

EION CAMERON SPECIAL ISSUE OF GEEA MANUSCRIPT
BY CARITAT & COOPER (DECEMBER 2014)

Appendix 2. Summary statistics for aqua regia element content data from the National Geochemical Survey of Australia (parameters in italics deemed not fit for purpose) (Caritat & Cooper 2011b)

Element Method*		Type e#	N	N<LL D	%<LL D	Min	25%	Med	75%	Max
Unit LLD-ULD^										
AQUA REGIA										
<i>Ag AR mg/kg 0.002</i>		Tc	1190	280	24%	<0.002	0.003	0.012	0.026	1.08
		Tf	1179	165	14%	<0.002	0.008	0.017	0.031	5.42
		Bc	1191	291	24%	<0.002	0.002	0.011	0.024	3.28
		Bf	1182	200	17%	<0.002	0.007	0.016	0.029	0.646
<i>Al AR mg/kg 100-100K</i>		Tc	1190	0	0%	200	5100	9700	16600	>100000
		Tf	1179	2	0%	<100	9400	14900	22050	94500
		Bc	1191	1	0%	<100	6500	11600	19000	>100000
		Bf	1182	3	0%	<100	11600	17300	25575	>100000
<i>As AR mg/kg 0.1</i>		Tc	1190	46	4%	<0.1	0.9	1.6	2.9	133
		Tf	1179	34	3%	<0.1	1.1	2.1	3.5	80.1
		Bc	1191	30	3%	<0.1	1.1	2.0	3.5	79
		Bf	1182	29	2%	<0.1	1.5	2.7	4.4	140
<i>Au AR mg/kg 0.0001</i>		Tc	1187	216	18%	<0.0001	0.0002	0.0006	0.0012	0.152
		Tf	1175	121	10%	<0.0001	0.0004	0.0008	0.0015	0.269
		Bc	1188	156	13%	<0.0001	0.0003	0.0007	0.0014	0.0662
		Bf	1177	95	8%	<0.0001	0.0006	0.0011	0.0020	0.31
<i>B AR mg/kg 1</i>		Tc	1190	809	68%	<1	<1	<1	1.0	43
		Tf	1179	736	62%	<1	<1	<1	1.0	51
		Bc	1191	742	62%	<1	<1	<1	2.0	49
		Bf	1182	663	56%	<1	<1	<1	2.0	70
<i>Ba AR mg/kg 0.5</i>		Tc	1190	1	0%	<0.5	31.6	68.2	118.0	466
		Tf	1179	2	0%	<0.5	54.8	88.9	134.0	619
		Bc	1191	3	0%	<0.5	34.6	70.3	124.5	612
		Bf	1182	4	0%	<0.5	58.7	104.0	164.8	1490
<i>Be AR mg/kg 0.1</i>		Tc	1190	73	6%	<0.1	0.3	0.6	0.9	11.4
		Tf	1179	26	2%	<0.1	0.6	0.8	1.1	18.1
		Bc	1191	50	4%	<0.1	0.4	0.6	1.0	3.6
		Bf	1182	23	2%	<0.1	0.7	0.9	1.2	10.4
<i>Bi AR mg/kg 0.02</i>		Tc	1190	42	4%	<0.02	0.08	0.12	0.18	29.3
		Tf	1179	11	1%	<0.02	0.12	0.18	0.25	39.3
		Bc	1191	39	3%	<0.02	0.08	0.12	0.19	3.72
		Bf	1182	8	1%	<0.02	0.12	0.18	0.25	8.05
<i>Ca AR mg/kg 100</i>		Tc	1190	50	4%	<100	800	2400	5000	406000
		Tf	1179	18	2%	<100	1600	3400	6450	401000
		Bc	1191	56	5%	<100	800	2800	7200	383000
		Bf	1182	27	2%	<100	1700	4400	9800	386000
<i>Cd AR mg/kg 0.01</i>		Tc	1190	219	18%	<0.01	0.02	0.04	0.07	5.09
		Tf	1179	123	10%	<0.01	0.03	0.05	0.09	22.1
		Bc	1191	289	24%	<0.01	0.01	0.03	0.05	1.42
		Bf	1182	213	18%	<0.01	0.02	0.04	0.07	1.19
<i>Ce AR mg/kg 0.01</i>		Tc	1190	0	0%	0.17	14.75	28.80	43.70	149
		Tf	1179	0	0%	0.03	31.20	42.90	56.80	395
		Bc	1191	1	0%	<0.01	17.10	30.20	43.60	170
		Bf	1182	1	0%	<0.01	33.13	44.30	60.38	295
<i>Co AR mg/kg 0.1</i>		Tc	1190	6	1%	<0.1	2.6	6.3	10.9	70.1

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	Tf	1179	4	0%	<0.1	5.4	8.5	12.1	60.1
	Bc	1191	8	1%	<0.1	3.1	6.7	10.8	141
	Bf	1182	5	0%	<0.1	6.3	9.9	14.0	70.9
Cr AR mg/kg 0.5	Tc	1190	2	0%	<0.5	15.0	23.6	37.2	1660
	Tf	1179	0	0%	0.9	19.6	29.4	47.5	915
	Bc	1191	3	0%	<0.5	16.6	25.7	39.7	1310
	Bf	1182	1	0%	<0.5	23.1	34.6	51.2	1580
Cs AR mg/kg 0.02	Tc	1190	7	1%	<0.02	0.42	0.80	1.39	6.24
	Tf	1179	5	0%	<0.02	0.70	1.16	1.78	7.31
	Bc	1191	5	0%	<0.02	0.55	0.98	1.56	8.33
	Bf	1182	7	1%	<0.02	0.88	1.43	2.09	7.48
Cu AR mg/kg 0.01	Tc	1190	4	0%	<0.01	5.52	11.30	18.00	150
	Tf	1179	2	0%	<0.01	11.00	16.50	24.15	170
	Bc	1191	6	1%	<0.01	6.26	11.80	18.35	268
	Bf	1182	2	0%	<0.01	11.90	17.70	25.50	141
Dy AR mg/kg 0.1	Tc	1190	19	2%	<0.1	0.8	1.6	2.4	6.6
	Tf	1179	6	1%	<0.1	1.8	2.4	3.0	11.1
	Bc	1191	20	2%	<0.1	0.9	1.6	2.4	7.2
	Bf	1182	7	1%	<0.1	1.9	2.5	3.2	11.8
Er AR mg/kg 0.1	Tc	1190	77	6%	<0.1	0.3	0.7	1.1	2.9
	Tf	1179	18	2%	<0.1	0.8	1.1	1.4	3.8
	Bc	1191	51	4%	<0.1	0.4	0.7	1.1	3
	Bf	1182	21	2%	<0.1	0.9	1.1	1.4	4.9
Eu AR mg/kg 0.1	Tc	1190	109	9%	<0.1	0.2	0.5	0.8	2.7
	Tf	1179	24	2%	<0.1	0.6	0.8	1.0	4.3
	Bc	1191	78	7%	<0.1	0.3	0.5	0.8	2.7
	Bf	1182	26	2%	<0.1	0.6	0.8	1.0	3.6
Fe AR mg/kg 100	Tc	1190	1	0%	<100	9400	16500	25775	202000
	Tf	1179	2	0%	<100	16200	23200	33800	175000
	Bc	1191	3	0%	<100	10800	18300	27550	223000
	Bf	1182	3	0%	<100	18700	26550	36500	212000
Ga AR mg/kg 0.02	Tc	1190	2	0%	<0.02	1.98	3.51	5.93	22.6
	Tf	1179	3	0%	<0.02	3.54	5.29	7.62	23.9
	Bc	1191	2	0%	<0.02	2.45	4.34	6.59	36.6
	Bf	1182	3	0%	<0.02	4.34	6.38	8.92	35.2
Gd AR mg/kg 0.1	Tc	1190	12	1%	<0.1	1.1	2.2	3.4	9.1
	Tf	1179	5	0%	<0.1	2.5	3.3	4.3	23.6
	Bc	1191	5	0%	<0.1	1.2	2.3	3.4	10.4
	Bf	1182	7	1%	<0.1	2.6	3.4	4.4	16.6
Ge AR mg/kg 0.1	Tc	1190	1055	89%	<0.1	<0.1	<0.1	<0.1	0.4
	Tf	1179	938	80%	<0.1	<0.1	<0.1	<0.1	0.3
	Bc	1191	1030	86%	<0.1	<0.1	<0.1	<0.1	0.3
	Bf	1182	867	73%	<0.1	<0.1	<0.1	0.1	0.3
Hf AR mg/kg 0.1	Tc	1190	755	63%	<0.1	<0.1	<0.1	0.1	1.1
	Tf	1179	592	50%	<0.1	<0.1	<0.1	0.2	0.8
	Bc	1191	588	49%	<0.1	<0.1	0.1	0.2	2.1
	Bf	1182	497	42%	<0.1	<0.1	0.1	0.2	2.3
Hg AR mg/kg 0.01	Tc	1190	434	36%	<0.01	<0.01	0.01	0.03	3.07
	Tf	1179	273	23%	<0.01	0.01	0.02	0.04	5.74
	Bc	1191	470	39%	<0.01	<0.01	0.01	0.02	0.26
	Bf	1182	334	28%	<0.01	<0.01	0.02	0.03	0.6
Ho AR mg/kg 0.1	Tc	1190	217	18%	<0.1	0.1	0.3	0.4	1.1
	Tf	1179	41	3%	<0.1	0.3	0.4	0.5	1.5

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	Bc	1191	174	15%	<0.1	0.2	0.3	0.4	1.3
	Bf	1182	40	3%	<0.1	0.3	0.5	0.6	2.1
<i>In AR mg/kg 0.02</i>	Tc	1190	763	64%	<0.02	<0.02	<0.02	0.03	0.65
	Tf	1179	467	40%	<0.02	<0.02	0.02	0.03	0.5
	Bc	1191	680	57%	<0.02	<0.02	<0.02	0.03	0.22
	Bf	1182	376	32%	<0.02	<0.02	0.03	0.04	0.24
<i>K AR mg/kg 100</i>	Tc	1190	20	2%	<100	800	1600	3100	31200
	Tf	1179	8	1%	<100	1300	2400	4300	21600
	Bc	1191	25	2%	<100	800	1700	3100	17600
	Bf	1182	11	1%	<100	1300	2500	4800	26900
<i>La AR mg/kg 0.5</i>	Tc	1190	6	1%	<0.5	7.2	13.8	20.7	112
	Tf	1179	5	0%	<0.5	15.0	20.6	27.8	226
	Bc	1191	4	0%	<0.5	8.1	14.3	21.1	74.2
	Bf	1182	7	1%	<0.5	15.1	20.9	28.7	166
<i>Li AR mg/kg 0.1</i>	Tc	1190	8	1%	<0.1	2.8	5.7	10.4	67.4
	Tf	1179	5	0%	<0.1	5.3	9.0	14.6	88
	Bc	1191	7	1%	<0.1	3.5	7.0	11.7	56
	Bf	1182	6	1%	<0.1	6.4	10.9	16.5	86.5
<i>Lu AR mg/kg 0.1</i>	Tc	1190	802	67%	<0.1	<0.1	<0.1	0.1	0.9
	Tf	1179	513	44%	<0.1	<0.1	0.1	0.1	3.7
	Bc	1191	785	66%	<0.1	<0.1	<0.1	0.1	1.2
	Bf	1182	432	37%	<0.1	<0.1	0.1	0.2	0.6
<i>Mg AR mg/kg 100</i>	Tc	1190	38	3%	<100	600	1700	3600	33700
	Tf	1179	10	1%	<100	1300	2600	4300	45000
	Bc	1191	34	3%	<100	1000	2300	4400	47300
	Bf	1182	14	1%	<100	1800	3400	5875	51300
<i>Mn AR mg/kg 1</i>	Tc	1190	1	0%	<1	112	279	488	3740
	Tf	1179	2	0%	<1	239	386	582	3060
	Bc	1191	4	0%	<1	92	245	458	4090
	Bf	1182	1	0%	<1	195	379	603	5380
<i>Mo AR mg/kg 0.01</i>	Tc	1190	69	6%	<0.01	0.11	0.20	0.35	18.2
	Tf	1179	38	3%	<0.01	0.17	0.29	0.47	19.9
	Bc	1191	62	5%	<0.01	0.13	0.23	0.41	63.7
	Bf	1182	29	2%	<0.01	0.22	0.38	0.67	11
<i>Na AR mg/kg 10</i>	Tc	1190	35	3%	<10	80	180	360	32500
	Tf	1179	17	1%	<10	110	210	475	32200
	Bc	1191	23	2%	<10	120	370	1545	28500
	Bf	1182	14	1%	<10	160	485	1968	36700
<i>Nb AR mg/kg 0.1</i>	Tc	1190	392	33%	<0.1	<0.1	0.2	0.3	15.1
	Tf	1179	233	20%	<0.1	0.1	0.2	0.4	17.8
	Bc	1191	542	46%	<0.1	<0.1	0.1	0.2	7.5
	Bf	1182	365	31%	<0.1	<0.1	0.2	0.3	6.5
<i>Nd AR mg/kg 0.02</i>	Tc	1190	0	0%	0.04	6.35	12.50	18.40	51.4
	Tf	1179	1	0%	<0.02	14.20	18.60	23.90	152
	Bc	1191	1	0%	<0.02	7.19	13.00	18.30	54.7
	Bf	1182	2	0%	<0.02	14.50	18.95	25.08	104
<i>Ni AR mg/kg 0.1</i>	Tc	1190	7	1%	<0.1	4.6	9.8	16.7	387
	Tf	1179	5	0%	<0.1	8.4	13.8	21.7	404
	Bc	1191	4	0%	<0.1	5.9	11.5	18.4	458
	Bf	1182	2	0%	<0.1	10.6	16.9	24.8	554
<i>Pb AR mg/kg 0.01</i>	Tc	1190	2	0%	<0.01	3.98	7.26	11.20	1090
	Tf	1179	0	0%	0.01	7.12	10.50	14.00	1520
	Bc	1191	1	0%	<0.01	4.16	7.38	10.90	789

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	Bf	1182	1	0%	<0.01	7.50	10.45	14.10	146
<i>Pr AR mg/kg 0.1</i>	Tc	1190	6	1%	<0.1	1.7	3.3	4.8	14.5
	Tf	1179	5	0%	<0.1	3.6	4.8	6.3	45.3
	Bc	1191	4	0%	<0.1	1.9	3.3	4.8	14.6
	Bf	1182	8	1%	<0.1	3.8	4.9	6.6	30.1
<i>Rb AR mg/kg 0.1</i>	Tc	1190	3	0%	<0.1	6.6	12.6	21.1	96.4
	Tf	1179	3	0%	<0.1	11.8	18.9	29.4	109
	Bc	1191	5	0%	<0.1	8.2	13.9	22.7	88.2
	Bf	1182	5	0%	<0.1	13.4	21.1	32.4	108
<i>Sb AR mg/kg 0.02</i>	Tc	1190	79	7%	<0.02	0.06	0.12	0.19	18.1
	Tf	1179	43	4%	<0.02	0.09	0.15	0.25	37.1
	Bc	1191	71	6%	<0.02	0.07	0.13	0.21	38.9
	Bf	1182	31	3%	<0.02	0.10	0.16	0.26	54.8
<i>Sc AR mg/kg 0.1</i>	Tc	1190	22	2%	<0.1	1.7	3.5	6.3	27.8
	Tf	1179	6	1%	<0.1	3.5	5.4	8.0	27
	Bc	1191	18	2%	<0.1	2.3	4.4	7.0	33
	Bf	1182	5	0%	<0.1	4.3	6.5	9.3	37.4
<i>Se AR mg/kg 0.01</i>	Tc	1191	37	3%	<0.01	0.03	0.06	0.12	2.01
	Tf	1187	19	2%	<0.01	0.05	0.09	0.15	2.5
	Bc	1191	35	3%	<0.01	0.03	0.06	0.13	2.36
	Bf	1186	25	2%	<0.01	0.05	0.09	0.17	4.36
<i>Sm AR mg/kg 0.1</i>	Tc	1190	10	1%	<0.1	1.2	2.6	3.8	10.3
	Tf	1179	6	1%	<0.1	2.9	3.8	4.9	27.2
	Bc	1191	7	1%	<0.1	1.4	2.7	3.8	11.8
	Bf	1182	8	1%	<0.1	3.0	3.9	5.1	19
<i>Sn AR mg/kg 0.05</i>	Tc	1190	29	2%	<0.05	0.41	0.65	0.99	73.2
	Tf	1179	6	1%	<0.05	0.69	0.96	1.31	42.5
	Bc	1191	18	2%	<0.05	0.47	0.71	1.04	67
	Bf	1182	1	0%	<0.05	0.76	1.07	1.39	20.1
<i>Sr AR mg/kg 0.5-1000</i>	Tc	1190	7	1%	<0.5	8.7	22.1	46.3	>1000
	Tf	1179	6	1%	<0.5	17.9	31.7	60.0	>1000
	Bc	1191	11	1%	<0.5	10.5	26.2	63.0	>1000
	Bf	1182	4	0%	<0.5	19.9	40.6	84.7	>1000
<i>Tb AR mg/kg 0.1</i>	Tc	1190	242	20%	<0.1	0.1	0.3	0.4	1.3
	Tf	1179	47	4%	<0.1	0.3	0.4	0.5	2.1
	Bc	1191	189	16%	<0.1	0.1	0.3	0.4	1.2
	Bf	1182	43	4%	<0.1	0.3	0.4	0.6	1.9
<i>Te AR mg/kg 0.02</i>	Tc	1190	461	39%	<0.02	<0.02	0.03	0.05	0.2
	Tf	1179	420	36%	<0.02	<0.02	0.03	0.05	0.26
	Bc	1191	451	38%	<0.02	<0.02	0.03	0.05	0.22
	Bf	1182	361	31%	<0.02	<0.02	0.03	0.05	0.28
<i>Th AR mg/kg 0.1</i>	Tc	1190	4	0%	<0.1	2.3	3.7	5.9	44.2
	Tf	1179	2	0%	<0.1	3.8	5.8	8.6	94.1
	Bc	1191	2	0%	<0.1	2.8	4.3	6.7	41.9
	Bf	1182	5	0%	<0.1	4.5	6.6	9.4	69.2
<i>Tl AR mg/kg 0.02</i>	Tc	1190	96	8%	<0.02	0.04	0.08	0.14	0.49
	Tf	1179	24	2%	<0.02	0.08	0.12	0.18	0.46
	Bc	1191	59	5%	<0.02	0.06	0.10	0.16	0.43
	Bf	1182	20	2%	<0.02	0.10	0.14	0.21	0.57
<i>Tm AR mg/kg 0.1</i>	Tc	1190	628	53%	<0.1	<0.1	<0.1	0.2	0.5
	Tf	1179	284	24%	<0.1	0.1	0.1	0.2	0.5
	Bc	1191	590	50%	<0.1	<0.1	0.1	0.2	0.6
	Bf	1182	249	21%	<0.1	0.1	0.2	0.2	0.7

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U AR mg/kg 0.1	Tc	1190	51	4%	<0.1	0.3	0.5	1.0	35
	Tf	1179	5	0%	<0.1	0.5	0.8	1.6	42.6
	Bc	1191	34	3%	<0.1	0.4	0.6	1.2	16.4
	Bf	1182	7	1%	<0.1	0.6	1.0	1.8	25.7
V AR mg/kg 1	Tc	1190	6	1%	<1	20	33	50	469
	Tf	1179	4	0%	<1	32	46	63	184
	Bc	1191	6	1%	<1	24	39	56	389
	Bf	1182	4	0%	<1	38	54	74	237
WAR mg/kg 0.1-200	Tc	1190	1087	91%	<0.1	<0.1	<0.1	<0.1	174
	Tf	1179	1031	87%	<0.1	<0.1	<0.1	<0.1	>200
	Bc	1191	1047	88%	<0.1	<0.1	<0.1	<0.1	10.7
	Bf	1182	977	83%	<0.1	<0.1	<0.1	<0.1	34.2
Y AR mg/kg 0.01	Tc	1190	0	0%	0.03	3.60	7.58	12.20	31.1
	Tf	1179	1	0%	<0.01	8.63	11.40	14.90	46.4
	Bc	1191	1	0%	<0.01	4.27	7.91	12.00	35.1
	Bf	1182	1	0%	<0.01	9.25	12.40	15.80	57.2
Zn AR mg/kg 0.1	Tc	1190	44	4%	<0.1	13.5	26.5	43.5	262
	Tf	1179	13	1%	<0.1	22.1	37.1	54.6	8910
	Bc	1191	44	4%	<0.1	13.7	26.4	41.6	330
	Bf	1182	16	1%	<0.1	21.4	38.1	52.6	1950
Zr AR mg/kg 0.1	Tc	1190	7	1%	<0.1	1.6	3.2	6.2	53.9
	Tf	1179	1	0%	<0.1	2.3	4.7	8.4	56.4
	Bc	1191	8	1%	<0.1	2.5	4.7	7.8	124
	Bf	1182	5	0%	<0.1	3.2	6.1	10.0	155

*Method: AR: Aqua Regia (see Methods for more details)

^LLD-ULD: Lower Limit of Detection-Upper Limit of Detection (if applicable)

#Type: Bc: Bottom Outlet Sediment coarse (< 2 mm); Bf: Bottom Outlet Sediment fine (< 75 µm); Tc: Top Outlet Sediment coarse (< 2 mm); Tf: Top Outlet Sediment fine (< 75 µm)