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3
Vanadium, V	mg/kg	2	2	-	3.8	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	2.2	<1.0	<1.0	<1.0	2.4	<1.0
1ML HCL Metals and Metalloids										
Aluminium, Al	mg/kg	50	200	-	160	220	140	80	130	70
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.3	1.3	1.3	1.2	1.2	<1.0
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.13	<0.12
Chromium, Cr	mg/kg	1	1	80	5.5	2.6	3.2	2.8	4.1	1.8
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	1.5	<1.0
Iron, Fe	mg/kg	50	100	-	190	170	140	90	150	70
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	20	<10	10	<10	22	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	1.1	<1.0	<1.0	<1.0	1	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	1.1	<1.0	1.5	<1.0	1.4	<1.0
Organotins										
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	1	<1
Normalised to % TOC	µg Sn/kg	-	-	-					5.0	
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-						
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg	-	-	9						

4.4.2 PSD and Settleability Results

Table 4-9: PSD and Settleability results for Area E4

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906982021	E4-1	9/03/2019	8	<1	58	34	<1	2.45	1.92	52.1	56.2	56.2	Clear	1.81	55.1	22.6	22.6	Clear	
EB1906982022	E4-3	9/03/2019	7	<1	70	23	<1	2.43	-	-	-	-	-	-	-	-	-	-	
EB1906982023	E4-7	9/03/2019	5	<1	85	10	<1	2.53	1.78	56.3	56	56	Clear	1.77	56.4	22.4	22.4	Clear	
EB1906982024	E4-9	9/03/2019	10	8	34	48	<1	2.84	-	-	-	-	-	-	-	-	-	-	
EB1906982025	E4-11	9/03/2019	5	2	73	20	<1	2.57	-	-	-	-	-	-	-	-	-	-	

4.5 Area EX

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample.
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

4.5.1 Sediment Contamination Results

Table 4-10: Sediment Contamination results for Area EX

Work Order No.					EB1906964021	EB1907623007	EB1906964022	EB1907623008	EB1906964023	EB1906974001	ADV102-190321	EB1907623009	EB1906964024	EB1907623010	EB1906964025	EB1907623011	EB1906964026	EB1907623012	
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	EX-1	EX-2	EX-3	EX-4	EX-5	D5	D6	EX-6	EX-7	EX-8	EX-9	EX-10	EX-11	EX-12	
Date Sampled					12/03/2019	19/03/2019	12/03/2019	19/03/2019	12/03/2019	12/03/2019	12/03/2019	19/03/2019	12/03/2019	19/03/2019	12/03/2019	19/03/2019	12/03/2019	19/03/2019	
Misc																			
% Moisture	%	1	0.1	-	22.1	19.8	30	25.8	32.7	34.9	-	33.6	38.7	28.8	32.9	32.6	27.8	16.8	
Total Organic Carbon	%	0.02	0.1	-	0.12	0.26	0.19	0.14	0.14	0.19	0.37	0.16	0.17	0.19	0.11	0.14	0.15	0.22	
Total Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	130	150	310	270	330	220	360	380	270	200	280	210	140	230	
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Arsenic, As	mg/kg	1	1	20	1.4	1.1	1.54	1.59	1.83	1.07	0.99	1.38	1.98	1.1	1.73	1.26	1.31	1.15	
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Chromium, Cr	mg/kg	1	1	80	2.6	2.8	4	3.5	4.6	3.5	3.4	3.7	4.3	3	5.3	2.5	2.9	3.2	
Cobalt, Co	mg/kg	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	
Copper, Cu	mg/kg	1	1	65	2.5	<1.0	2.5	<1.0	2.5	<1.0	<0.5	<1.0	2.6	<1.0	2.2	<1.0	2	<1.0	
Iron, Fe	mg/kg	50	100	-	170	200	300	300	350	200	290.0	380	420	210	330	220	170	250	
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2	
Manganese, Mn	mg/kg	10	10	-	<10	<10	<10	<10	11	11	9.6	<10	13	<10	12	<10	<10	12	
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Nickel, Ni	mg/kg	1	1	21	1.4	<1.0	2.1	1.2	1.6	1.2	1.2	1.1	1.8	1.3	1.8	1	1.4	1.2	
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Vanadium, V	mg/kg	2	2	-	2.1	<2.0	3.1	<2.0	3.1	<2.0	1.0	<2.0	3.5	<2.0	3.2	<2.0	2.8	<2.0	
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	1	<1.0	<1.0	1.8	2	<1.0	1.2	<1.0	<1.0	<1.0	1.7	
IML HCL Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	70	80	100	110	70	90	97	90	90	<50	70	70	70	80	
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Arsenic, As	mg/kg	1	1	20	1.1	1.5	1.1	1.8	1.3	1.4	0.8	1.5	1.5	1.5	1.2	1.6	1.3	1.6	
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	
Chromium, Cr	mg/kg	1	1	80	2.1	2.3	2.4	2.6	2.6	3.6	2.9	2.6	4	2.1	3	2.2	2.2	2.4	
Cobalt, Co	mg/kg	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	
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Iron, Fe	mg/kg	50	100	-	80	80	90	90	80	90	110.0	100	110	70	90	80	80	90	
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Manganese, Mn	mg/kg	10	10	-	<10	<10	<10	<10	10	12	11	10	14	<10	10	<10	<10	10	
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	1	<1.0	<1.0	0.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	
Selenium, Se	mg/kg	0.5	0.1	-	<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	
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Organotins																			
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<0.5	<1	2	<1	<1	<1	<1	<1	
Normalised to % TOC	µg Sn/kg	-	-	-									10.0						
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<0.5	<1	7	<1	<1	<1	<1	<1	
Normalised to % TOC	µg Sn/kg	-	-	-									35.0						
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	31.6	<0.5	<0.5	<0.5	<0.5	<0.5	
Normalised to % TOC	µg Sn/kg	-	-	9									158.0						

4.5.2 PSD and Settleability Results

Table 4-11: PSD and Settleability results for Area EX

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability						
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1906987021	EX-1	12/03/2019	5	<1	67	28	<1	2.44	-	-	-	-	-	-	-	-	-	-	-
EB1906987022	EX-3	12/03/2019	5	<1	64	31	<1	2.44	-	-	-	-	-	-	-	-	-	-	-
EB1907638004	EX-4	19/03/2019	1	<1	82	17	<1	2.6	-	-	-	-	-	-	-	-	-	-	-
EB1906987024	EX-7	12/03/2019	3	<1	72	25	<1	2.48	-	-	-	-	-	-	-	-	-	-	-
EB1906987025	EX-9	12/03/2019	3	<1	85	12	<1	2.58	-	-	-	-	-	-	-	-	-	-	-
EB1906987026	EX-11	12/03/2019	6	<1	55	39	<1	2.51	1.66	60.1	55.6	55.6	Clear	1.65	60.7	22.4	22.4	Clear	
EB1907638005	EX-12	19/03/2019	2	<1	37	61	<1	2.5	-	-	-	-	-	-	-	-	-	-	-

4.5.3 Elutriate Results

Table 4-12: Elutriate results for Area EX

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1909703005
Sample ID						EX-7
Date Sampled						12/03/2019
Totals in Sediment						
Total Organic Carbon	%	0.02	0.1	-	-	0.17
Tributyltin	µg Sn/kg	0.5	1	-	-	31.6
Normalised to % TOC	µg Sn/kg		-	9	-	158.0
Zinc	mg/kg	1	1	200	-	<1.0
Elutriate (as per NAGD guidelines)						
Tributyltin	ng Sn/L	2	-	-	0.4	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.01
Zineb	µg/L	2	-	-	-	<2.0

5 Results – Priority Area F

5.1 Area F1

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

5.1.1 Sediment Contamination Results

Table 5-1: Sediment Contamination results for Area F1

Work Order No.					EB1906960031	EB1907620001	EB1907620002	EB1907620003	ADVI02-190328	EB1907617012	EB1907620004	EB1907620005	EB1907622008
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	F1-1	F1-3	F1-5	F1-7	D13	D14	F1-9	F1-11	F1-12
Date Sampled					11/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	18/03/2019
Misc													
% Moisture	%	1	0.1	-	18.3	27.6	14.6	21.5	-	16.4	38.3	19.1	31.8
Total Organic Carbon	%	0.02	0.1	-	0.27	0.2	0.17	0.15	0.93	0.18	0.13	0.16	0.09
Total Metals and Metalloids													
Aluminium, Al	mg/kg	50	200	-	270	90	150	260	240	190	470	250	350
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.01	<1.00	<1.00	<1.00	0.77	1.02	1.12	1.18	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	3.4	2.2	2.1	3.3	2.5	3.8	4.3	3.5	4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<0.5	3.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	240	120	140	220	200	190	370	210	320
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	12	<10	<10	<10	6.7	11	11	10	10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.1	<1.0	<1.0	<1.0	1.3	<1.0	1.2	<1.0	1
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	0.7	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	1.7	<1.0	1.0	<1.0	1	1.6	<1.0
1ML HCL Metals and Metalloids													
Aluminium, Al	mg/kg	50	200	-	50	110	110	130	94	90	100	150	<60
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	1.1	<1.0	1.4	0.8	1.2	1.2	1.2	<1.0
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.13	<0.12	<0.5	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	1.9	2.3	2.5	2.5	2.5	3.0	2.3	4.5	2.5
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	<50	110	140	140	100	100	100	160	90
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	<10	<10	15	<10	<10	17	10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	0.8	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	0.6	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Organotins													
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
<i>Normalised to % TOC</i>	µg Sn/kg		-	-									
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<0.5	<1	<1	<1	<1
<i>Normalised to % TOC</i>	µg Sn/kg		-	-									
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<i>Normalised to % TOC</i>	µg Sn/kg		-	9									

5.1.2 PSD and Settleability Results

Table 5-2: PSD and Settleability results for Area F1

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1906993028	F1-1	11/03/2019	4	<1	25	71	<1	2.46	-	-	-	-	-	-	-	-	-	-
EB1907630001	F1-3	15/03/2019	1	3	37	59	<1	2.52	1.73	57.9	56.8	56.8	Clear	1.66	60.4	23	23	Clear
EB1907630002	F1-5	15/03/2019	1	7	18	74	<1	2.48	-	-	-	-	-	-	-	-	-	-
EB1907630003	F1-7	15/03/2019	2	<1	65	33	<1	2.54	-	-	-	-	-	-	-	-	-	-
EB1907630004	F1-9	15/03/2019	1	<1	84	15	<1	2.52	-	-	-	-	-	-	-	-	-	-
EB1907630005	F1-11	15/03/2019	4	6	34	56	<1	2.58	-	-	-	-	-	-	-	-	-	-

5.2 Area F2

The notes in below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

5.2.1 Sediment Contamination Results

Table 5-3: Sediment Contamination results for Area F2

Work Order No.					EB1906947004	EB1906947005	EB1907622009	EB1906947006	EB1906947007	EB1906947008	EB1906947009	EB1906947010	EB1906947011	EB1906947012	EB1906947013	EB1906947014	EB1906947015	EB1907622026	EB1907622027
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	F2-1	F2-2	F2-2a	F2-3	F2-4	F2-5	F2-6	F2-7	F2-8	F2-9	F2-10	F2-11	F2-12	F2-13	F2-14
Date Sampled					8/03/2019	8/03/2019	18/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	8/03/2019	18/03/2019	18/03/2019
Misc																			
% Moisture	%	1	0.1	-	26	15.6	12.7	15	15.4	19.4	19.8	38.7	14	15.8	15.5	29.9	11.5	16.2	12.8
Total Organic Carbon	%	0.02	0.1	-	0.19	0.16	0.06	0.29	0.13	0.28	0.17	0.2	0.14	0.25	0.23	0.22	0.11	0.08	0.08
Total Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	350	400	470	300	500	230	220	470	580	600	300	320	700	420	720
Antimony, Sb	mg/kg	0.5	0.5	2	<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
Arsenic, As	mg/kg	1	1	20	1.2	1.08	1.07	1.34	1.2	<1.00	1.49	1.14	1.28	1.24	1.14	1.1	1.3	1.05	1.12
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	4.3	4.9	5.2	4.2	5.8	3.6	3.3	4.3	7.3	6.3	4.8	3.9	7.3	5.1	6.1
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.4
Iron, Fe	mg/kg	50	100	-	370	450	450	360	580	240	260	460	630	600	380	360	680	380	490
Lead, Pb	mg/kg	1	1	50	<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
Manganese, Mn	mg/kg	10	10	-	18	13	18	12	16	<10	12	11	19	17	15	12	28	28	19
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.6	1.8	1.4	1.5	1.8	1.3	1.2	1.6	2.3	2	1.4	1.4	2.1	1.3	1.8
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	<2.0	2	2.2	2.1
Zinc, Zn	mg/kg	1	1	200	1.1	1.1	<1.0	<1.0	1.9	<1.0	<1.0	1.1	1.4	1.3	<1.0	<1.0	1.4	<1.0	<1.0
1ML HCL Metals and Metalloids																			
Aluminium, Al	mg/kg	50	200	-	100	110	110	70	120	60	80	90	130	90	90	80	100	70	130
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	3.7	3.2	3.8	2.8	4.6	2.9	4.2	2.9	5	3.3	4	3.2	3.7	2.9	6.1
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<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
Iron, Fe	mg/kg	50	100	-	110	90	180	60	120	60	80	90	130	100	90	80	100	110	160
Lead, Pb	mg/kg	1	1	50	<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
Manganese, Mn	mg/kg	10	10	-	11	11	11	<10	18	11	16	<10	18	12	15	13	20	15	18
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	1	1.1	1.1	<1.0	1.2	<1.0	1.2	<1.0	1.4	1	1.2	<1.0	1	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<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
Silver, Ag	mg/kg	1	0.1	1	<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
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1
Organotins																			
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-															
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg	-	-	-															
Tributyltin	µg Sn/kg	0.5	1	-	<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
Normalised to % TOC	µg Sn/kg	-	-	9															

5.2.2 PSD and Settleability Results

Table 5-4: PSD and Settleability results for Area F2

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability					
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity
			%	%	%	%	%		g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
Units			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
<i>Size (mm)</i>			<i><0.02</i>	<i>0.02-0.6</i>	<i>0.6-2</i>	<i>2-60</i>	<i>>60</i>											
EB1906982001	F2-1	8/03/2019	16	1	36	47	<1	2.61	-	-	-	-	-	-	-	-	-	-
EB1907633009	F2-2a	18/03/2019	10	6	11	73	<1	2.51	-	-	-	-	-	-	-	-	-	-
EB1906982002	F2-3	8/03/2019	11	9	26	54	<1	2.59	-	-	-	-	-	-	-	-	-	-
EB1906982003	F2-5	8/03/2019	11	3	32	54	<1	2.6	-	-	-	-	-	-	-	-	-	-
EB1906982004	F2-6	8/03/2019	16	<1	41	43	<1	2.6	1.53	59.5	56.6	56.6	Clear	1.56	58.4	21.8	21.8	Clear
EB1906982005	F2-7	8/03/2019	8	2	57	33	<1	2.58	-	-	-	-	-	-	-	-	-	-
EB1906982006	F2-8	8/03/2019	22	1	5	72	<1	2.75	-	-	-	-	-	-	-	-	-	-
EB1906982007	F2-9	8/03/2019	7	3	40	50	<1	2.56	-	-	-	-	-	-	-	-	-	-
EB1906982008	F2-10	8/03/2019	14	<1	33	53	<1	2.43	-	-	-	-	-	-	-	-	-	-
EB1906982009	F2-11	8/03/2019	6	<1	66	28	<1	2.48	-	-	-	-	-	-	-	-	-	-
EB1906982010	F2-12	8/03/2019	12	<1	21	67	<1	2.53	-	-	-	-	-	-	-	-	-	-
EB1907633026	F2-13	18/03/2019	10	12	10	68	<1	2.46	-	-	-	-	-	-	-	-	-	-
EB1907633027	F2-14	18/03/2019	12	9	2	77	<1	2.71	-	-	-	-	-	-	-	-	-	-

5.3 Area F3

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

5.3.1 Sediment Contamination Results

Table 5-5: Sediment Contamination results for Area F3

Work Order No.					EB1907620006	EB1907622012	EB1907620007	EB1907622034	EB1907620008	EB1907622010	EB1907622001	EB1907622035	EB1907620009	EB1907622011	EB1907620010
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	F3-1	F3-2	F3-3	F3-4	F3-5	F3-6	F3-7	F3-8	F3-9	F3-10	F3-11
Date Sampled					15/03/2019	18/03/2019	15/03/2019	18/03/2019	15/03/2019	18/03/2019	17/03/2019	18/03/2019	15/03/2019	18/03/2019	15/03/2019
Misc															
% Moisture	%	1	0.1	-	18.7	17.9	12.4	12.3	13.8	15.3	12.9	12.8	12.2	16.2	13.8
Total Organic Carbon	%	0.02	0.1	-	0.17	0.06	0.1	0.08	0.08	0.08	0.05	0.05	0.12	0.08	0.14
Total Metals and Metalloids															
Aluminium, Al	mg/kg	50	200	-	910	870	1000	760	1040	780	970	1170	780	340	220
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.52	1.62	<1.00	15.9	1.42	2.09	1.66	7.36	1.09	<1.00	<1.00
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	13.8	<0.2	<0.2	<0.3	5.3	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	5.5	6.3	6.7	19	6.6	7	7.2	15	6.6	4.1	2.6
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	13.6	<0.5	<0.5	<0.5	5.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	14.1	1.6	1.1	<1.0	7.4	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	610	780	670	620	810	750	830	1070	580	340	190
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	15.6	<1.0	<1.0	<1.0	6.2	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	16	14	13	32	20	16	27	28	19	13	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.6	1.8	1.6	14.7	1.5	1.7	2.1	7.2	1.3	1.2	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	16.6	2.4	2	<2.0	8.7	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	2.1	1.2	1.7	13.5	2.8	1.4	2.5	6.4	1.6	1.1	<1.0
1ML HCL Metals and Metalloids															
Aluminium, Al	mg/kg	50	200	-	140	70	200	90	140	70	<60	140	160	<60	120
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.4	1.1	1.6	1.3	1.2	1.5	1.7	1.3	1.3	1	1.1
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.13	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	3.4	3.6	4.7	5.8	3.2	3.6	5	5	4.2	3.1	2.6
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	64.8	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	140	160	250	150	180	160	130	190	200	110	120
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	10	12	12	24	10	13	21	17	14	11	14
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	1.1	<1.0	1.2	<1.0	1	<1.0	<1.0	<1.0	1	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	1.1	<1.0	1.6	1.4	1.3	<1.0	<1.0	<1.0
Organotins															
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg														
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg														
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg														

5.3.2 PSD and Settleability Results

Table 5-6: PSD and Settleability results for Area F3

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability					
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1907630006	F3-1	15/03/2019	4	1	59	36	<1	2.62	1.65	60.4	56	56	Clear	1.63	61.2	23	23	Clear
EB1907633012	F3-2	18/03/2019	4	2	43	51	<1	2.57	-	-	-	-	-	-	-	-	-	-
EB1907630007	F3-3	15/03/2019	12	9	16	63	<1	2.65	-	-	-	-	-	-	-	-	-	-
EB1907633030	F3-4	18/03/2019	8	3	18	71	<1	2.51	-	-	-	-	-	-	-	-	-	-
EB1907630008	F3-5	15/03/2019	5	4	13	78	<1	2.57	-	-	-	-	-	-	-	-	-	-
EB1907633010	F3-6	18/03/2019	10	10	10	70	<1	2.54	-	-	-	-	-	-	-	-	-	-
EB1907633001	F3-7	17/03/2019	6	2	17	75	<1	2.59	-	-	-	-	-	-	-	-	-	-
EB1907630009	F3-9	15/03/2019	8	3	27	62	<1	2.59	1.59	62.9	56.2	56.2	Clear	1.57	63.7	23.2	23.2	Clear
EB1907633011	F3-10	18/03/2019	8	6	23	63	<1	2.56	-	-	-	-	-	-	-	-	-	-
EB1907630010	F3-11	15/03/2019	3	3	57	37	<1	2.55	-	-	-	-	-	-	-	-	-	-

5.4 Area FX

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

5.4.1 Sediment Contamination Results

Table 5-7: Sediment Contamination results for Area FX

Work Order No.					EB1907622002	EB1907622028	EB1907622003	EB1907622029	EB1907622004	EB1907622030	EB1907622005	EB1907622031	EB1907622006	EB1907622032	EB1907622007	EB1907622033
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	FX-1	FX-2	FX-3	FX-4	FX-5	FX-6	FX-7	FX-8	FX-9	FX-10	FX-11	FX-12
Date Sampled					17/03/2019	18/03/2019	17/03/2019	18/03/2019	17/03/2019	18/03/2019	17/03/2019	18/03/2019	17/03/2019	18/03/2019	17/03/2019	18/03/2019
Misc																
% Moisture	%	1	0.1	-	17.4	18.1	24.6	26.3	27.6	28.1	17.2	16	18.7	18.5	29.4	18.2
Total Organic Carbon	%	0.02	0.1	-	0.09	0.12	0.11	0.08	0.11	0.14	0.08	0.08	0.08	0.11	0.08	0.29
Total Metals and Metalloids																
Aluminium, Al	mg/kg	50	200	-	240	1190	340	320	210	290	250	220	270	230	330	170
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.01	1.64	<1.00	1.28	1.14	1.34	<1.00	1.12	<1.00	1.23	1.47	1.1
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	3.1	4.4	4.2	3.5	3.4	3.6	3.4	3.4	4	3.1	5.2	2.8
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	1.3	<1.0	1.2	<1.0	2	<1.0	1.4	<1.0	1.6	<1.0	1.2
Iron, Fe	mg/kg	50	100	-	270	570	350	280	240	230	240	220	250	220	340	170
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	10	12	16	10	16	10	<10	12	10	<10	18	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	1.1	1.4	1.1	1.3	<1.0	1.4	<1.0	1.2	<1.0	1.1	1.4	1.1
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1ML HCL Metals and Metalloids																
Aluminium, Al	mg/kg	50	200	-	<60	70	<60	80	<60	60	<60	60	<60	100	<60	180
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.1	1.2	1.1	1	1	1.2	1.1	1.1	1.1	1.1	1.3	1.2
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	3.2	2.8	2.7	2.4	2.4	2.6	2.4	2.4	2.3	2.4	2.7	3.1
Cobalt, Co	mg/kg	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
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	120	90	100	90	80	80	80	80	80	100	100	140
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	10	10	12	<10	10	<10	16	11	14	10	<10	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Organotins																
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg		-	-												
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg		-	-												
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg		-	9												

5.4.2 PSD and Settleability Results

Table 5-8: PSD and Settleability results for Area FX

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability					
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Clarity
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1907633002	FX-1	17/03/2019	4	2	45	49	<1	2.42	-	-	-	-	-	-	-	-	-	-
EB1907633003	FX-3	17/03/2019	5	1	46	48	<1	2.55	1.65	60.5	58.4	58.4	Clear	1.61	62	22.8	22.8	Clear
EB1907633004	FX-5	17/03/2019	3	2	63	32	<1	2.42	1.6	56.8	56.2	56.2	Clear	1.5	60.6	23	23	Clear
EB1907633005	FX-7	17/03/2019	3	1	58	38	<1	2.46	-	-	-	-	-	-	-	-	-	-
EB1907633029	FX-8	18/03/2019	8	5	27	60	<1	2.65	-	-	-	-	-	-	-	-	-	-
EB1907633006	FX-9	17/03/2019	6	6	35	53	<1	2.38	-	-	-	-	-	-	-	-	-	-
EB1907633007	FX-11	17/03/2019	2	2	69	27	<1	2.46	-	-	-	-	-	-	-	-	-	-

6 Results – Reference Areas

6.1 Area R1

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
<i>Normalised to % TOC</i>	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated

6.1.1 Sediment Contamination Results

Table 6-1: Sediment Contamination results for Area R1

Work Order No.					EB1907617004	EB1907617005	EB1907617006	ADVI02-190328	EB1907617010	EB1907617007	EB1907617008	EB1907617009
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	R1-1	R1-3	R1-5	D9	D10	R1-7	R1-9	R1-11
Date Sampled					15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019	15/03/2019
Misc												
% Moisture	%	1	0.1	-	36.9	23.3	24.7	-	21.5	23	46.3	24.9
Total Organic Carbon	%	0.02	0.1	-	0.23	0.48	0.2	0.50	0.22	0.23	0.19	0.19
Total Metals and Metalloids												
Aluminium, Al	mg/kg	50	200	-	260	300	210	350	210	450	160	170
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.69	1.78	1.5	1.20	1.34	1.28	1.29	1.08
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	4.7	2.6	3.2	3.1	3.8	4	3	2.9
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	2.5	2.5	3	<0.5	3.4	3.4	4.6	3.4
Iron, Fe	mg/kg	50	100	-	350	260	230	270	250	370	160	180
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	11	<10	11	9	12	12	<10	11
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	1.0	<1.0	1.1	<1.0	<1.0
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	1.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	1.4	<1.0	1.2	0.8	1.2	1.4	1.1	<1.0
1ML HCL Metals and Metalloids												
Aluminium, Al	mg/kg	50	200	-	200	110	100	84	70	140	90	80
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1.4	1.5	1.4	0.8	1.2	1.5	1.8	1.3
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.5	<0.13	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	5	2.1	2.3	2.2	1.8	4.1	3	2.6
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	190	100	110	81	90	140	110	90
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	13	<10	<10	10	<10	10	10	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	0.7	<1.0	1.1	1	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
Organotins												
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<0.5	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg		-	-								
Dibutyltin	µgSn/kg	1	1	-	<1	<1	<1	<0.5	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg		-	-								
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg		-	9								

6.1.2 PSD and Settleability Results

Table 6-2: PSD and Settleability results for Area R1

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement	Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min	
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001	
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60											
EB1907628001	R1-1	15/03/2019	1	<1	92	7	<1	2.58	-	-	-	-	-	-	-	-	-	-
EB1907628002	R1-3	15/03/2019	3	1	62	34	<1	2.5	1.62	56.1	56.4	56.4	Clear	1.61	56.4	22.4	22.4	Clear
EB1907628003	R1-7	15/03/2019	3	1	60	36	<1	2.56	-	-	-	-	-	-	-	-	-	-
EB1907628004	R1-9	15/03/2019	3	<1	78	19	<1	2.58	1.7	53.6	55.6	55.6	Clear	1.61	56.6	22.4	22.4	Clear
EB1907628005	R1-11	15/03/2019	1	1	85	13	<1	2.74	-	-	-	-	-	-	-	-	-	-

6.2 Area R2

The notes below provide details applicable to results in this section.

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample location numbers
-	No guidelines levels (i.e. Screening or Maximum Levels) set in NAGD or ANZECC ARMCANZ and GBRMWQG for given parameter, or no analysis undertaken for a given sample
	Value exceeds NAGD or agreed screening level
	Value exceeds ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection
Normalised to % TOC	Normalised to % TOC, over the range of TOC from 0.2 to 10%
	Not calculated
Note	All elutriate blanks returned no detects (below PQL)
*	A 100 times dilution was selected to replicate potential sediment liberation during remediation activities. This is likely to be an underestimation of the extent of dilution.

6.2.1 Sediment Contamination Results

Table 6-3: Sediment Contamination results for Area R2

Work Order No.					EB1907620021	EB1907620022	EB1907620023	EB1907620024	EB1907620025	EB1907620026	EB1907620027	EB1907620028
Sample ID	Units	PQL	NAGD PQL	NAGD Screening Level	R2-1	R2-3	R2-5	R2-7 (T1)	R2-7 (T2)	R2-7 (T3)	R2-9	R2-11
Date Sampled					17/03/2019	17/03/2019	17/03/2019	17/03/2019	17/03/2019	17/03/2019	17/03/2019	17/03/2019
Misc												
% Moisture	%	1	0.1	-	19.1	20.4	33.1	22.2	26.9	22.7	19.2	21.3
Total Organic Carbon	%	0.02	0.1	-	0.23	0.33	0.21	0.17	0.15	0.18	0.23	0.3
Total Metals and Metalloids												
Aluminium, Al	mg/kg	50	200	-	260	250	280	400	250	290	210	220
Antimony, Sb	mg/kg	0.5	0.5	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic, As	mg/kg	1	1	20	1.15	1.37	1.68	1.3	1.21	1.49	1.23	1.67
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium, Cr	mg/kg	1	1	80	2.8	3.9	3.9	4.3	3	3.4	3.6	2.9
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	220	240	280	320	220	240	200	250
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	13	13	12	12	10	<10
Mercury, Hg	mg/kg	0.01	0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel, Ni	mg/kg	1	1	21	<1.0	1.5	1.4	1.7	1.3	1.5	1.2	1.4
Selenium, Se	mg/kg	0.1	0.1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Silver, Ag	mg/kg	0.1	0.1	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vanadium, V	mg/kg	2	2	-	<2.0	2	2.4	<2.0	2	<2.0	<2.0	2.4
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1ML HCL Metals and Metalloids												
Aluminium, Al	mg/kg	50	200	-	<50	<50	<50	<50	<50	<50	<50	<50
Antimony, Sb	mg/kg	2	0.5	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, As	mg/kg	1	1	20	1	1.1	1.7	1.5	1.7	1.5	1.6	1.5
Cadmium, Cd	mg/kg	0.1	0.1	1.5	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chromium, Cr	mg/kg	1	1	80	1.6	1.3	2.1	2.2	2.2	1.9	2.2	1.4
Cobalt, Co	mg/kg	0.5	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper, Cu	mg/kg	1	1	65	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Iron, Fe	mg/kg	50	100	-	50	<50	60	70	70	60	80	<50
Lead, Pb	mg/kg	1	1	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese, Mn	mg/kg	10	10	-	<10	<10	<10	<10	<10	<10	10	<10
Mercury, Hg	mg/kg	0.1	0.01	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel, Ni	mg/kg	1	1	21	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium, Se	mg/kg	0.5	0.1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Ag	mg/kg	1	0.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium, V	mg/kg	2	2	-	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, Zn	mg/kg	1	1	200	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Organotins												
Monobutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg		-	-								
Dibutyltin	µg Sn/kg	1	1	-	<1	<1	<1	<1	<1	<1	<1	<1
Normalised to % TOC	µg Sn/kg		-	-								
Tributyltin	µg Sn/kg	0.5	1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg		-	9								

6.2.2 PSD and Settleability Results

Table 6-4: PSD and Settleability results for Area R2

Work Order No.	Sample ID	Date Sampled	Texture					Soil Particle Density (Clay/Silt/Sand)	10% Settleability				Clarity	20% Settleability				Clarity	
			Clay	Silt	Sand	Gravel	Cobbles		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		Underflow Density	Underflow Solids	Settling Rate @ 50% of Settlement	Settling Rate @ 90% of Settlement		
Units			%	%	%	%	%	g/cm ³	g/cm ³	%	mm/min	mm/min		g/cm ³	%	mm/min	mm/min		
PQL			1	1	1	1	1	0.01	0.01	0.1	0.001	0.001		0.01	0.1	0.001	0.001		
Size (mm)			<0.02	0.02-0.6	0.6-2	2-60	>60												
EB1907630021	R2-1	17/03/2019	1	2	77	20	<1	2.56	1.73	57.9	55.6	55.6	Clear	1.71	58.6	22.8	22.8	Clear	
EB1907630022	R2-3	17/03/2019	6	8	27	59	<1	2.64	-	-	-	-	-	-	-	-	-	-	
EB1907630023	R2-5	17/03/2019	<1	3	78	19	<1	2.53	1.61	61.9	56	56	Clear	1.59	62.7	22.6	22.6	Clear	
EB1907630024	R2-7 (T1)	17/03/2019	3	<1	84	13	<1	2.5	-	-	-	-	-	-	-	-	-	-	
EB1907630025	R2-7 (T2)	17/03/2019	2	<1	78	20	<1	2.45	-	-	-	-	-	-	-	-	-	-	
EB1907630026	R2-7 (T3)	17/03/2019	3	<1	79	18	<1	2.52	-	-	-	-	-	-	-	-	-	-	
EB1907630027	R2-9	17/03/2019	1	3	60	36	<1	2.69	1.69	59.2	56.2	56.2	Clear	1.68	59.6	22.6	22.6	Clear	
EB1907630028	R2-11	17/03/2019	5	8	27	60	<1	2.44	-	-	-	-	-	-	-	-	-	-	

6.2.3 Elutriate Results

Table 6-5: Elutriate results for Area R2

Work Order No.	Units	PQL	NAGD PQL	NAGD Screening Level	ANZECC ARMCANZ and GBRMWQG Criteria for 99% Species Protection	EB1910331004	EB1910331005	EB1910331006
Sample ID						R2-7 (T1)	R2-7 (T2)	R2-7 (T3)
Date Sampled						17/03/2019	17/03/2019	17/03/2019
Totals in Sediment								
Total Organic Carbon	%	0.02	0.1	-	-	0.17	0.15	0.18
Tributyltin	µg Sn/kg	0.5	1	-	-	<0.5	<0.5	<0.5
Normalised to % TOC	µg Sn/kg		-	9	-			
Zinc	mg/kg	1	1	200	-	<1.0	<1.0	<1.0
Elutriate (as per NAGD guidelines)								
Tributyltin	ng Sn/L	2	-	-	0.4	<2	<2	<2
Tributyltin (100 times dilution)*	ng Sn/L	2	-	-	0.4	0.01	0.01	0.01
Zineb	µg/L	2	-	-	-	<2.0	<2.0	<2.0

7 Quality Assessment and Quality Control

7.1 Field Triplicates

Table 7-1: QAQC field triplicate results

Work Order No.	Date Sampled	Sample Description	Total Metals and Metalloids															1ML HCL Total Metals and Metalloids											Organotin										
			Moisture Content	Total Organic Carbon	Aluminium	Antimony	Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Vanadium	Zinc	Aluminium	Antimony	Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Vanadium	Zinc	Monobutyltin	Dibutyltin	Tributyltin
Field Triplicate			%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg Sn/kg	µg Sn/kg	µg Sn/kg	
EB1906960004	10/03/2019	A6-4 (T1)	18.3	0.1	160	<0.50	<1.00	<0.2	2.4	<0.5	1.9	150	<1.0	<10	<0.01	<1.0	<0.2	<0.2	<2.0	<1.0	60	<2.0	<1.0	<0.12	2.3	<0.5	2.8	50	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	3.9
EB1906960005	10/03/2019	A6-4 (T2)	20.6	0.16	330	<0.50	<1.00	<0.2	7.8	<0.5	647	190	1.5	<10	<0.01	1.5	<0.2	<0.2	<2.0	150	70	<2.0	<1.0	<0.12	2.9	<0.5	14.9	80	<1.0	10	<0.10	<1.0	<0.5	<1.0	<2.0	5.4	2	<1	2
EB1906960006	10/03/2019	A6-4 (T3)	40.3	0.14	160	<0.50	<1.00	<0.2	2.7	<0.5	6.2	150	<1.0	<10	<0.01	1.2	<0.2	<0.2	<2.0	2.7	60	<2.0	<1.0	<0.12	2.3	<0.5	1.6	60	<1.0	10	<0.10	<1.0	<0.5	<1.0	<2.0	1.5	1	2	17.1
RSD			46%	23%	45%	ND	ND	ND	71%	ND	170%	14%	ND	ND	ND	16%	ND	ND	ND	136%	9%	ND	ND	ND	14%	ND	114%	24%	ND	0%	ND	ND	ND	ND	80%	47%	ND	107%	
EB1906964018	12/03/2019	E2-11 (T1)	37.2	0.14	120	<0.50	<1.00	<0.2	1.6	<0.5	<1.0	100	<1.0	<10	<0.01	<1.0	<0.2	<0.2	2.1	<1.0	140	<2.0	1.0	<0.12	2.5	<0.5	<1.0	120	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1906964019	12/03/2019	E2-11 (T2)	35.5	0.13	230	<0.50	1.60	<0.3	3.1	<0.5	1.2	200	<1.0	12	<0.01	1.5	<0.3	<0.3	2.9	<1.0	160	<2.0	1.2	<0.12	3.1	<0.5	<1.0	130	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1906964020	12/03/2019	E2-11 (T3)	33.5	0.17	250	<0.50	<1.00	<0.2	2.4	<0.5	1.0	190	<1.0	<10	<0.01	1.1	<0.2	<0.2	2.2	<1.0	60	<2.0	<1.0	<0.12	2.4	<0.5	<1.0	70	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
RSD			5%	14%	35%	ND	ND	ND	32%	ND	13%	34%	ND	ND	ND	22%	ND	ND	18%	ND	44%	ND	13%	ND	14%	ND	ND	30%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB1906974005	14/03/2019	A5-9 (T1)	17.6	0.22	400	<0.50	1.41	<0.2	3.7	<0.5	<1.0	330	<1.0	13	<0.01	1.2	<0.2	<0.2	<2.0	<1.0	60	<2.0	<1.0	<0.12	2.0	<0.5	<1.0	60	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	0.5
EB1906974006	14/03/2019	A5-9 (T2)	29.9	0.26	260	<0.50	1.19	<0.2	3.4	<0.5	<1.0	240	<1.0	14	<0.01	1.1	<0.2	<0.2	<2.0	<1.0	60	<2.0	<1.0	<0.12	2.7	<0.5	1.2	80	<1.0	11	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	22	33	375
EB1906974007	14/03/2019	A5-9 (T3)	20.1	0.27	240	<0.50	<1.00	<0.2	3.2	<0.5	<1.0	210	<1.0	12	<0.01	1	<0.2	<0.2	<2.0	<1.0	60	<2.0	<1.0	<0.12	2.4	<0.5	1.1	60	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	0.9
RSD			29%	11%	29%	ND	12%	ND	7%	ND	13%	34%	ND	ND	ND	24%	ND	ND	18%	ND	0%	ND	13%	ND	15%	ND	6%	17%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	172%
EB1907617025	15/03/2019	C4-11 (T1)	37.2	0.14	120	<0.50	<1.00	<0.2	1.6	<0.5	<1.0	100	<1.0	<10	<0.01	<1.0	<0.2	<0.2	2.1	<1.0	140	<2.0	1.0	<0.12	2.5	<0.5	<1.0	120	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1907617026	15/03/2019	C4-11 (T2)	35.5	0.13	230	<0.50	1.60	<0.3	3.1	<0.5	1.2	200	<1.0	12	<0.01	1.5	<0.3	<0.3	2.9	<1.0	160	<2.0	1.2	<0.12	3.1	<0.5	<1.0	130	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1907617027	15/03/2019	C4-11 (T3)	33.5	0.17	250	<0.50	<1.00	<0.2	2.4	<0.5	1.0	190	<1.0	<10	<0.01	1.1	<0.2	<0.2	2.2	<1.0	60	<2.0	<1.0	<0.12	2.4	<0.5	<1.0	70	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
RSD			5%	14%	35%	ND	ND	ND	32%	ND	13%	34%	ND	ND	ND	22%	ND	ND	18%	ND	44%	ND	13%	ND	14%	ND	ND	30%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB1907620033	17/03/2019	CX-9 (T1)	32.1	0.22	130	<0.50	2.05	<0.2	3.1	<0.5	<1.0	100	<1.0	<10	<0.01	1.3	<0.2	<0.2	2.0	2.4	<50	<2.0	1.6	<0.12	2.0	<0.5	<1.0	60	<1.0	<10	<0.10	<1.0	<0.5	<1.0	2	<1.0	1	<1	0.8
EB1907620034	17/03/2019	CX-9 (T2)	34.3	0.18	180	<0.50	1.07	<0.2	2.7	<0.5	<1.0	210	<1.0	<10	<0.01	<1.0	<0.2	<0.2	<2.0	<1.0	<60	<2.0	1.0	<0.12	3.0	<0.5	<1.0	100	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	0.5
EB1907620035	17/03/2019	CX-9 (T3)	33.5	0.15	360	<0.50	1.32	<0.2	4.3	<0.5	<1.0	360	<1.0	12	<0.01	1.2	<0.2	<0.2	<2.0	3.0	<60	<2.0	1.1	<0.12	2.2	<0.5	<1.0	80	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<2	10	137
RSD			3%	19%	54%	ND	34%	ND	25%	ND	ND	58%	ND	ND	ND	6%	ND	ND	ND	16%	ND	ND	26%	ND	22%	ND	ND	25%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	171%
EB1907620024	17/03/2019	R2-7 (T1)	22.2	0.17	400	<0.50	1.3	<0.2	4.3	<0.5	<1.0	320	<1.0	13	<0.01	1.7	<0.2	<0.2	<2.0	<1.0	<50	<2.0	1.5	<0.12	2.2	<0.5	<1.0	70	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1907620025	17/03/2019	R2-7 (T2)	26.9	0.15	250	<0.50	1.21	<0.2	3.0	<0.5	<1.0	220	<1.0	12	<0.01	1.3	<0.2	<0.2	2.00	<1.0	<50	<2.0	1.7	<0.12	2.2	<0.5	<1.0	70	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1907620026	17/03/2019	R2-7 (T3)	22.7	0.18	290	<0.50	1.49	<0.2	3.4	<0.5	<1.0	240	<1.0	12	<0.01	1.5	<0.2	<0.2	<2.0	<1.0	<50	<2.0	1.5	<0.12	1.9	<0.5	<1.0	60	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
RSD			11%	9%	25%	ND	11%	ND	19%	ND	ND	20%	ND	5%	ND	13%	ND	ND	ND	ND	ND	ND	7%	ND	8%	ND	ND	9%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EB1907623027	20/03/2019	A5-8 (T1)	14.8	0.13	200	<0.50	1.47	<0.2	2.5	<0.5	<1.0	180	<1.0	11	<0.01	<1.0	<0.2	<0.2	<2.0	<1.0	<120	<2.0	1.5	<0.12	2.7	<0.5	<1.0	110	<1.0	<10	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1907623028	20/03/2019	A5-8 (T2)	14.2	0.12	330	<0.50	1.21	<0.2	3.5	<0.5	<1.0	320	<1.0	19	<0.01	1.2	<0.2	<0.2	<2.0	<1.0	<120	<2.0	1.3	<0.12	2.3	<0.5	<1.0	90	<1.0	12	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
EB1907623029	20/03/2019	A5-8 (T3)	13.6	0.18	390	<0.50	1.25	<0.2	4.1	<0.5	<1.0	360	<1.0	15	<0.01	1.2	<0.2	<0.2	2	<1.0	<120	<2.0	1.3	<0.12	2	<0.5	<1.0	110	<1.0	13	<0.10	<1.0	<0.5	<1.0	<2.0	<1.0	<1	<1	<0.5
RSD			4%	22%	32%	ND	11%	ND	24%	ND	ND	33%	ND	27%	ND	0%	ND	ND	ND	ND	ND	ND	8%	ND	15%	ND	ND	11%	ND	6%	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes Relative percent difference (RPD) or relative standard deviation (RSD) outside suggested NAGD data validation level.

ND Not Determinable
NT Not Tested

7.3 Rinsate

Table 7-3: Rinsate results for all sampling days

Work Order No.	Units	PQL	EB1906974015	EB1906974016	EB1906974017	EB1906974018	EB1906974019	EB1907624013	EB1907624014	EB1907624015	EB1907624016	EB1907624017	EB1907624018	EB1907624019
Sample ID			Rinsate #1	Rinsate #2	Rinsate #3	Rinsate #4	Rinsate #5	Rinsate #6	Rinsate #7	Rinsate #8	Rinsate #9	Rinsate #10	Rinsate #11	Rinsate #12
Date Sampled			8/03/2019	9/03/2019	10/03/2019	11/03/2019	12/03/2019	14/03/2019	15/03/2019	16/03/2019	17/03/2019	18/03/2019	19/03/2019	20/03/2019
Total Metals and Metalloids														
Arsenic, As	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium, Cd	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium, Cr	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt, Co	mg/L	0.001	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper, Cu	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lead, Pb	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese, Mn	mg/L	0.001	-	-	-	-	-	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Mercury, Hg	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel, Ni	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium, Se	mg/L	0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium, V	mg/L	0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc, Zn	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.016	0.012	<0.005	<0.005	0.009	<0.005	<0.005

Notes	
PQL	Practical Quantitation Limit
Sample ID	Sample number
-	No analysis undertaken for a given sample
	Value exceeds PQL detection level
Note	In all cases where the PQL detection level is exceeded, the NAGD or agreed screening level is not exceeded (for the corresponding metal on the corresponding day)

7.4 Reanalysis

Table 7-4: Reanalysis results for total and 1M HCL metals (copper and zinc)

Primary / Repeat	Work Order No.	Date Sampled	Sample ID	Copper (Total)	Copper (1 M HCL)	Zinc (Total)	Zinc (1 M HCL)
				mg/kg	mg/kg	mg/kg	mg/kg
Primary	EB1906960019	10/03/2019	A3-5	4.8	387	2.6	33.3
Repeat	EB1906960044	10/03/2019	A3-5	5.4	13.3	3.4	5.4
Repeat DUP	EB1906960045	10/03/2019	A3-5	5.8	19.3	3.9	5.2
Primary	EB1906960003	10/03/2019	A6-3	11.5	514	5.2	62.2
Repeat	EB1906960036	10/03/2019	A6-3	13.3	15.7	6.6	9.2
Repeat (DUP)	EB1906960037	10/03/2019	A6-3	47.8	83.6	13	17.6
Primary	EB1906960010	10/03/2019	A6-8	23	28.4	8.7	13
Repeat	EB1906960038	10/03/2019	A6-8	15.7	69.2	8.1	22.2
Repeat DUP	EB1906960039	10/03/2019	A6-8	17.6	120	10.4	32.5
Primary	EB1906960011	10/03/2019	A6-9	5.6	292	2.6	44.3
Repeat	EB1906960040	10/03/2019	A6-9	5.9	9.5	4.2	4.3
Repeat DUP	EB1906960041	10/03/2019	A6-9	4.3	5.9	2.8	2.8
Primary	EB1906960015	10/03/2019	A8-1	2.2	89.1	<1.0	24.1
Repeat	EB1906960042	10/03/2019	A8-1	3.3	4.1	1.2	1.9
Repeat DUP	EB1906960043	10/03/2019	A8-1	5.6	3.7	1.6	2.9
Primary	EB1907622010	18/03/2019	F3-6	1.1	64.8	1.4	1.6
Repeat	EB1907622039	18/03/2019	F3-6	<1.0	<1.0	1.5	<1.0
Repeat DUP	EB1907622040	18/03/2019	F3-6	<1.0	<1.0	1.7	<1.0

Notes

Sample ID Sample location numbers

Note Other metals and TBT were also reanalysed but not displayed here as they were not the focus of reanalysis

Table 7-5: Triplicate reanalysis results for Organotins

Primary / TriPLICATE	Work Order No.	Date Sampled	Sample ID	Monobutyltin	Dibutyltin	Tributyltin
				µg Sn/kg	µgSn/kg	µg Sn/kg
Primary	EB1907620019	16/03/2019	A8-9	65	252	1750
TriPLICATE	EB1910608019	16/03/2019	A8-9	1	<1	0.6
	EB1910608020	16/03/2019	A8-9	1	<1	0.8
	EB1910608021	16/03/2019	A8-9	1	<1	1.9
Primary	EB1907623013	19/03/2019	AX-2	3	8	16.3
TriPLICATE	EB1910608013	19/03/2019	AX-2	4	6	34.4
	EB1910608014	19/03/2019	AX-2	1	<1	1.4
	EB1910608015	19/03/2019	AX-2	2	<1	1.1
Primary	EB1906947019	9/03/2019	C2-4	1	2	6.3
TriPLICATE	EB1910608004	9/03/2019	C2-4	<1	<1	0.5
	EB1910608005	9/03/2019	C2-4	<1	<1	<0.5
	EB1910608006	9/03/2019	C2-4	<1	<1	<0.5
Primary	EB1906947025	9/03/2019	C2-10	3	10	93.7
TriPLICATE	EB1910608007	9/03/2019	C2-10	2	<1	1.4
	EB1910608008	9/03/2019	C2-10	79	378	2180
	EB1910608009	9/03/2019	C2-10	2	<1	4.6
Primary	EB1907623004	19/03/2019	CX-8	1	<1	3.8
TriPLICATE	EB1910608010	19/03/2019	CX-8	2	<1	3
	EB1910608011	19/03/2019	CX-8	2	1	13.3
	EB1910608012	19/03/2019	CX-8	2	3	19.6
Primary	EB1907620035	17/03/2019	CX-9 (T3)	<2	10	137
TriPLICATE	EB1910608016	17/03/2019	CX-9 (T3)	1	<1	0.6
	EB1910608017	17/03/2019	CX-9 (T3)	<1	<1	<0.5
	EB1910608018	17/03/2019	CX-9 (T3)	<1	<1	<0.5
Primary	EB1906964024	12/03/2019	EX-7	2	7	31.6
TriPLICATE	EB1910608001	12/03/2019	EX-7	<1	<1	1.3
	EB1910608002	12/03/2019	EX-7	1	4	66
	EB1910608003	12/03/2019	EX-7	<1	<1	<0.5

Notes

Sample ID Sample location numbers

Table 7-6: Reanalysis results for NMI laboratory

Primary / Repeat	Work Order No.	Date Sampled	Sample ID	Copper (Total)	Copper (1 M HCL)	Zinc (Total)	Zinc (1 M HCL)	TOC	Monobutyltin	Dibutyltin	Tributyltin
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ng/g	ng/g	ng/g
Primary	ADVI02-190321	10/03/2019	D2	7.1	5.6	2.9	2.6	32000	4.2	0.68	3.6
Repeat	ADV102-190321/1	10/03/2019	D2	4.5	5	2.6	2.3	3600	1	0.6	1.5
Primary	ADVI02-190321	11/03/2019	D4	7.9	4.2	5.2	3.1	20000	3	0.54	1.1
Repeat	ADV102-190321/1	11/03/2019	D4	8.6	5.8	4.2	2.5	2700	50	200	2900
Primary	ADVI02-190328	15/03/2019	D11	1.7	1.1	2.8	0.85	14000	1.2	<0.5	1.2
Repeat	ADV102-190328/1	15/03/2019	D11	2	1.5	2.3	1.2	3300	0.58	0.87	4.2
Primary	ADVI02-190328	20/03/2019	D15	0.85	0.81	1.1	0.84	26000	0.83	<0.5	0.73
Repeat	ADV102-190328/1	20/03/2019	D15	1.7	3.3	1.4	1.5	6000	<0.5	<0.5	0.75

Notes

- Sample ID Sample location numbers
- Note Other metals and TBT were also reanalysed but not displayed here as they were not the focus of reanalysis
- Note Original results were used in all cases, except for TOC where the reanalysis results were used

7.5 Certified Reference Material

Details of the testing methodology and uncertainty limits are contained in the Certificates of Analysis from the National Research Council Canada at Appendix CC.

Table 7-7: Certified Reference Material results for all work orders

Certified Reference Material	Work Order No.	Date Sampled	Total Metals in Sediments																	Monobutyltin	Dibutyltin	Tributyltin
			Aluminium	Antimony	Arsenic	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Vanadium	Zinc				
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
MESS-4	EB1906947001	19/03/2019	9940	<0.50	17.1	0.2	19.1	9	30.4	28500	16.9	250	0.08	27.9	0.8	0.2	46.6	114	-	-	-	
	EB1906960032	11/03/2019	9380	<0.50	17.6	0.2	17.7	10.2	27.1	28200	17.4	227	0.07	29.1	0.8	0.1	44.2	115	-	-	-	
	EB1906964041	12/03/2019	9990	<0.50	17.5	0.2	17.7	10	27.1	29800	17.8	225	0.07	28.9	0.8	0.2	44	115	-	-	-	
	EB1907617001	26/03/2019	10100	<0.50	17.7	0.2	17.2	9.4	28.7	29000	20.4	226	0.06	27.7	0.8	0.1	42.6	107	-	-	-	
	EB1907620037	17/03/2019	8680	<0.50	17.9	0.2	17.4	9.9	25.7	27000	18.3	244	0.07	30.3	0.9	0.1	51.2	110	-	-	-	
	EB1907623032	20/03/2019	9590	<0.50	15.2	0.2	16.5	9.2	23.6	27500	16.6	201	0.07	24	0.8	0.1	38.9	97.2	-	-	-	
	EB1907622036	18/03/2019	10000	<0.50	14.3	0.2	14.4	9	24.2	26800	14.4	192	0.07	26.3	0.6	1.2	36.5	96.8	-	-	-	
EB1907624021	20/03/2019	9180	<0.50	16.7	0.2	18	10	25.9	26600	18.6	217	0.03	26.7	0.8	0.1	42.3	105	-	-	-		
Upper limit*			-	1.2	23.8	0.3	96.1	13.8	34.7	-	22.7	312.0	0.13	44.4	1.5	0.2	224.0	153.0	-	-	-	
Lower limit*			-	0.9	18.9	0.2	92.5	12.2	31.1	-	20.3	284.0	0.05	41.2	1.5	0.1	208.0	141.0	-	-	-	
PACS-3	EB1906947002	19/03/2019	12300	3.43	26.4	2	42.7	6.6	314	29800	178	212	2.68	24.2	1.1	1.1	58	315	-	-	-	
	EB1906960033	11/03/2019	13200	3.66	27.7	2	40.2	7.6	292	31100	176	201	2.18	24.8	1.1	1.1	56.2	328	-	-	-	
	EB1906964042	12/03/2019	12500	3.67	26.9	2	40	7.6	288	27800	177	194	2.12	24.8	1.1	1	55.5	322	-	-	-	
	EB1907617002	26/03/2019	13400	2.86	28	2.1	41.8	7.2	310	29600	203	198	2.67	23.9	1.2	1	54.8	321	-	-	-	
	EB1907620038	17/03/2019	11100	4.05	27.5	2	40.8	7.3	289	27500	196	208	2.13	24.8	1.2	1.1	63	330	-	-	-	
	EB1907623033	20/03/2019	10900	2.88	24.6	1.8	38.8	6.8	264	26000	177	179	2.1	21.1	1.1	1	50.9	282	-	-	-	
	EB1907622037	18/03/2019	13000	3.16	26	2	37.7	7.7	289	26800	163	187	2.42	25.6	1	11.8	51.8	313	-	-	-	
EB1907624022	20/03/2019	12100	2.95	23.5	1.7	36.5	6.5	255	27500	164	167	2.13	20.1	1	0.9	47.8	270	-	-	-		
Upper limit*			-	16.9	32.7	2.4	94.6	12.1	336.0	-	195.4	448.0	3.3	41.7	-	1.2	137.0	388.0	-	-	-	
Lower limit*			-	12.5	27.9	2.1	86.6	12.1	316.0	-	180.6	416.0	2.6	37.3	-	1.0	121.0	364.0	-	-	-	
SOPH-1	EB1906947003	19/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149	97	105	
	EB1906960034	11/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	89	96.4	
	EB1906964043	12/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	94	101	
	EB1907617003	26/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	77	93.5	
	EB1907620039	17/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125	68	88.1	
	EB1907623034	20/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	126	72	84.7	
	EB1907622038	18/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	60	73.3	
EB1907624023	20/03/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	92	87.3		
Upper limit*			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197.0	183.0	132.0	
Lower limit*			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197.0	165.0	118.0	

Notes

- No analysis undertaken for a given sample
- Value exceeds the upper / lower limit specified in the CRM Certificates of Analysis
- * Upper and lower uncertainty limits include certified quantity values, reference values and information values specified in the CRM Certificates of Analysis from the National Research Council Canada
- Note In all cases where the CRM limits are exceeded, the PQL and / or NAGD or agreed screening level is not exceeded (for the corresponding contaminant in the corresponding work order)

