Ministry of Energy and Mines
Mines and Minerals Division
Geosciences, Research & Development Branch

Re-analysis of Regional Stream Sediment Survey Samples from the Queen Charlotte Islands

(NTS 103F/1,7, 8, 9,10; 103G/4, 5)

by Aqua Regia Digestion and Inductively Coupled Plasma Mass Spectrometry

Ray Lett

Geofile 2003-19

Results of RGS Sample re-analysis by aqua regia-ICP/MS

Queen Charlotte Islands (NTS 103F/1,7, 8, 9,10; 103G/4, 5)

Introduction

This Geofile presents new analytical data for 37 different elements from a regional stream sediment and water geochemical survey (Figure 1) conducted by the British Columbia Ministry of Energy and Mines on the Queen Charlotte Islands in 1999. The survey covers parts of seven 1:50,000 NTS map sheets in the Graham Island (NTS 103F) and the Hecate Strait (NTS 103G) areas and was originally funded under the government's Corporate Resource Inventory Initiative (CRII) as part of the Ministry of Energy and Mines' contribution to the Queen Charlotte Islands Land Resource Planning process.

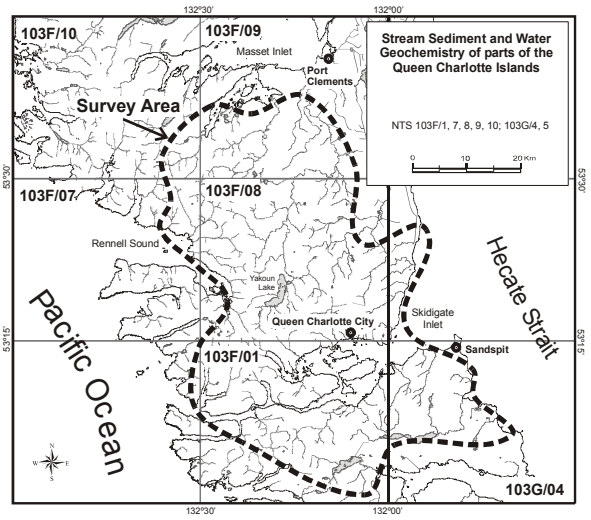


Figure 1. Location map of the Queen Charlotte Islands survey area (from Jackaman *et al*., 2000)

Results of instrumental neutron activation (INAA) and aqua regia digestion-atomic absorption spectrometry (AAS) analyses of 195 moss mat sediment samples have previously been reported in 2000 by Jackaman, Payie and Wojdak. At the request of the Ministry of Sustainable Resources Management the samples were re-analysed for trace and minor elements by aqua regia digestion - inductively coupled plasma mass spectrometry and emission spectrometry (ICP/MS, ICP/ES) in 2002.

This Geofile describes the results of the re-analysis. The report comprises the following sections:

- Introduction
- Summary of survey methods and sample analysis
- Listings of sample location and analytical data (Appendix A)
- Sample location and element symbol maps (Appendix B)

Survey methods and sample analysis

A total of 195 moss mat sediment and 193 stream water samples were collected from 184 sites in 1999. Average sample site density was 1 site per 10 square kilometres over the 1,800 square kilometre survey area. Details of sample collection are described by Jackaman *et al.,*2000.

The – 80 mesh (< 0.177 mm) fraction of the air dried fraction of each sample was analysed for 37 elements by aqua regia digestion – ICP/MS and ICP/ES at Acme Analytical Laboratories, Vancouver, BC. A 1 gram of the – 80 mesh sample was digested with 6 mL of an HCl-HNO_3-H_2O mixture (2:2:2 v/v) for one hour at 95^{o}C. The diluted solution was then analysed by a combination of ICP/MS and ICP/ES. A list of the elements determined and their detection limits are given in Table 1.

Correlation coefficients from concentrations of elements determined by aqua regia-AAS as reported by Jackaman *et al.,* 2000 compared to values by aqua regia-ICP/MS are listed in Table 2. Most elements have high, positive correlations coefficients indicating that both methods produce very similar results. However, a low correlation coefficient (+0.27) for Ag reflects the difference between the ICP/MS detection limit (2 ppb) and the AAS detection limit (200 ppb). The weak correlation (+0.26) for Hg by the two methods most likely reflects a heterogeneous distribution in the organic component of the stream sediment.

Table 1. Detection limits by aqua regia-ICPMS

Element		Detection Limit	Units
Aluminum	Al	0.01	%
Antimony	Sb	0.02	ppm
Arsenic	As	0.1	ppm
Barium	Ba	0.5	ppm
Bismuth	Bi	0.02	ppm
Boron	B	1	ppm
Cadmium	Cd	0.01	ppm
Calcium	Ca	0.01	%
Chromium	Cr	0.5	ppm
Cobalt	Co	0.1	ppm
Copper	Cu	0.01	ppm
Gallium	Ga	0.2	ppm
Gold	Au	0.2	ppb
Iron	Fe	0.01	%
Lanthanum	La	0.5	ppm
Lead	Pb	0.01	ppm
Magnesium	Mg	0.01	%
Manganese	Mn	1	ppm
Mercury	Hg	5	ppb
Molybdenum	Mo	0.01	ppm
Nickel	Ni	0.1	ppm
Phosphorus	P	0.001	%
Potassium	K	0.01	%
Scandium	Sc	0.1	ppm
Selenium	Se	0.1	ppm
Silver	Ag	2	ppb
Sodium	Na	0.001	%
Strontium	Sr	0.5	ppm
Sulphur	S	0.02	%
Tellurium	Te	0.02	ppm
Thallium	Tl	0.02	ppm
Thorium	Th	0.1	ppm
Titanium	Ti	0.001	%
Tungsten	W	0.2	ppm
Uranium	U	0.1	ppm
Vanadium	V	2	ppm
Zinc	Zn	0.1	ppm

Control reference materials were inserted into each analytical block of twenty sediment samples to monitor analytical precision. An estimate of precision (expressed as percent relative standard deviation) for each element based on the results of duplicate analyses of standard STSD-1 is shown in Table 3. Most of the %RSD values in Table 3 are below 5 percent. The exceptions are Au and Hg. Also listed in Table 3 are the CANMET recommended values for STSD 1. Data for Ag, As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Mo, Ni, Pb, Sb, V and Zn values are for a concentrated HNO_3-HCl digestion; all other elements are reflect a "total" analysis.

Table 2. Correlation Coefficients for elements by AAS and ICP/MS

Element		Correlation Coefficient
Antimony	Sb	0.85
Arsenic	As	0.99
Bismuth	Bi	0.56
Cadmium	Cd	0.97
Cobalt	Co	0.97
Copper	Cu	0.99
Iron	Fe	0.82
Lead	Pb	0.92
Manganese	Mn	0.99
Mercury	Hg	0.26
Molybdenum	Mo	0.68
Nickel	Ni	0.99
Silver	Ag	0.27
Vanadium	V	0.89
Zinc	Zn	0.94

Table 3. Precision (percent relative standard deviation) for duplicate analyses for CANMET sediment standard STSD-1

Element	Unit	Mean	% RSD	CANMET Values
Silver	ppb	287	7.2	300
Aluminium	%	1.12	1.3	4.76
Arsenic	ppm	18.3	1.2	17
Gold	ppb	7.5	64.1	8
Boron	ppm	7	10.9	89
Barium	ppm	290.0	0.2	630
Bismuth	ppm	0.47	4.6	nr
Calcium	%	1.57	1.8	2.57
Cadmium	ppm	0.82	0.0	0.8
Cobalt	ppm	14.1	1.0	14
Chromium	ppm	25.7	1.4	28
Copper	ppm	34.83	2.3	36
Iron	%	3.08	2.5	3.5
Gallium	ppm	3.7	1.9	nr
Mercury	ppb	112	22.2	110
Potassium	%	0.07	0.0	1
Lanthanium	ppm	20.7	1.0	30
Magnesium	%	0.75	1.9	0.634
Manganese	ppm	3698	1.7	3740
Molybdenum	ppm	1.05	4.0	2
Sodium	%	0.02	0.0	1.34
Nickel	ppm	19.2	2.9	18
Potassium	%	0.148	5.3	0.175
Lead	ppm	36.24	3.9	34
Sulphur	%	0.21	3.4	0.18
Antimony	ppm	2.35	6.3	2
Scandium	ppm	2.8	2.6	14
Selenium	ppm	2.0	3.6	nr
Strontium	ppm	26.8	3.2	170
Telliuium	ppm	0.05	28.3	nr
Thorium	ppm	0.9	8.3	3.7
Titanium	%	0.03	8.0	0.48
Tlallium	ppm	0.21	0.0	nr
Uranium	ppm	5.9	2.4	8
Vanadium	ppm	47	3.0	47
Tungsten	ppm	0.2	0.0	<4
Zinc	ppm	150.9	1.5	165

Table 4. Statistics for elements by aqua regia-ICP/MS – All Samples

Element	Units	Method	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	ARMS	183	59	43	66	12	24	28	33	37	43	51	59	69.8	100	134	197	341	686
Ag	ppm	AAS	183	0.22	0.20	0.28	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.32	4.00
Al	%	ARMS	183	2.11	2.07	0.55	0.78	1.49	1.71	1.85	1.97	2.07	2.15	2.26	2.50	2.86	3.17	3.48	3.59	3.84
As	ppm	ARMS	183	14.6	8.2	25.1	0.1	3.2	4.4	5.9	6.9	8.2	9.3	10.6	17.0	28.6	48.6	77.1	130.3	244.4
As	ppm	AAS	183	14.3	7.7	23.7	0.5	2.6	4.0	5.7	6.5	7.7	8.4	10.7	17.0	30.8	50.3	80.4	124.9	200.0
Au	ppb	ARMS	183	29.5	0.7	318.5	-0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.6	2.2	5.7	40.9	228.6	4247.6
Au	ppb	INAA	183	18	-2	63	-2	-2	-2	-2	-2	-2	2	4	5	46	137	220	265	580
B	ppm	ARMS	183	4	3	4	-1	1	2	2	3	3	4	4	6	9	12	15	19	21
Ba	ppm	ARMS	183	124.1	108.6	78.2	23.2	53.0	65.1	82.0	92.1	108.6	123.7	138.3	156.7	201.9	310.0	364.5	420.6	492.0
Bi	ppm	ARMS	183	0.20	0.08	0.87	0.02	0.04	0.05	0.06	0.07	0.08	0.09	0.11	0.13	0.18	0.40	1.34	1.83	11.19
Bi	ppm	AAS	183	0.4	0.2	1.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.8	4.7	20.0
Ca	%	ARMS	183	0.62	0.55	0.33	0.09	0.31	0.40	0.44	0.48	0.55	0.60	0.66	0.81	1.14	1.39	1.46	1.72	1.79
Cd	ppm	ARMS	183	0.20	0.11	0.31	0.02	0.06	0.08	0.08	0.10	0.11	0.13	0.16	0.23	0.40	0.66	0.97	1.24	2.87
Cd	ppm	AAS	183	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.6	0.8	1.0	1.5	3.1
Co	ppm	ARMS	183	14.4	14.0	4.5	2.8	9.6	11.3	12.1	13.1	14.0	15.0	16.3	17.2	20.5	21.9	25.8	26.5	28.1
Co	ppm	AAS	183	13	13	4	2	8	10	11	12	13	13	14	16	18	21	23	24	28
Cr	ppm	ARMS	183	23.5	20.8	12.4	2.6	13.1	15.4	17.5	19.2	20.8	22.6	25.2	28.9	36.8	49.2	59.3	68.1	95.0
Cu	ppm	ARMS	183	22.93	18.97	17.14	2.87	9.97	12.26	14.42	17.13	18.97	22.00	25.87	28.68	37.78	50.84	70.13	76.05	165.88
Cu	ppm	AAS	183	26	22	18	5	14	16	18	20	22	26	28	31	41	52	75	79	187
F	ppm	ION	183	166	170	45	80	110	130	140	160	170	172	190	206	220	240	250	267	320
Fe	%	ARMS	183	3.67	3.75	0.82	0.97	2.60	3.01	3.33	3.51	3.75	3.89	4.08	4.26	4.62	5.00	5.31	5.62	6.10
Fe	%	AAS	183	3.3	3.2	0.8	0.9	2.4	2.7	3.0	3.1	3.2	3.4	3.6	3.8	4.1	4.7	5.3	5.7	6.2
FW	ppb	ION	183	33	32	10	-1	22	25	26	30	32	34	36	40	46	50	52	54	82
Ga	ppm	ARMS	183	6.8	6.5	1.6	3.0	5.3	5.7	6.0	6.2	6.5	6.7	7.3	8.1	8.9	10.2	10.6	11.3	12.3
Hg	ppb	ARMS	183	828	100	2477	13	46	60	73	82	100	145	240	441	1496	4510	9386	13409	19101
Hg	ppm	AAS	183	832	90	3023	10	50	60	60	80	90	130	180	266	942	5080	8270	12467	26000
K	%	ARMS	183	0.07	0.07	0.02	0.02	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.12	0.13	0.17
La	ppm	ARMS	183	8.8	8.0	3.6	2.9	5.1	5.8	6.6	7.2	8.0	8.8	9.9	11.5	14.4	16.0	18.2	19.5	21.6
LOI	%	FUS	183	10.2	9.2	5.0	3.9	6.0	7.1	7.9	8.6	9.2	9.9	10.9	12.9	14.4	16.2	19.4	24.7	57.4
Mg	%	ARMS	183	0.78	0.73	0.32	0.16	0.49	0.55	0.62	0.66	0.73	0.79	0.86	0.96	1.17	1.42	1.73	1.87	2.04
Mn	ppm	ARMS	183	1210	951	937	145	580	663	768	843	951	1112	1237	1522	2074	2442	3812	5778	7492
Mn	ppm	AAS	183	913	643	883	82	366	448	497	540	643	734	976	1176	1740	2147	3345	5730	6490
Mo	ppm	ARMS	183	1.19	0.87	1.11	0.26	0.47	0.58	0.65	0.71	0.87	1.04	1.25	1.47	2.17	3.06	3.95	4.94	10.08
Mo	ppb	AAS	183	2	2	1	1	1	1	1	2	2	2	2	3	4	4	5	6	10
Na	%	ARMS	183	0.031	0.026	0.023	0.008	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.07	0.09	0.12	0.19
Ni	ppm	ARMS	183	16.8	13.5	12.4	1.6	7.7	10.4	11.4	12.4	13.5	15.1	16.9	20.16	26.1	39.9	64.6	72.3	90.1
Ni	ppm	AAS	183	15	12	12	2	7	8	10	11	12	13	15	18	24	38	60	69	86
P	%	ARMS	183	0.061	0.059	0.017	0.022	0.041	0.047	0.052	0.055	0.059	0.064	0.069	0.075	0.082	0.091	0.101	0.107	0.130
Pb	ppm	ARMS	183	6.61	5.99	3.58	1.72	3.90	4.39	4.88	5.53	5.99	6.45	7.09	8.42	9.95	11.34	13.38	14.79	41.07
Pb	ppm	AAS	183	4	3	3	2	2	2	2	3	3	4	5	6	7	8	9	10	25
pH		ELE	183	7.2	7.2	0.9	-1.0	6.8	6.9	7.0	7.1	7.2	7.4	7.5	7.6	7.8	7.9	8.0	8.1	8.3
S	%	ARMS	183	0.08	0.04	0.17	0.01	0.02	0.03	0.03	0.04	0.04	0.05	0.07	0.11	0.16	0.22	0.30	0.54	2.08
Sb	ppm	ARMS	183	0.58	0.38	0.63	0.04	0.18	0.22	0.29	0.33	0.38	0.44	0.52	0.73	1.32	1.59	2.61	2.88	5.19
Sb	ppm	AAS	183	0.8	0.5	0.9	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.8	1.0	1.8	2.5	3.5	4.3	7.0
Sc	ppm	ARMS	183	4.2	4.1	1.4	0.9	2.2	3.1	3.4	3.8	4.1	4.5	4.8	5.4	6.2	6.6	6.9	7.4	8.2
Se	ppm	ARMS	183	0.7	0.6	0.5	-0.1	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.30	1.60	1.84	2.13	4.10
SO4	ppm	TUB	183	5	4	4	-1	3	3	3	4	4	5	6	7	10	13	19	21	29
Sr	ppm	ARMS	183	51.0	43.5	32.1	7.1	22.7	26.7	30.8	37.2	43.5	48.9	54.4	67.1	94.1	117.1	141.4	169.9	186.2
Te	ppm	ARMS	183	0.04	0.02	0.20	-0.02	-0.02	-0.02	-0.02	0.02	0.02	0.03	0.04	0.05	0.07	0.08	0.12	0.51	2.57
Th	ppm	ARMS	183	1.3	1.2	0.7	0.2	0.5	0.6	0.8	1.0	1.2	1.3	1.5	1.8	2.30	2.7	2.9	3.2	4.4
Ti	%	ARMS	183	0.087	0.070	0.080	-0.001	0.01	0.02	0.04	0.06	0.07	0.09	0.11	0.14	0.17	0.22	0.29	0.37	0.60
Tl	ppm	ARMS	183	0.08	0.06	0.09	0.02	0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.09	0.15	0.23	0.35	0.46	0.77
U	ppm	ARMS	183	0.4	0.4	0.3	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.7	0.8	1.0	1.5	2.3
UW	ppb	FLU	183	0.04	0.05	0.11	-1.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.08	0.13	0.29
V	ppm	ARMS	183	89	80	37	19	51	60	67	73	80	89	99	115	144	165	182	195	227
V	ppm	AAS	183	73	69	29	16	46	53	60	64	69	73	79	89	108	132	148	156	242
W	ppm	ARMS	183	-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	0.2	0.4
Zn	ppm	ARMS	183	83.0	78.4	28.8	21.6	55.1	63.1	69.4	72.9	78.4	82.4	91.4	102.9	116.4	127.1	143.3	163.8	238.5
Zn	ppm	AAS	183	78	73	29	15	54	61	67	71	73	77	82	94	105	120	134	162	263

Table 5. Statistics for elements by aqua regia-ICP/MS – Unit NTS: Skonun Formation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	6	130	22	272	12	14	15	19	21	22	22	23	24	355	521	620	653	686
Al	%	6	1.16	1.10	0.40	0.78	0.81	0.82	0.91	0.99	1.10	1.20	1.26	1.32	1.59	1.73	1.81	1.83	1.86
As	ppm	6	3.9	3.2	2.3	1.2	1.8	2.2	2.5	2.5	3.2	3.9	5.2	6.5	6.7	6.8	6.9	6.9	6.9
Au	ppb	6	708.2	0.3	1734.0	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	2124.0	3185.8	3822.9	4035.2	4247.6
Ba	ppm	6	55.7	53.0	16.8	36.0	40.1	42.6	46.1	47.9	53.0	58.1	61.5	64.8	73.9	78.5	81.2	82.1	83.0
B	ppm	6	5	4	4	3	3	3	3	3	4	4	5	5	10	12	13	14	14
Bi	ppm	6	0.04	0.03	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Ca	%	6	0.24	0.25	0.08	0.09	0.15	0.18	0.22	0.23	0.25	0.26	0.29	0.31	0.32	0.32	0.32	0.32	0.32
Cd	ppm	6	0.05	0.04	0.04	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.07	0.10	0.11	0.11	0.11	0.11	0.11
Co	ppm	6	7.1	4.7	5.3	2.8	3.0	3.1	3.3	3.4	4.7	6.0	8.9	11.8	13.7	14.6	15.1	15.3	15.5
Cr	ppm	6	12.8	13.2	2.6	8.9	9.9	10.4	11.4	12.0	13.2	14.4	14.7	14.9	15.3	15.4	15.5	15.6	15.6
Cu	ppm	6	6.12	4.36	3.51	2.87	3.43	3.77	4.17	4.34	4.36	4.37	7.16	9.95	10.57	10.87	11.06	11.12	11.18
Fe	%	6	1.85	1.58	0.90	0.97	1.04	1.07	1.24	1.37	1.58	1.79	2.22	2.65	2.93	3.07	3.15	3.18	3.21
Ga	ppm	6	4.8	5.0	1.2	3.0	3.4	3.6	4.3	4.7	5.0	5.2	5.3	5.3	5.9	6.2	6.4	6.4	6.5
Hg	ppb	6	3234	68	7773	22	26	28	43	57	68	79	97	115	9608	14355	17202	18152	19101
K	%	6	0.07	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.12	0.14	0.16	0.16	0.17
La	ppm	6	6.2	6.7	1.9	3.4	3.9	5.7	5.2	6.1	6.7	7.2	7.5	7.8	8.0	8.0	8.1	8.1	8.1
Mg	%	6	0.42	0.37	0.21	0.17	0.25	0.30	0.35	0.36	0.37	0.38	0.45	0.51	0.65	0.72	0.76	0.78	0.79
Mn	ppm	6	650	265	683	145	160	169	184	192	265	338	884	1430	1524	1571	1599	1609	1618
Mo	ppm	6	0.53	0.51	0.22	0.29	0.32	0.33	0.40	0.46	0.51	0.55	0.60	0.65	0.77	0.83	0.87	0.88	0.89
Na	%	6	0.019	0.019	0.005	0.012	0.015	0.016	0.017	0.017	0.019	0.020	0.021	0.021	0.024	0.026	0.026	0.027	0.027
Ni	ppm	6	6.1	6.1	1.6	4.3	4.6	4.7	4.9	5.0	6.1	7.2	7.2	7.2	7.7	8.0	8.1	8.2	8.2
Pb	ppm	6	3.86	4.17	1.23	2.18	2.38	2.49	3.28	3.98	4.17	4.36	4.65	4.93	5.04	5.09	5.12	5.13	5.14
P	%	6	0.040	0.036	0.015	0.022	0.027	0.029	0.032	0.032	0.036	0.039	0.045	0.051	0.058	0.061	0.063	0.063	0.064
Sb	ppm	6	0.18	0.18	0.09	0.05	0.09	0.11	0.14	0.15	0.18	0.20	0.23	0.25	0.27	0.28	0.29	0.29	0.29
Sc	ppm	6	2.1	1.8	0.9	1.2	1.4	1.5	1.7	1.7	1.8	1.8	2.3	2.7	3.1	3.3	3.4	3.5	3.5
Se	ppm	6	0.4	0.4	0.2	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.6
S	%	6	0.02	0.02	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
Sr	ppm	6	24.4	23.0	9.0	15.4	16.0	16.3	19.3	22.0	23.0	23.9	26.5	29.0	34.4	37.1	38.7	39.3	39.8
Te	ppm	6	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.04	0.04	0.04
Th	ppm	6	1.6	1.2	1.4	0.5	0.6	0.9	0.8	1.0	1.2	1.3	1.5	1.6	3.0	3.7	4.1	4.3	4.4
Ti	%	6	0.067	0.071	0.013	0.049	0.052	0.053	0.061	0.067	0.071	0.075	0.076	0.076	0.079	0.080	0.081	0.081	0.081
Tl	ppm	6	0.04	0.04	0.01	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06
U	ppm	6	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
V	ppm	6	53	40	28	30	31	32	34	35	40	44	64	83	88	91	92	93	93
W	ppm	6	0.1	0.1	0.0	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
Zn	ppm	6	38.6	35.5	16.9	21.6	22.6	23.2	26.9	30.2	35.5	40.7	45.6	50.5	57.7	61.3	63.5	64.2	64.9

Table 6. Statistics for elements by aqua regia-ICP/MS – Unit NTP: Pemberton Formation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	54	40	34	22	16	23	25	27	29	34	38	43	50	57	73	102	119	139
Al	%	54	2.10	2.05	0.54	0.87	1.49	1.64	1.82	2.00	2.05	2.21	2.32	2.47	2.71	3.06	3.28	3.47	3.67
As	ppm	54	15.4	5.7	25.2	0.1	1.5	2.1	3.4	4.5	5.7	9.2	14.8	18.7	34.9	54.4	87.5	117.6	149.3
Au	ppb	54	0.8	0.4	1.8	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1.2	1.9	3.0	7.8	13.2
Ba	ppm	54	108.0	100.1	55.3	30.7	53.4	61.0	80.3	89.7	100.1	112.3	117.5	135.0	164.0	200.7	240.8	290.9	346.3
B	ppm	54	3	3	3	1	1	1	2	2	3	3	4	4	7	9	10	11	12
Bi	ppm	54	0.33	0.08	1.52	0.02	0.04	0.06	0.06	0.07	0.08	0.10	0.11	0.14	0.19	0.31	1.51	6.10	11.19
Ca	%	54	0.61	0.60	0.31	0.09	0.24	0.38	0.48	0.52	0.60	0.64	0.69	0.82	0.90	1.19	1.39	1.55	1.72
Cd	ppm	54	0.18	0.10	0.40	0.04	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.15	0.19	0.28	1.01	1.91	2.87
Co	ppm	54	14.8	14.8	4.4	4.8	8.7	12.2	12.6	13.8	14.8	15.7	17.0	17.6	20.3	21.6	25.3	25.5	25.6
Cr	ppm	54	21.1	19.3	12.0	2.6	7.9	13.4	15.3	17.7	19.3	20.4	23.4	28.4	33.2	42.9	49.8	58.7	68.4
Cu	ppm	54	19.93	17.41	11.13	4.24	8.39	12.24	13.98	15.60	17.41	20.16	22.43	27.44	30.26	37.36	50.69	57.92	65.57
Fe	%	54	3.72	3.82	0.74	2.17	2.63	2.99	3.46	3.72	3.82	3.95	4.09	4.24	4.50	4.62	5.35	5.47	5.57
Ga	ppm	54	7.3	7.0	1.6	3.5	5.6	6.2	6.3	6.5	7.0	7.4	8.0	8.3	9.3	10.2	10.4	11.1	11.8
Hg	ppb	54	1217	178	3135	20	50	70	85	117	178	261	363	669	2520	6877	14404	15042	15364
K	%	54	0.07	0.07	0.02	0.03	0.05	0.06	0.06	0.06	0.07	0.07	0.08	0.09	0.10	0.10	0.11	0.11	0.12
La	ppm	54	11.4	10.9	4.6	4.0	5.6	6.6	8.1	9.3	10.9	12.7	14.6	15.7	17.3	18.3	19.9	20.7	21.6
Mg	%	54	0.79	0.78	0.40	0.16	0.37	0.49	0.53	0.62	0.78	0.85	0.91	0.97	1.19	1.66	1.84	1.94	2.04
Mn	ppm	54	1437	1113	1092	400	727	793	880	986	1113	1214	1533	1780	2381	3109	3373	5311	7492
Mo	ppm	54	1.22	0.93	1.07	0.26	0.52	0.63	0.68	0.82	0.93	1.17	1.37	1.44	2.01	2.93	3.15	5.12	7.34
Na	%	54	0.048	0.043	0.033	0.009	0.017	0.026	0.032	0.037	0.043	0.046	0.053	0.059	0.076	0.095	0.159	0.176	0.191
Ni	ppm	54	14.8	12.6	12.1	1.6	5.5	8.1	10.5	11.5	12.6	13.5	14.8	17.0	21.0	32.8	61.2	66.6	71.0
Pb	ppm	54	6.60	5.53	2.99	1.72	3.98	4.18	4.49	4.81	5.53	6.34	8.16	9.88	11.12	11.58	12.77	13.72	14.72
P	%	54	0.068	0.068	0.019	0.029	0.046	0.053	0.056	0.060	0.068	0.073	0.079	0.084	0.088	0.096	0.106	0.117	0.130
Sb	ppm	54	0.57	0.33	0.84	0.04	0.15	0.17	0.22	0.29	0.33	0.42	0.50	0.61	1.02	1.66	3.28	4.22	5.19
Sc	ppm	54	3.9	3.9	1.4	0.9	1.9	2.8	3.3	3.6	3.9	4.2	4.5	5.0	6.0	6.1	6.3	6.3	6.3
Se	ppm	54	0.7	0.6	0.6	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.9	1.2	1.5	1.6	2.8	4.1
S	%	54	0.07	0.04	0.07	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.06	0.10	0.16	0.22	0.27	0.28	0.29
Sr	ppm	54	54.3	46.8	32.5	7.1	23.1	29.9	38.0	43.0	46.8	50.3	59.2	70.9	98.5	115.9	122.1	152.4	186.2
Te	ppm	54	0.08	0.02	0.36	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.06	0.67	1.58	2.57
Th	ppm	54	1.3	1.3	0.6	0.3	0.6	0.9	1.0	1.1	1.3	1.5	1.5	1.8	2.2	2.3	2.5	2.6	2.8
Ti	%	54	0.112	0.101	0.073	0.003	0.009	0.059	0.074	0.093	0.101	0.122	0.147	0.162	0.207	0.245	0.283	0.288	0.292
Tl	ppm	54	0.07	0.05	0.06	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.07	0.11	0.13	0.32	0.35	0.38
U	ppm	54	0.4	0.5	0.2	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.7	0.8	0.8	0.9	1.0
V	ppm	54	88	89	37	19	43	58	68	81	89	94	106	112	131	159	169	174	179
W	ppm	54	0.1	0.1	0.0	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
Zn	ppm	54	88.6	80.6	34.3	45.0	54.9	59.7	68.5	75.4	80.6	88.2	99.8	116.7	126.9	137.7	147.3	189.9	237.6

Table 7. Statistics for elements by aqua regia-ICP/MS – Unit KS: Skeena Formation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	31	53	51	19	23	32	33	39	47	51	54	60	66	84	89	96	98	100
Al	%	31	2.03	2.00	0.50	1.37	1.49	1.57	1.73	1.85	2.00	2.06	2.15	2.26	2.50	3.04	3.43	3.47	3.51
As	ppm	31	14.1	10.4	9.8	3.5	6.4	6.7	8.1	9.0	10.4	13.1	17.3	18.5	29.3	30.9	38.7	43.8	49.0
Au	ppb	31	25.5	1.3	133.9	0.2	0.6	0.7	0.8	1.1	1.3	1.5	1.8	2.0	2.4	4.9	302.3	524.8	747.2
Ba	ppm	31	140.0	109.3	94.4	38.0	65.2	94.8	89.2	99.1	109.3	118.2	142.8	157.6	219.9	363.7	425.0	431.1	437.2
B	ppm	31	4	4	2	1	2	3	3	3	4	4	5	5	6	7	9	10	11
Bi	ppm	31	0.21	0.11	0.29	0.04	0.07	0.07	0.09	0.10	0.11	0.13	0.13	0.16	0.56	0.92	1.11	1.16	1.20
Ca	%	31	0.47	0.43	0.16	0.29	0.33	0.36	0.40	0.42	0.43	0.47	0.49	0.53	0.63	0.68	0.88	1.01	1.14
Cd	ppm	31	0.11	0.11	0.04	0.05	0.07	0.10	0.09	0.10	0.11	0.11	0.13	0.13	0.16	0.17	0.21	0.23	0.26
Co	ppm	31	13.9	13.4	3.4	8.1	10.3	10.4	12.2	13.1	13.4	13.6	15.3	16.9	17.0	19.4	22.1	22.7	23.3
Cr	ppm	31	23.7	23.3	7.7	14.1	15.9	16.3	19.2	20.8	23.3	24.6	26.8	28.3	31.5	33.5	41.7	46.8	52.0
Cu	ppm	31	21.41	19.63	9.07	8.53	12.24	12.60	17.20	18.40	19.63	21.88	24.93	27.55	29.47	34.87	44.27	48.34	52.42
Fe	%	31	3.37	3.26	0.64	2.48	2.62	2.79	2.99	3.11	3.26	3.42	3.64	3.84	4.00	4.50	4.91	5.06	5.20
Ga	ppm	31	6.3	6.2	1.0	4.5	5.4	5.5	5.9	6.1	6.2	6.4	6.6	6.8	7.0	8.0	9.1	9.3	9.4
Hg	ppb	31	363	78	849	45	48	67	67	73	78	91	154	312	730	1414	2718	3620	4523
K	%	31	0.07	0.07	0.02	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.12	0.14	0.16
La	ppm	31	8.7	8.6	2.5	3.6	5.8	6.9	7.5	8.2	8.6	9.0	9.4	10.2	12.4	12.6	13.7	14.4	15.1
Mg	%	31	0.74	0.73	0.21	0.49	0.55	0.55	0.61	0.62	0.73	0.76	0.82	0.86	0.92	1.12	1.32	1.37	1.43
Mn	ppm	31	1006	890	472	521	565	706	684	821	890	985	1129	1308	1452	1607	2134	2463	2793
Mo	ppm	31	0.72	0.67	0.22	0.39	0.50	0.56	0.60	0.63	0.67	0.71	0.77	0.90	1.04	1.15	1.25	1.25	1.25
Na	%	31	0.026	0.026	0.015	0.011	0.014	0.014	0.016	0.018	0.026	0.028	0.032	0.035	0.037	0.038	0.059	0.075	0.091
Ni	ppm	31	16.2	15.7	4.8	8.7	11.1	11.5	13.4	14.2	15.7	16.5	18.1	20.5	23.0	24.6	25.6	26.0	26.4
Pb	ppm	31	8.21	8.30	2.49	3.93	5.22	5.98	6.53	6.99	8.30	8.85	9.61	9.87	11.36	11.76	13.21	14.16	15.11
P	%	31	0.057	0.056	0.011	0.036	0.044	0.045	0.051	0.053	0.056	0.058	0.063	0.067	0.069	0.074	0.079	0.080	0.080
Sb	ppm	31	0.73	0.44	0.60	0.18	0.31	0.31	0.37	0.41	0.44	0.51	0.86	1.32	1.57	1.87	2.31	2.43	2.56
Sc	ppm	31	3.6	3.5	0.8	2.1	2.9	3.0	3.1	3.4	3.5	3.7	3.9	4.3	4.7	5.0	5.2	5.3	5.4
Se	ppm	31	0.5	0.4	0.3	0.1	0.2	0.2	0.3	0.4	0.4	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2
S	%	31	0.05	0.03	0.08	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.05	0.07	0.08	0.24	0.35	0.47
Sr	ppm	31	40.2	37.3	18.9	18.1	25.7	27.8	27.5	33.9	37.3	39.2	44.4	48.1	55.7	72.0	96.1	103.1	110.1
Te	ppm	31	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.07	0.07	0.10	0.12	0.13	0.14
Th	ppm	31	1.8	1.5	0.8	0.6	0.9	1.2	1.3	1.3	1.5	1.6	2.3	2.5	2.9	3.0	3.2	3.3	3.4
Ti	%	31	0.050	0.047	0.033	0.007	0.013	0.019	0.025	0.036	0.047	0.061	0.067	0.074	0.093	0.111	0.113	0.115	0.117
Tl	ppm	31	0.06	0.06	0.02	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09	0.10	0.10	0.11
U	ppm	31	0.4	0.4	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.8
V	ppm	31	71	66	21	50	57	58	59	60	66	69	73	75	86	120	133	137	140
W	ppm	31	0.1	0.1	0.0	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
Zn	ppm	31	75.6	72.9	11.6	56.5	63.2	65.7	71.1	71.8	72.9	75.8	78.4	83.8	91.3	93.1	100.7	105.2	109.8

Table 8. Statistics for elements by aqua regia-ICP/MS – Unit uKH: Honna Formation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	15	72	59	56	32	38	40	46	53	59	61	65	88	97	146	209	230	251
Al	%	15	2.17	1.96	0.76	1.69	1.78	1.83	1.85	1.90	1.96	2.15	2.29	2.44	2.71	2.99	3.28	3.37	3.47
As	ppm	15	10.5	9.2	4.1	5.5	6.8	7.4	8.3	9.1	9.2	9.7	10.0	10.7	13.6	18.6	24.6	26.5	28.5
Au	ppb	15	2.3	1.1	3.4	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.4	2.0	2.8	7.5	13.8	16.0	18.1
Ba	ppm	15	134.4	125.8	37.1	74.0	94.0	106.8	113.5	123.8	125.8	141.8	146.5	165.5	180.3	194.4	201.3	203.6	205.9
B	ppm	15	6	4	6	2	2	3	3	4	4	4	4	5	13	17	19	20	21
Bi	ppm	15	0.09	0.08	0.04	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.13	0.15	0.19	0.20	0.21
Ca	%	15	0.66	0.59	0.41	0.43	0.43	0.46	0.48	0.54	0.59	0.64	0.70	0.74	0.91	1.12	1.32	1.38	1.45
Cd	ppm	15	0.16	0.13	0.28	0.10	0.10	0.11	0.11	0.13	0.13	0.13	0.15	0.17	0.27	0.32	0.35	0.36	0.37
Co	ppm	15	13.8	12.8	5.9	9.9	10.5	11.2	11.8	12.0	12.8	13.2	14.1	17.9	19.2	20.1	20.1	20.2	20.2
Cr	ppm	15	22.6	21.9	19.2	16.2	17.9	20.1	20.6	21.2	21.9	23.4	24.3	24.7	27.1	29.1	30.5	30.9	31.4
Cu	ppm	15	22.33	20.74	48.90	14.12	14.56	15.03	16.61	18.03	20.74	23.11	27.35	28.75	30.05	33.58	37.60	38.94	40.28
Fe	%	15	3.90	3.85	0.63	3.11	3.36	3.64	3.67	3.73	3.85	3.96	4.08	4.13	4.51	4.79	4.93	4.98	5.03
Ga	ppm	15	6.6	6.6	2.3	5.6	6.1	6.3	6.3	6.4	6.6	6.9	7.1	7.1	7.3	7.3	7.3	7.3	7.3
Hg	ppb	15	364	107	5085	59	70	78	86	103	107	137	206	250	293	1243	2571	3014	3457
K	%	15	0.07	0.07	0.01	0.05	0.05	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09
La	ppm	15	9.6	9.9	2.1	6.2	7.0	7.6	8.8	9.5	9.9	10.2	10.6	10.8	12.3	12.9	12.9	12.9	12.9
Mg	%	15	0.72	0.69	0.39	0.53	0.59	0.60	0.64	0.67	0.69	0.73	0.76	0.80	0.92	0.98	1.00	1.00	1.01
Mn	ppm	15	1155	684	971	559	596	623	648	667	684	753	888	953	1770	3303	4696	5161	5625
Mo	ppm	15	0.96	0.74	0.91	0.51	0.53	0.58	0.71	0.71	0.74	0.88	1.09	1.24	1.45	1.80	2.17	2.30	2.42
Na	%	15	0.020	0.017	0.013	0.012	0.014	0.015	0.016	0.017	0.017	0.018	0.019	0.019	0.028	0.039	0.047	0.049	0.052
Ni	ppm	15	16.1	13.5	19.1	11.4	11.8	12.5	12.9	13.1	13.5	15.2	16.5	19.2	20.9	25.2	30.5	32.2	34.0
Pb	ppm	15	7.16	6.75	2.30	4.52	5.53	5.70	6.00	6.35	6.75	6.83	7.09	7.81	8.99	10.62	12.85	13.60	14.34
P	%	15	0.064	0.065	0.012	0.049	0.051	0.054	0.055	0.060	0.065	0.067	0.071	0.073	0.078	0.080	0.080	0.080	0.080
Sb	ppm	15	0.47	0.49	0.20	0.21	0.27	0.31	0.34	0.40	0.49	0.50	0.52	0.56	0.74	0.77	0.78	0.79	0.79
Sc	ppm	15	4.5	4.1	1.1	3.2	3.3	3.6	3.7	4.0	4.1	4.3	5.0	5.7	5.9	6.2	6.5	6.7	6.8
Se	ppm	15	0.5	0.4	0.5	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.9	1.1	1.3	1.3	1.3	1.3
S	%	15	0.08	0.08	0.04	0.03	0.03	0.05	0.05	0.06	0.08	0.08	0.10	0.12	0.14	0.15	0.15	0.16	0.16
Sr	ppm	15	52.2	52.3	20.7	23.8	30.3	35.3	37.8	41.4	52.3	53.4	57.3	60.7	66.3	86.7	114.2	123.3	132.5
Te	ppm	15	0.04	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.07	0.08	0.08	0.09	0.09
Th	ppm	15	1.7	1.8	0.7	0.6	0.6	0.6	1.2	1.5	1.8	2.0	2.2	2.3	2.6	2.8	3.0	3.0	3.1
Ti	%	15	0.064	0.057	0.179	0.001	0.014	0.022	0.033	0.054	0.057	0.076	0.089	0.101	0.115	0.125	0.132	0.134	0.136
Tl	ppm	15	0.07	0.06	0.06	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.11	0.14	0.16	0.16	0.17
U	ppm	15	0.4	0.5	0.2	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.7
V	ppm	15	87	81	56	55	65	70	71	74	81	85	90	98	116	130	148	153	159
W	ppm	15	0.1	0.1	0.0	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
Zn	ppm	15	81.6	80.5	23.7	65.1	67.0	69.7	75.9	78.2	80.5	81.6	89.0	92.6	94.5	98.8	103.6	105.2	106.8

Table 9. Statistics for elements by aqua regia-ICP/MS – Unit lKL: Longarm Formation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	2	194	194	185	63	89	324	141	167	194	220	246	272	298	311	319	321	324
Al	%	2	2.59	2.59	5.58	2.50	2.52	2.93	2.55	2.57	2.59	2.61	2.63	2.64	2.66	2.67	2.68	2.68	2.68
As	ppm	2	13.7	13.7	12.5	5.4	7.1	25.8	10.4	12.0	13.7	15.3	17.0	18.6	20.3	21.1	21.6	21.7	21.9
Au	ppb	2	1.0	1.0	220.4	0.2	0.4	3.9	0.7	0.8	1.0	1.1	1.3	1.4	1.6	1.6	1.7	1.7	1.7
Ba	ppm	2	90.2	90.2	121.9	56.8	63.5	315.7	76.8	83.5	90.2	96.8	103.5	110.2	116.8	120.2	122.2	122.8	123.5
B	ppm	2	2	2	6	1	1	6	1	1	2	2	2	2	2	2	2	2	2
Bi	ppm	2	0.10	0.10	5.90	0.09	0.09	0.75	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Ca	%	2	0.67	0.67	5.87	0.61	0.62	0.66	0.65	0.66	0.67	0.68	0.69	0.71	0.72	0.72	0.73	0.73	0.73
Cd	ppm	2	0.13	0.13	5.94	0.08	0.09	0.15	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.18	0.18	0.18
Co	ppm	2	16.3	16.3	5.3	15.6	15.7	18.9	16.0	16.1	16.3	16.4	16.5	16.6	16.8	16.8	16.9	16.9	16.9
Cr	ppm	2	26.0	26.0	9.7	24.5	24.8	31.7	25.4	25.7	26.0	26.2	26.5	26.8	27.1	27.3	27.3	27.4	27.4
Cu	ppm	2	26.96	26.96	10.88	26.65	26.71	33.35	26.84	26.90	26.96	27.02	27.08	27.15	27.21	27.24	27.26	27.26	27.27
Fe	%	2	4.19	4.19	5.36	4.04	4.07	4.40	4.13	4.16	4.19	4.22	4.25	4.28	4.31	4.33	4.33	4.34	4.34
Ga	ppm	2	7.0	7.0	5.0	6.6	6.7	7.7	6.8	6.9	7.0	7.0	7.1	7.2	7.2	7.3	7.3	7.3	7.3
Hg	ppb	2	43	43	1164	40	41	1139	42	42	43	44	44	45	45	46	46	46	46
K	%	2	0.09	0.09	5.95	0.08	0.08	0.10	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10
La	ppm	2	8.0	8.0	5.3	7.0	7.2	11.8	7.6	7.8	8.0	8.1	8.3	8.5	8.7	8.8	8.9	8.9	8.9
Mg	%	2	0.93	0.93	5.81	0.74	0.78	1.04	0.85	0.89	0.93	0.96	1.00	1.04	1.07	1.09	1.10	1.11	1.11
Mn	ppm	2	801	801	622	767	774	1439	787	794	801	808	815	821	828	832	834	834	835
Mo	ppm	2	1.24	1.24	5.81	0.95	1.01	1.11	1.12	1.18	1.24	1.30	1.36	1.41	1.47	1.50	1.52	1.52	1.53
Na	%	2	0.053	0.053	5.959	0.030	0.035	0.036	0.044	0.048	0.053	0.057	0.062	0.066	0.071	0.073	0.074	0.075	0.075
Ni	ppm	2	15.8	15.8	6.2	13.5	14.0	22.4	14.9	15.3	15.8	16.3	16.7	17.2	17.6	17.9	18.0	18.1	18.1
Pb	ppm	2	6.56	6.56	5.22	5.69	5.86	10.55	6.21	6.39	6.56	6.73	6.91	7.08	7.26	7.34	7.40	7.41	7.43
P	%	2	0.066	0.066	5.955	0.050	0.053	0.069	0.059	0.062	0.066	0.069	0.072	0.075	0.078	0.079	0.080	0.081	0.081
Sb	ppm	2	0.51	0.51	5.82	0.20	0.26	1.53	0.38	0.44	0.51	0.57	0.63	0.69	0.75	0.78	0.80	0.80	0.81
Sc	ppm	2	5.6	5.6	5.4	4.5	4.7	5.2	5.1	5.3	5.6	5.8	6.0	6.2	6.4	6.5	6.6	6.6	6.6
Se	ppm	2	0.7	0.7	5.9	0.5	0.5	0.9	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9
S	%	2	0.09	0.09	5.95	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Sr	ppm	2	63.2	63.2	25.5	52.1	54.3	73.8	58.7	60.9	63.2	65.4	67.6	69.8	72.0	73.1	73.8	74.0	74.2
Te	ppm	2	0.05	0.05	5.95	0.05	0.05	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Th	ppm	2	1.0	1.0	5.7	0.8	0.8	2.6	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2
Ti	%	2	0.045	0.045	5.956	0.020	0.025	0.092	0.035	0.040	0.045	0.049	0.054	0.059	0.064	0.067	0.068	0.069	0.069
Tl	ppm	2	0.07	0.07	5.95	0.06	0.06	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
U	ppm	2	0.3	0.3	5.9	0.2	0.2	0.6	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
V	ppm	2	80	80	29	74	75	113	77	78	80	81	82	83	84	84	85	85	85
W	ppm	2	0.1	0.1	5.9	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
Zn	ppm	2	78.9	78.9	20.0	75.5	76.2	89.5	77.5	78.2	78.9	79.5	80.2	80.9	81.5	81.9	82.1	82.1	82.2

Table 10. Statistics for elements by aqua regia-ICP/MS – Unit JB: Bonanza Formation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	67	65	50	55	17	27	31	38	45	50	63	72	82	110	142	156	246	418
Al	%	67	2.16	2.09	0.42	1.38	1.72	1.95	1.97	2.03	2.09	2.16	2.23	2.38	2.85	2.96	3.06	3.16	3.29
As	ppm	67	13.5	8.0	17.5	2.5	4.7	5.6	6.2	6.9	8.0	9.3	10.6	14.2	26.0	42.3	49.3	76.8	126.1
Au	ppb	67	4.0	0.6	17.0	0.2	0.2	0.3	0.5	0.5	0.6	0.7	0.9	1.2	1.9	6.6	59.8	92.8	114.7
Ba	ppm	67	147.9	135.6	89.9	29.9	51.7	97.5	100.2	126.3	135.6	142.1	155.8	184.2	273.5	335.3	375.5	422.4	492.0
B	ppm	67	5	3	4	1	2	2	3	3	3	4	4	6	9	13	15	17	19
Bi	ppm	67	0.11	0.07	0.21	0.03	0.04	0.04	0.05	0.06	0.07	0.07	0.08	0.11	0.15	0.27	0.59	1.01	1.59
Ca	%	67	0.69	0.58	0.36	0.17	0.38	0.45	0.49	0.55	0.58	0.63	0.67	0.98	1.27	1.43	1.64	1.75	1.79
Cd	ppm	67	0.30	0.18	0.33	0.04	0.06	0.08	0.11	0.13	0.18	0.22	0.32	0.47	0.65	0.85	0.99	1.40	2.11
Co	ppm	67	14.4	13.8	4.2	7.8	9.8	11.3	12.0	12.8	13.8	14.7	15.1	16.6	20.2	23.7	26.4	26.6	26.7
Cr	ppm	67	23.4	20.9	12.6	9.8	13.7	16.4	17.4	19.1	20.9	22.0	23.6	26.9	36.7	44.9	49.8	66.5	95.0
Cu	ppm	67	24.45	20.34	16.19	6.68	10.28	12.55	14.82	17.82	20.34	23.03	25.85	30.49	47.53	60.62	74.06	76.46	78.14
Fe	%	67	3.83	3.85	0.82	2.23	2.64	3.35	3.44	3.62	3.85	4.03	4.21	4.49	4.93	5.09	5.64	5.92	6.10
Ga	ppm	67	6.5	6.1	1.3	3.8	5.3	5.6	5.8	6.0	6.1	6.3	6.7	7.6	8.5	8.7	10.1	10.2	10.3
Hg	ppb	67	444	94	1191	39	48	53	72	80	94	129	163	271	676	1470	5402	6170	6741
K	%	67	0.07	0.07	0.02	0.02	0.04	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.12
La	ppm	67	7.2	7.0	2.2	2.9	4.9	5.5	5.8	6.8	7.0	7.5	8.0	9.0	10.0	10.5	12.7	13.3	14.4
Mg	%	67	0.77	0.71	0.27	0.42	0.53	0.61	0.63	0.67	0.71	0.74	0.84	0.93	1.00	1.25	1.62	1.82	1.95
Mn	ppm	67	1224	964	909	531	620	658	761	850	964	1131	1371	1521	1941	2217	3901	5227	6473
Mo	ppm	67	1.51	1.07	1.44	0.33	0.54	0.61	0.71	0.84	1.07	1.34	1.59	2.12	2.74	3.91	4.28	6.34	10.08
Na	%	67	0.023	0.021	0.009	0.009	0.014	0.016	0.018	0.019	0.021	0.025	0.026	0.029	0.034	0.038	0.045	0.048	0.049
Ni	ppm	67	18.4	13.4	14.7	6.3	9.4	11.2	11.4	12.5	13.4	14.9	16.0	20.5	37.3	41.5	67.2	82.1	90.1
Pb	ppm	67	5.86	5.47	4.59	2.38	3.58	4.09	4.49	4.89	5.47	5.89	6.08	6.49	7.24	7.74	8.98	20.07	41.07
P	%	67	0.061	0.059	0.017	0.030	0.042	0.048	0.051	0.053	0.059	0.061	0.068	0.079	0.083	0.095	0.099	0.103	0.109
Sb	ppm	67	0.55	0.39	0.47	0.15	0.20	0.22	0.30	0.34	0.39	0.44	0.50	0.74	1.27	1.39	1.75	2.18	2.78
Sc	ppm	67	4.8	4.8	1.4	1.6	3.2	3.9	4.1	4.4	4.8	4.9	5.4	6.1	6.7	6.9	7.6	7.9	8.2
Se	ppm	67	0.8	0.6	0.5	0.1	0.3	0.4	0.5	0.5	0.6	0.8	0.9	1.3	1.5	1.8	2.0	2.2	2.7
S	%	67	0.12	0.06	0.27	0.01	0.03	0.04	0.04	0.05	0.06	0.08	0.10	0.14	0.19	0.22	0.67	1.26	2.08
Sr	ppm	67	60.2	53.1	38.6	10.8	22.4	29.4	32.2	43.6	53.1	57.9	69.2	90.5	115.5	124.7	164.1	172.1	181.2
Te	ppm	67	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.05	0.05	0.07	0.08	0.08	0.09
Th	ppm	67	0.9	0.8	0.5	0.2	0.4	0.6	0.6	0.7	0.8	1.0	1.1	1.2	1.4	2.0	2.2	2.3	2.6
Ti	%	67	0.078	0.054	0.080	0.001	0.008	0.015	0.029	0.036	0.054	0.066	0.096	0.130	0.160	0.220	0.326	0.377	0.413
Tl	ppm	67	0.11	0.07	0.12	0.02	0.04	0.04	0.05	0.06	0.07	0.09	0.11	0.15	0.22	0.30	0.48	0.59	0.77
U	ppm	67	0.4	0.3	0.4	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.5	0.6	1.7	2.0	2.3
V	ppm	67	96	88	39	38	57	71	73	78	88	96	101	121	154	171	190	197	207
W	ppm	67	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Zn	ppm	67	87.7	81.5	29.0	38.7	57.8	70.3	71.7	75.1	81.5	88.1	101.1	108.3	117.2	127.8	130.4	167.4	238.5

Table 11. Statistics for elements by aqua regia-ICP/MS – Unit TrK: Karmutsen Fomation

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	7	76	41	142	31	32	32	37	39	41	51	98	125	147	156	162	164	166
Al	%	7	3.03	3.10	5.50	1.84	2.31	2.63	2.80	2.94	3.10	2.16	3.43	3.54	3.68	3.76	3.81	3.82	3.84
As	ppm	7	8.1	9.2	51.5	3.3	4.8	5.8	8.1	8.9	9.2	10.4	9.5	9.7	10.0	10.2	10.3	10.4	10.4
Au	ppb	7	1.5	0.8	916.4	0.2	0.4	0.5	0.7	0.7	0.8	0.9	1.9	2.6	3.2	3.5	3.6	3.7	3.7
Ba	ppm	7	79.5	70.6	54.5	50.1	56.6	60.9	63.3	66.6	70.6	117.1	79.8	104.2	118.4	122.8	125.5	126.4	127.3
B	ppm	7	7	6	6	1	3	6	6	6	6	4	7	9	13	16	18	18	19
Bi	ppm	7	0.10	0.07	5.80	0.05	0.05	0.05	0.07	0.07	0.07	0.10	0.12	0.14	0.16	0.16	0.17	0.17	0.17
Ca	%	7	1.18	1.25	5.63	0.47	0.84	1.21	1.18	1.23	1.25	0.61	1.35	1.40	1.44	1.46	1.46	1.47	1.47
Cd	ppm	7	0.28	0.08	5.68	0.03	0.05	0.07	0.07	0.07	0.08	0.13	0.37	0.41	0.63	0.79	0.88	0.91	0.94
Co	ppm	7	20.7	20.6	7.1	16.8	16.9	18.2	17.9	19.2	20.6	15.0	21.3	23.3	25.6	26.8	27.6	27.8	28.1
Cr	ppm	7	51.7	53.4	15.1	30.1	37.3	49.6	48.1	51.1	53.4	23.4	59.1	59.9	63.3	65.6	67.1	67.5	68.0
Cu	ppm	7	56.83	37.72	20.39	26.40	27.16	27.66	27.68	31.70	37.72	21.90	48.14	64.35	108.20	137.04	154.34	160.11	165.88
Fe	%	7	3.99	4.00	5.40	3.20	3.26	3.30	3.46	3.70	4.00	3.98	4.24	4.43	4.79	5.02	5.15	5.20	5.24
Ga	ppm	7	9.9	10.5	5.4	6.7	8.0	8.8	8.9	9.5	10.5	6.8	10.8	11.1	11.6	12.0	12.2	12.2	12.3
Hg	ppb	7	4629	612	5128	69	75	145	132	332	612	154	8661	9859	11347	12163	12653	12817	12980
K	%	7	0.06	0.06	5.68	0.02	0.03	0.04	0.06	0.06	0.06	0.08	0.07	0.08	0.08	0.09	0.09	0.09	0.09
La	ppm	7	6.2	6.5	6.6	4.2	4.6	4.9	5.5	6.0	6.5	8.9	6.9	7.0	7.5	7.9	8.1	8.1	8.2
Mg	%	7	1.36	1.34	5.61	1.11	1.21	1.28	1.28	1.30	1.34	0.82	1.46	1.51	1.54	1.56	1.57	1.58	1.58
Mn	ppm	7	920	823	1039	710	754	784	789	803	823	1111	959	1072	1186	1243	1277	1289	1300
Mo	ppm	7	0.93	0.59	5.63	0.28	0.28	0.28	0.39	0.49	0.59	1.15	0.72	0.86	1.88	2.61	3.05	3.19	3.34
Na	%	7	0.030	0.036	5.683	0.008	0.012	0.014	0.023	0.029	0.036	0.034	0.040	0.041	0.043	0.043	0.044	0.044	0.044
Ni	ppm	7	32.3	22.8	13.7	17.1	20.2	22.8	22.7	22.8	22.8	15.2	30.1	42.8	55.4	61.7	65.5	66.7	68.0
Pb	ppm	7	7.45	7.96	5.69	2.75	3.97	4.78	6.82	7.58	7.96	6.56	9.02	9.37	10.06	10.49	10.75	10.83	10.92
P	%	7	0.046	0.044	5.681	0.031	0.033	0.035	0.040	0.042	0.044	0.066	0.048	0.049	0.058	0.065	0.068	0.070	0.071
Sb	ppm	7	0.44	0.46	5.68	0.21	0.22	0.23	0.29	0.37	0.46	0.48	0.48	0.51	0.66	0.77	0.83	0.85	0.87
Sc	ppm	7	5.6	6.0	5.5	4.6	4.6	4.6	5.2	5.6	6.0	4.5	6.1	6.2	6.2	6.2	6.2	6.2	6.2
Se	ppm	7	0.7	0.6	5.6	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	1.1	1.4	1.5	1.6	1.6
S	%	7	0.04	0.03	5.68	0.03	0.03	0.03	0.03	0.03	0.03	0.06	0.05	0.06	0.06	0.07	0.07	0.07	0.07
Sr	ppm	7	33.6	32.0	28.0	26.4	27.8	28.8	30.9	31.6	32.0	50.1	34.6	37.1	40.9	43.0	44.3	44.8	45.2
Te	ppm	7	0.02	0.02	5.68	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Th	ppm	7	1.0	1.1	5.6	0.3	0.4	0.4	0.9	1.0	1.1	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.6
Ti	%	7	0.223	0.155	5.674	0.122	0.139	0.150	0.151	0.153	0.155	0.088	0.184	0.197	0.362	0.482	0.554	0.578	0.602
Tl	ppm	7	0.06	0.03	5.68	0.02	0.03	0.03	0.03	0.03	0.03	0.07	0.04	0.04	0.12	0.17	0.21	0.22	0.23
U	ppm	7	0.6	0.5	5.6	0.2	0.3	0.4	0.4	0.4	0.5	0.4	0.7	0.9	0.9	0.9	0.9	0.9	0.9
V	ppm	7	110	68	43	64	65	66	67	67	68	90	126	155	190	208	220	223	227
W	ppm	7	0.1	0.1	5.7	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
Zn	ppm	7	79.9	58.7	39.2	56.2	57.0	57.6	57.7	58.1	58.7	81.7	89.0	108.7	121.6	126.4	129.2	130.2	131.1

Table 12. Statistics for elements by aqua regia-ICP/MS – Unit OTg: Undivided Plutonic Rocks

	Units	N	Mean	Median	SD	Min	10%ile	20%ile	30%ile	40%ile	50%ile	60%ile	70%ile	80%ile	90%ile	95%ile	98%ile	99%ile	Max
Ag	ppb	12	31	32	8	17	21	27	29	32	32	33	33	35	40	43	45	45	46
Al	%	12	1.75	1.74	0.36	0.94	1.50	1.58	1.62	1.70	1.74	1.79	1.85	2.07	2.19	2.22	2.24	2.24	2.25
As	ppm	12	31.9	5.5	69.6	2.3	3.7	4.2	4.4	5.1	5.5	6.4	7.8	20.5	65.5	148.5	206.1	225.2	244.4
Au	ppb	12	1.3	0.5	2.4	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.8	2.0	5.2	7.4	8.2	8.9
Ba	ppm	12	78.4	73.7	38.5	23.2	47.4	66.2	67.2	70.4	73.7	76.7	80.8	84.8	106.3	140.9	164.5	172.4	180.3
B	ppm	12	2	2	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3
Bi	ppm	12	0.35	0.12	0.81	0.06	0.07	0.08	0.09	0.10	0.12	0.12	0.12	0.16	0.22	1.44	2.33	2.62	2.92
Ca	%	12	0.45	0.45	0.08	0.36	0.38	0.40	0.41	0.43	0.45	0.45	0.46	0.48	0.49	0.58	0.64	0.66	0.68
Cd	ppm	12	0.09	0.08	0.01	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.11	0.11	0.11
Co	ppm	12	12.0	12.2	2.4	7.2	9.2	11.4	11.5	11.7	12.2	13.2	13.9	14.1	14.4	14.5	14.6	14.7	14.7
Cr	ppm	12	21.9	20.0	4.9	17.3	18.0	18.3	18.5	19.2	20.0	20.3	23.9	25.6	27.1	30.0	32.0	32.6	33.3
Cu	ppm	12	15.99	15.66	6.95	7.18	9.34	12.23	12.60	13.36	15.66	17.40	17.62	17.97	18.85	25.97	31.12	32.84	34.56
Fe	%	12	3.83	3.87	0.38	3.14	3.37	3.42	3.66	3.77	3.87	3.99	4.09	4.13	4.24	4.30	4.34	4.36	4.37
Ga	ppm	12	7.2	7.1	1.7	4.5	5.0	6.1	6.2	6.5	7.1	7.6	7.7	9.1	9.5	9.5	9.6	9.6	9.6
Hg	ppb	12	343	87	769	13	34	57	58	66	87	102	115	254	457	1499	2250	2500	2750
K	%	12	0.07	0.07	0.02	0.04	0.04	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.09	0.10	0.11	0.12	0.12
La	ppm	12	10.5	10.3	4.5	4.9	5.1	6.9	7.8	10.1	10.3	11.5	12.7	13.8	15.1	17.0	18.3	18.8	19.2
Mg	%	12	0.73	0.75	0.14	0.53	0.56	0.64	0.64	0.68	0.75	0.77	0.77	0.78	0.87	0.95	1.00	1.02	1.04
Mn	ppm	12	975	921	524	277	379	691	744	877	921	1051	1131	1234	1599	1834	1978	2026	2074
Mo	ppm	12	1.16	1.15	0.18	0.77	0.99	1.03	1.08	1.10	1.15	1.23	1.30	1.32	1.37	1.38	1.38	1.38	1.38
Na	%	12	0.033	0.033	0.012	0.017	0.018	0.027	0.028	0.031	0.033	0.034	0.035	0.037	0.050	0.052	0.053	0.054	0.054
Ni	ppm	12	12.3	11.4	3.0	8.9	8.9	10.3	10.4	10.8	11.4	12.8	14.3	15.1	16.5	16.8	16.9	17.0	17.0
Pb	ppm	12	6.43	6.55	0.98	4.65	5.17	5.73	5.92	6.43	6.55	6.77	7.02	7.29	7.55	7.63	7.67	7.69	7.70
P	%	12	0.061	0.059	0.009	0.050	0.052	0.053	0.054	0.056	0.059	0.061	0.068	0.072	0.073	0.073	0.073	0.073	0.073
Sb	ppm	12	0.67	0.37	0.76	0.24	0.25	0.29	0.32	0.35	0.37	0.39	0.42	0.58	1.66	2.19	2.50	2.61	2.71
Sc	ppm	12	3.2	3.3	1.0	1.4	2.2	2.5	2.7	3.1	3.3	3.4	3.5	3.5	3.8	4.6	5.1	5.3	5.5
Se	ppm	12	0.6	0.6	0.3	0.1	0.1	0.3	0.4	0.4	0.6	0.6	0.7	0.9	0.9	1.1	1.2	1.3	1.3
S	%	12	0.07	0.03	0.08	0.01	0.02	0.03	0.03	0.03	0.03	0.04	0.05	0.06	0.20	0.24	0.25	0.26	0.26
Sr	ppm	12	35.0	31.1	11.5	19.2	24.9	26.9	27.1	27.8	31.1	35.6	43.9	47.1	50.0	51.3	52.0	52.3	52.5
Te	ppm	12	0.06	0.02	0.13	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.08	0.26	0.38	0.43	0.47
Th	ppm	12	1.4	1.4	0.5	0.6	0.8	1.0	1.1	1.3	1.4	1.4	1.8	2.0	2.0	2.1	2.2	2.3	2.3
Ti	%	12	0.089	0.087	0.050	0.010	0.020	0.063	0.070	0.076	0.087	0.095	0.103	0.119	0.141	0.164	0.180	0.185	0.190
Tl	ppm	12	0.05	0.05	0.01	0.02	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.07	0.07	0.07	0.07	0.07
U	ppm	12	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.9	0.9	1.0	1.0	1.0
V	ppm	12	105	105	23	69	77	92	95	98	105	111	112	118	131	141	147	149	151
W	ppm	12	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.4	0.4
Zn	ppm	12	81.1	79.6	30.1	34.5	47.7	71.8	72.1	73.5	79.6	87.3	92.3	98.9	108.2	125.4	137.3	141.3	145.3

Element statistics and Symbol Plots

Sample locations are shown on Map 1. Bedrock geology and MINFILE mineral occurrences are shown on Map 2. Statistics for elements determined by aqua regia-ICP/MS for all of the Charlotte Islands RGS samples are listed in Table 4. Also shown for comparison are statistics for elements by aqua regia-AAS, Au by instrumental neutron activation, F in stream water, SO_4 in stream water, and stream water pH. Frequency histograms for Ag (Fig. 2) and Hg (Fig 3) illustrate that the distributions typically comprise multiple populations. Element statistics based on the bedrock geology underlying the sample site are listed in Tables 5 to 12.

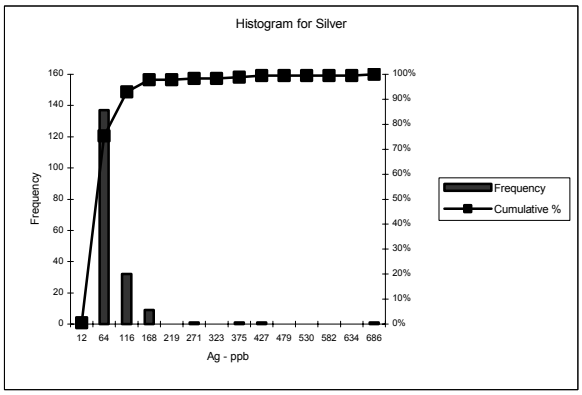


Figure 2. Silver histogram

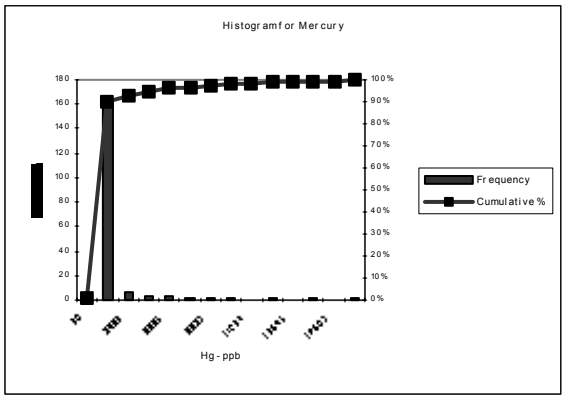


Figure 3. Mercury Histogram

Multi-element geochemical associations

Symbol and drainage basin plots showing the distribution of elements by ICP/MS, shown in Maps 3 to 39, are based on the values at the 90th, 95th and 98th percentiles listed in Table 3. Stream sediment multi-element geochemical association may be used to indicate the presence of different types of mineralization within a watershed.
Potential pathfinder element signatures are Ag-Hg-Sb for Au-Ag vein-type epithermal deposits, Cu-Mo-Au for porphyry deposits and Ag-Cu-Pb-Zn for VMS deposits.

Queen Charlotte RGS samples with different signature pathfinder elements exceeding the 80th percentile are shown as highlighted stream drainage basins in Maps 40, 41 and 42. Different deposit types in the survey area based on the MINFILE mineral occurrences classification are also shown on the maps. Sample sites corresponding to the highlighted drainage basins are listed in Table 13, 14 and 15. There are nine sites in the northern, southern and eastern part of the area with an Ag-Hg-Sb (epithermal gold) signature. Three sites have a VMS signature and one site has a porphyry Cu-Mo-Au signature. There is a cluster of drainage basins where all three of the signatures are represented near the Cimadoro Au-Ag-Zn-Cu-Ba-Pb VMS occurrence (MINFILE 103F/052).

References

Jackaman, W., Payie, G. and Wojdak, G. (2000): Stream sediment and water geochemistry of parts of the Queen Charlotte Islands (HTS 103F/1,7,8,9,10: 103G4/5); *BC Ministry of Energy and Mines* Open Files 200-14

Table 13. Samples with epithermal Au (Ag-Hg-Sb) signature

NTS		103F08	103F08	103F08	103F08	103F01	103F01	103F01	103F01	103G05
Sample		99-3188	99-3106	99-3014	99-3103	99-3136	99-3139	99-3135	99-3156	99-3110
ZONE		8	8	8	8	8	8	8	8	9
UTME83		691293	678935	671625	679141	687024	688760	684041	694670	303000
UTMN83		5931701	5925137	5920711	5922815	5889105	5888187	5886635	5885469	5912445
Ag	ppb	686	71	102	93	116	154	166	79	96
Al	%	1.86	1.81	2.43	2.16	2.95	1.89	2.84	1.76	1.95
As	ppm	6.90	44.90	24.30	12.70	6.90	10.20	10.40	27.20	8.80
Au	ppb	4247.6	0.6	3.1	0.3	81.5	1.3	2.9	0.7	114.7
Au-INAA	ppb	52	-2	66	-2	48	252	28	3	184
Ba	ppm	83	131	163	492	83	129	71	90	89
Bi	ppm	0.03	0.11	0.05	0.08	0.05	0.05	0.05	0.08	0.05
Ca	%	0.32	0.42	0.59	0.66	1.44	0.81	1.42	1.40	0.58
Cd	ppm	0.10	0.34	0.05	0.63	0.66	1.03	0.35	0.25	0.08
Co	ppm	15.50	12.40	12.50	14.80	21.10	14.00	28.10	19.80	14.30
Cr	ppm	14.90	19.50	19.30	14.20	42.20	45.70	68.00	10.80	36.90
Cu	ppm	9.95	20.17	30.00	26.16	70.80	43.70	165.88	29.31	28.64
F-ION	ppm	110	240	160	220	130	230	140	170	120
Fe	%	3.21	4.27	4.40	3.88	4.52	3.76	5.24	6.10	5.00
Ga	ppb	6.50	5.80	6.30	4.80	10.20	5.90	12.30	4.40	6.20
Hg	ppb	19101	687	1861	492	1653	650	8262	669	4395
K	%	0.06	0.06	0.11	0.10	0.05	0.06	0.02	0.08	0.05
La	ppm	3.40	10.60	5.00	6.80	5.20	6.80	4.20	6.90	6.20
LOI	%	9.30	9.10	8.80	11.30	9.20	6.50	9.90	10.40	4.00
Mg	%	0.79	0.64	0.79	0.44	1.33	0.94	1.58	0.90	0.71
Mn	ppm	1618	1017	692	951	1001	633	1110	964	643
Mo	ppm	0.65	2.65	0.65	3.88	1.49	2.87	0.90	3.99	0.70
Na	%	0.03	0.02	0.03	0.02	0.03	0.02	0.01	0.02	0.03
Ni	ppm	8.20	14.50	8.50	21.30	41.50	39.60	47.00	15.60	12.30
P	%	0.032	0.096	0.057	0.079	0.059	0.095	0.047	0.079	0.057
Pb	ppm	4.36	6.59	3.88	5.99	4.12	3.64	10.92	6.18	6.04
S	%	0.03	0.14	0.21	0.15	0.04	0.19	0.03	2.08	0.22
Sb	ppm	0.20	0.72	0.73	0.80	0.62	1.38	0.46	1.51	0.38
Sc	ppm	3.50	4.20	5.90	6.90	6.60	5.80	6.20	8.20	4.90
Se	ppm	0.40	1.30	0.30	1.70	1.20	2.70	0.70	1.50	0.70
Sr	ppm	39.80	27.90	186.20	64.70	50.20	32.40	38.00	101.70	35.50
Te	ppm	0.02	0.05	0.07	0.03	0.03	0.03	-0.02	0.07	0.05
Th	ppm	0.50	1.10	0.60	0.90	0.40	0.40	0.40	0.60	1.00
Ti	%	0.08	0.03	0.01	0.01	0.26	0.08	0.60	0.01	0.16
Tl	ppm	0.06	0.10	0.17	0.29	0.11	0.19	0.03	0.49	0.02
U	ppm	0.20	0.30	0.10	0.40	0.40	0.50	0.20	0.20	0.20
V	ppm	93.00	99.00	113.00	57.00	167.00	120.00	227.00	54.00	192.00
W	ppm	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
Zn	ppm	64.90	101.90	80.70	125.90	109.90	115.80	115.30	114.20	71.80

NTS		103F/08	103F/08	103F/01
Sample		99-3023	99-3030	99-3135
ZONE		8	8	8
UTME83		667642	689617	684041
UTMN83		5921113	5904324	5886635
Ag	ppb	99	251	166
Al	%	2.72	2.23	2.84
As	ppm	56.1	10.0	10.4
Au	ppb	0.70	2.60	2.90
Ba	ppm	114.20	205.90	70.60
Bi	ppm	0.06	0.21	0.05
Ca	%	1.11	0.48	1.42
Cd	ppm	1.05	0.11	0.35
Co	ppm	16.70	20.00	28.10
Cr	ppm	20.30	31.40	68.00
Cu	ppm	65.57	40.28	165.88
F-ION	ppm	200	180	140
Fe	%	4.18	4.69	5.24
Ga	ppm	8.20	7.00	12.30
Hg	ppb	47	240	8262
K	%	0.05	0.07	0.02
La	ppm	6.50	11.40	4.20
LOI	%	7.60	8.30	9.90
Mg	%	1.19	1.01	1.58
Mn	ppm	1029	951	1110
Mo	ppm	2.15	0.71	0.90
Na	%	0.07	0.02	0.01
Ni	ppm	19.50	34.00	47.00
P	%	0.079	0.080	0.047
Pb	ppm	11.14	14.34	10.92
S	%	0.06	0.16	0.03
Sb	ppm	0.56	0.76	0.46
Sc	ppm	6.20	4.10	6.20
Se	ppm	1.60	0.50	0.70
Sr	ppm	117.10	23.80	38.00
Te	ppm	0.06	0.06	-0.02
Th	ppm	0.50	2.40	0.40
Ti	%	0.10	0.02	0.60
Tl	ppm	0.08	0.05	0.03
U	ppm	0.30	0.50	0.20
W	ppm	0.05	0.05	0.05
V	ppm	108.00	68.00	227.00
W	ppm	-0.10	-0.10	-0.10
Zn	ppm	142.10	106.80	115.30

Table 14. Samples with VMS (Cu-Pb-Zn-Ag) signature

Table 15. Sample with porphyry (Au-Cu-Mo) signature

NTS		103F/01
Sample		99-3137
ZONE		8
UTME83		684836
UTMN83		5887361
Ag	ppb	134
Al	%	2.63
As	ppm	9.20
Au	ppb	3.70
Au-INAA	ppb	5.00
Ba	ppm	60.90
Bi	ppm	0.05
Ca	%	1.33
Cd	ppm	0.94
Co	ppm	23.90
Cr	ppm	49.60
Cu	ppm	69.75
F-ION	ppm	110
Fe	%	4.18
Ga	ppm	8.80
Hg	ppb	145
K	%	0.04
La	ppm	4.90
LOI	%	12.80
Mg	%	1.45
Mn	ppm	1300
Mo	ppm	3.34
Na	%	0.03
Ni	ppm	68
P	%	0.071
Pb	ppm	2.75
S	%	0.05
Sb	ppm	0.87
Sc	ppm	6.20
Se	ppm	1.60
Sr	ppm	26.40
Te	ppm	0.03
Th	ppm	0.30
Ti	%	0.20
Tl	ppm	0.23
U	ppm	0.90
V	ppm	165
W	ppm	-0.10
Zn	ppm	131.10

Appendix A – Sample Location and Analytical Data

Legend

MAP –	NTS Map Sheet
YEAR –	Year survey carried out
ID –	Sample identification number
UTMZ –	UTM Zone number
UTME27 –	UTM NAD 27 East Coordinate
UTMN27 –	UTM NAD 27 North Coordinate
UTME83 –	UTM NAD 83 East Coordinate
UTME83 –	UTM NAD 83 North Coordinate
LAT –	Latitude
LONG –	Longitude
ICPMS -	Aqua regia digestion - Inductively coupled plasma mass spectrometry
AAS -	Aqua regia digestion - Atomic absorption spectrometry

										Element		**Ag**	**Ag**	**Al**	**As**	**As**	**Au**	**Au**	**B**	**Ba**	**Bi**	**Bi**
										Det'n Limit		2	0.2	0.01	0.1	0.2	0.2	2	1	0.5	0.02	0.2
										Units		ppb	ppm	%	ppm	ppm	ppb	ppb	ppm	ppm	ppm	ppm
										Method		ICPMS	AAS	ICPMS	ICPMS	AAS	ICPMS	INAA	ICPMS	ICPMS	ICPMS	AAS
MAP	**YEAR**	**ID**	**UTMZ**	**UTME27**	**UTMN27**	**UTME83**	**UTMN83**	**LAT**	**LONG**		**STN**											
103F08	1999	3002	8	677161	5913764	677040	5913948	53.345	132.34			82	0.2	2.17	13.10	12.0	-0.2	-2	2.0	127.3	0.11	0.2
103F08	1999	3003	8	675961	5913412	675840	5913596	53.342	132.359			324	0.2	2.50	5.40	5.1	-0.2	-2	2.0	123.5	0.09	0.2
103F08	1999	3004	8	672262	5913375	672141	5913558	53.343	132.414			104	0.2	3.09	9.20	8.2	-0.2	-2	3.0	125.7	0.07	0.2
103F08	1999	3005	8	672594	5911525	672473	5911708	53.326	132.41		10	50	0.2	2.82	14.50	12.0	0.4	-2	2.0	101.6	0.08	0.2
103F08	1999	3006	8	672594	5911525	672473	5911708	53.326	132.41		20	46	0.2	2.85	13.50	12.0	0.2	-2	2.0	94.8	0.07	0.2
103F08	1999	3008	8	672825	5910489	672704	5910672	53.317	132.407			63	0.2	2.68	21.90	25.0	1.7	4	-1.0	56.8	0.10	0.2
103F08	1999	3009	8	672149	5908974	672028	5909157	53.304	132.418			41	0.2	1.51	5.60	5.7	0.4	-2	2.0	46.6	0.12	0.2
103F08	1999	3010	8	670514	5914221	670393	5914404	53.351	132.44			133	0.2	1.82	19.40	20.0	0.9	-2	2.0	307.6	0.09	0.2
103F08	1999	3011	8	669941	5916263	669820	5916446	53.37	132.447			42	0.2	1.98	126.10	115.0	5.5	4	1.0	87.6	0.23	0.2
103F08	1999	3012	8	669612	5917493	669491	5917676	53.381	132.452			46	0.2	1.71	70.10	75.0	8.9	26	2.0	180.3	0.12	0.2
103F08	1999	3013	8	672461	5919296	672340	5919479	53.396	132.408			56	0.2	2.54	14.70	17.0	0.9	3	6.0	116.0	0.08	0.2
103F08	1999	3014	8	671746	5920528	671625	5920711	53.408	132.418			102	0.2	2.43	24.30	22.0	3.1	66	3.0	163.2	0.05	0.2
103F08	1999	3015	8	670631	5920359	670510	5920542	53.406	132.435			37	0.2	2.43	9.30	8.5	0.7	-2	7.0	58.2	0.10	0.2
103F08	1999	3016	8	667920	5927168	667799	5927350	53.468	132.472			27	0.2	1.96	8.60	8.2	0.5	9	-1.0	45.7	0.07	0.2
103F08	1999	3017	8	666193	5928090	666072	5928272	53.477	132.497			35	0.2	1.81	4.90	4.4	0.3	-2	1.0	69.5	0.09	0.2
103F08	1999	3018	8	666181	5927871	666060	5928053	53.475	132.498			33	0.2	1.50	4.10	3.7	0.4	4	3.0	108.6	0.11	0.2
103F08	1999	3019	8	668583	5925749	668462	5925931	53.455	132.463			37	0.2	2.28	16.60	19.0	0.9	3	2.0	52.9	0.11	0.2
103F08	1999	3020	8	666994	5923788	666873	5923970	53.438	132.488			59	0.2	2.43	53.50	58.0	13.2	-2	9.0	81.8	0.07	0.2
103F08	1999	3022	8	666534	5922506	666413	5922689	53.427	132.495			139	0.2	2.89	89.50	90.0	0.5	-2	4.0	68.8	1.58	0.2
103F08	1999	3023	8	667763	5920930	667642	5921113	53.412	132.478			99	0.2	2.72	56.10	52.0	0.7	-2	9.0	114.2	0.06	0.2
103F07	1999	3024	8	663047	5925685	662926	5925867	53.457	132.546			56	0.2	1.82	3.40	2.9	0.3	-2	2.0	115.9	0.17	0.2
103F07	1999	3025	8	663611	5924851	663490	5925033	53.449	132.538			22	0.2	2.15	1.40	2.1	0.2	2	2.0	79.4	0.04	0.2
103F07	1999	3026	8	664858	5922539	664737	5922722	53.428	132.52			27	0.2	2.27	8.90	8.1	1.8	-2	2.0	87.4	0.07	0.2
103F07	1999	3027	8	661122	5922629	661001	5922812	53.43	132.577		10	47	0.2	1.53	18.30	19.0	0.8	-2	2.0	241.7	0.22	0.2
103F07	1999	3028	8	661122	5922629	661001	5922812	53.43	132.577		20	47	0.2	1.56	19.20	18.0	0.7	-2	2.0	226.9	0.25	0.2
103F08	1999	3029	8	689942	5904408	689821	5904592	53.257	132.154			101	0.2	2.10	9.90	8.0	1.4	27	3.0	166.5	0.13	0.2
103F08	1999	3030	8	689738	5904140	689617	5904324	53.254	132.157			251	0.2	2.23	10.00	8.4	2.6	6	2.0	205.9	0.21	0.2
103F08	1999	3031	8	689995	5906459	689874	5906643	53.275	132.152			84	0.2	2.03	8.60	7.2	1.6	-2	7.0	204.2	0.15	0.2
103F08	1999	3032	8	690804	5906501	690683	5906686	53.275	132.14			65	0.2	2.05	9.50	9.0	2.4	-2	3.0	416.9	0.15	0.2
103F08	1999	3033	8	690278	5908617	690157	5908802	53.294	132.147			23	0.2	2.11	9.30	8.6	0.7	-2	4.0	192.3	0.06	0.2
103F08	1999	3034	8	690391	5909706	690270	5909891	53.304	132.144			45	0.2	2.11	8.40	8.1	0.6	5	4.0	141.4	0.08	0.2
103F08	1999	3036	8	688629	5908446	688508	5908631	53.293	132.172			94	0.2	2.00	14.20	16.0	1.5	322	4.0	142.8	0.13	0.2
103F08	1999	3037	8	690226	5910902	690105	5911087	53.315	132.146			48	0.2	2.06	6.80	5.5	0.4	3	6.0	163.1	0.07	0.2
103F08	1999	3038	8	688176	5911872	688055	5912057	53.324	132.176			28	0.2	2.00	6.20	5.0	0.2	-2	5.0	154.8	0.07	0.2
103F08	1999	3039	8	687186	5912622	687065	5912807	53.331	132.191			27	0.2	1.92	5.90	5.2	-0.2	5	4.0	122.9	0.06	0.2
103F08	1999	3040	8	691637	5921023	691516	5921208	53.405	132.119			41	0.2	1.96	5.40	4.4	-0.2	-2	6.0	164.8	0.04	0.2
103G04	1999	3042	9	306321	5902224	306212	5902419	53.236	131.904			41	0.2	1.37	6.60	5.6	1.1	219	3.0	106.4	0.10	0.2
103G04	1999	3043	9	314477	5896836	314369	5897032	53.19	131.779			21	0.2	1.32	6.50	5.2	0.2	-2	3.0	64.8	0.05	0.2
103G04	1999	3044	9	312590	5894382	312482	5894578	53.167	131.805			31	0.2	1.71	3.80	3.8	0.9	-2	3.0	135.7	0.05	0.2
103G04	1999	3045	9	313805	5888189	313697	5888385	53.112	131.784			62	0.2	2.16	9.80	8.5	1.2	3	3.0	137.7	0.07	0.2
103G04	1999	3046	9	319922	5887772	319814	5887969	53.111	131.692			29	0.2	1.63	5.10	3.9	0.6	4	3.0	49.3	0.03	0.2
103G04	1999	3048	9	317474	5887581	317366	5887777	53.108	131.729			40	0.2	1.99	25.20	27.0	7.1	17	3.0	60.3	0.04	0.2
103G04	1999	3049	9	314686	5892205	314578	5892401	53.149	131.773			32	0.2	2.09	2.50	2.0	0.6	-2	3.0	112.5	0.03	0.2
103F01	1999	3050	8	711976	5889533	711856	5889719	53.115	131.834			46	0.2	1.72	6.40	4.9	0.7	-2	11.0	145.6	0.07	0.2
103G04	1999	3051	9	308327	5888367	308218	5888562	53.112	131.865			27	0.2	1.45	8.60	6.5	0.6	-2	5.0	85.4	0.04	0.2
103G04	1999	3052	9	302103	5888336	301994	5888530	53.109	131.958			35	0.2	1.59	19.30	17.0	1.3	-2	4.0	109.3	0.07	0.2
103G04	1999	3053	9	299697	5888822	299588	5889016	53.113	131.995			47	0.2	1.49	49.00	44.0	0.9	87	5.0	157.6	0.07	0.2
103G04	1999	3054	9	295717	5893932	295608	5894126	53.157	132.057			82	0.2	1.43	15.00	11.0	2	-2	4.0	136.1	0.14	0.2

MAP	YEAR	ID	UTMZ	UTME27	UTMN27	UTME83	UTMN83	LAT	LONG	STN	Ag	Ag	Al	As	As	Au	Au	B	Ba	Bi	Bi
103F01	1999	3055	8	699153	5896507	699032	5896692	53.182	132.021	10	45	0.2	1.97	10.00	8.2	0.7	17	6.0	157.7	0.07	0.2
103F01	1999	3056	8	699153	5896507	699032	5896692	53.182	132.021	20	41	0.2	2.02	10.40	8.5	1.3	-2	4.0	170.4	0.08	0.2
103G04	1999	3057	9	302296	5898537	302187	5898732	53.201	131.962		32	0.2	1.76	6.40	5.7	0.8	45	4.0	124.2	0.06	0.2
103F09	1999	3058	8	667701	5943550	667580	5943731	53.616	132.467		25	0.2	3.18	0.90	1.0	-0.2	-2	3.0	101.4	0.03	0.2
103F09	1999	3059	8	666910	5942262	666789	5942443	53.604	132.479		16	0.2	2.55	0.10	0.5	-0.2	-2	1.0	80.4	0.02	0.2
103F09	1999	3060	8	666010	5939061	665889	5939242	53.576	132.494		25	0.2	2.04	2.80	2.2	-0.2	-2	5.0	186.6	0.06	0.2
103F10	1999	3062	8	661742	5932953	661621	5933134	53.522	132.562		57	0.2	3.29	4.80	4.3	0.2	-2	10.0	123.6	0.08	0.2
103F10	1999	3063	8	662211	5933363	662090	5933544	53.526	132.555	10	30	0.2	2.08	4.40	2.0	0.3	-2	4.0	154.6	0.08	0.2
103F10	1999	3064	8	662211	5933363	662090	5933544	53.526	132.555	20	35	0.2	2.01	4.50	4.0	0.3	-2	3.0	153.9	0.07	0.2
103F10	1999	3065	8	662571	5933849	662450	5934030	53.53	132.549		24	0.2	1.89	3.20	3.2	0.4	-2	2.0	89.3	0.06	0.2
103F10	1999	3066	8	662532	5934027	662411	5934208	53.532	132.55		23	0.2	2.07	1.90	1.7	0.2	-2	2.0	105.7	0.06	0.2
103F10	1999	3067	8	663444	5933959	663323	5934140	53.531	132.536		27	0.2	2.36	3.20	3.3	0.2	-2	1.0	86.4	0.06	0.2
103F10	1999	3068	8	665217	5932636	665096	5932817	53.518	132.51		25	0.2	1.70	3.60	3.9	-0.2	-2	2.0	71.7	0.06	0.2
103F09	1999	3069	8	666072	5936023	665951	5936204	53.548	132.495		49	0.2	2.22	4.10	3.9	-0.2	-2	-1.0	134.4	0.08	0.2
103F09	1999	3070	8	667796	5937477	667675	5937658	53.561	132.468		59	0.2	1.49	6.10	5.1	0.2	-2	3.0	74.2	0.10	0.2
103F09	1999	3071	8	667847	5937605	667726	5937786	53.562	132.468		41	0.3	1.30	4.30	3.8	-0.2	3	-1.0	91.1	0.11	0.2
103F09	1999	3072	8	672197	5941161	672076	5941342	53.593	132.4		33	0.2	2.00	5.30	4.4	-0.2	-2	-1.0	140.9	0.05	0.2
103F09	1999	3073	8	669829	5935781	669708	5935962	53.545	132.439		38	0.2	1.49	149.30	170.0	0.7	5	-1.0	41.7	11.19	8
103F09	1999	3075	8	669715	5935891	669594	5936072	53.546	132.44		33	0.2	2.02	31.00	31.0	0.4	-2	-1.0	88.5	0.11	0.2
103F09	1999	3076	8	670848	5936978	670727	5937159	53.556	132.423		31	0.2	1.96	28.60	35.0	0.2	-2	-1.0	96.7	0.08	0.2
103F09	1999	3077	8	671840	5937149	671719	5937330	53.557	132.408		40	0.3	2.02	6.20	6.0	-0.2	-2	-1.0	106.1	0.06	0.2
103F09	1999	3078	8	672653	5936770	672532	5936951	53.553	132.395		26	0.2	1.67	2.60	2.6	0.3	-2	-1.0	104.8	0.07	0.2
103F08	1999	3079	8	692789	5904373	692668	5904558	53.255	132.112		60	0.2	2.06	7.10	6.7	1.6	-2	1.0	437.2	0.13	0.2
103F08	1999	3080	8	685915	5915469	685794	5915654	53.357	132.208		58	0.2	1.99	9.10	8.8	-0.2	-2	2.0	219.3	0.05	0.2
103F08	1999	3082	8	686732	5919696	686611	5919880	53.395	132.193		40	0.2	2.04	6.20	6.8	0.5	-2	2.0	218.6	0.05	0.2
103F08	1999	3083	8	684578	5914101	684457	5914286	53.346	132.229		53	0.2	2.71	6.40	6.0	0.4	-2	-1.0	310.5	0.09	0.2
103F08	1999	3084	8	683678	5911429	683557	5911614	53.322	132.244		35	0.2	2.12	10.50	9.4	0.7	5	3.0	93.7	0.09	0.2
103F08	1999	3085	8	678590	5914950	678469	5915134	53.355	132.318		54	0.2	2.03	8.60	8.3	1.1	-2	1.0	346.3	0.18	0.2
103F08	1999	3086	8	677151	5914770	677030	5914954	53.354	132.34		60	0.2	1.95	11.60	11.0	0.5	45	2.0	136.5	0.18	0.2
103F08	1999	3087	8	677090	5914882	676969	5915066	53.355	132.341		34	0.2	2.71	4.10	3.9	0.3	-2	13.0	40.7	0.29	4
103F08	1999	3088	8	677373	5918485	677252	5918669	53.387	132.335		33	0.2	2.10	9.40	9.1	0.5	3	4.0	142.6	0.07	0.2
103F08	1999	3089	8	680390	5917628	680269	5917812	53.379	132.29		98	0.2	2.17	11.30	10.0	1.9	-2	4.0	186.8	1.59	0.2
103F08	1999	3090	8	681361	5919292	681240	5919476	53.393	132.274		100	0.2	2.26	10.00	9.5	0.9	-2	2.0	249.4	0.11	0.2
103F08	1999	3091	8	682216	5921223	682095	5921407	53.41	132.26		157	0.3	2.24	13.60	15.0	0.6	-2	19.0	352.2	0.08	0.2
103F08	1999	3092	8	681988	5924184	681867	5924368	53.437	132.262	10	24	0.2	2.09	5.30	5.3	0.3	-2	3.0	155.3	0.04	0.2
103F08	1999	3093	8	681988	5924184	681867	5924368	53.437	132.262	20	22	0.2	2.05	5.10	5.0	0.2	-2	4.0	153.3	0.04	0.2
103F08	1999	3094	8	696980	5908736	696859	5908921	53.293	132.046		17	0.2	2.09	10.20	9.7	0.4	4	2.0	133.8	0.06	0.2
103F08	1999	3095	8	691119	5916543	690998	5916728	53.365	132.129		80	0.2	2.10	8.60	8.2	0.2	-2	4.0	386.5	0.04	0.2
103F08	1999	3096	8	690304	5915151	690183	5915336	53.353	132.142		58	0.2	3.00	7.40	7.5	0.5	-2	3.0	310.3	0.03	0.2
103F08	1999	3099	8	692871	5918812	692750	5918997	53.385	132.102		37	0.2	2.23	7.90	7.9	0.6	-2	3.0	192.8	0.04	0.2
103F08	1999	3100	8	675845	5921258	675724	5921442	53.413	132.356		26	0.2	2.27	8.00	8.0	0.4	-2	4.0	139.9	0.06	0.2
103F08	1999	3102	8	675933	5921445	675812	5921629	53.414	132.355		36	0.2	2.12	14.40	16.0	0.8	4	3.0	117.7	0.07	0.2
103F08	1999	3103	8	679262	5922631	679141	5922815	53.424	132.304		93	0.2	2.16	12.70	13.0	0.3	-2	3.0	492.0	0.08	0.2
103F08	1999	3104	8	679589	5925883	679468	5926066	53.453	132.297		64	0.2	2.07	9.00	11.0	0.7	-2	3.0	151.9	0.11	0.2
103F08	1999	3105	8	679257	5925511	679136	5925694	53.45	132.302		78	0.2	1.98	7.20	7.3	0.5	-2	3.0	129.5	0.10	0.2
103F08	1999	3106	8	679056	5924954	678935	5925137	53.445	132.306	10	71	0.2	1.81	44.90	51.0	0.6	-2	3.0	131.3	0.11	0.2
103F08	1999	3107	8	679056	5924954	678935	5925137	53.445	132.306	20	65	0.2	1.78	41.70	52.0	0.5	-2	4.0	120.7	0.16	0.2
103G05	1999	3108	9	304913	5920747	304803	5920942	53.401	131.936		12	0.2	0.83	1.20	2.2	-0.2	-2	3.0	36.0	0.02	0.2
103G05	1999	3109	9	303835	5913699	303725	5913894	53.338	131.948		21	0.2	1.73	5.60	5.7	0.8	177	5.0	67.8	0.04	0.2
103G05	1999	3110	9	303110	5912250	303000	5912445	53.324	131.958		96	0.2	1.95	8.80	8.6	114.7	184	3.0	88.8	0.05	0.2
103G05	1999	3111	9	300745	5906466	300636	5906661	53.272	131.99		418	0.4	2.15	51.40	53.0	13.7	116	3.0	146.2	0.05	0.2
103F08	1999	3113	8	697819	5904298	697698	5904483	53.253	132.036		24	0.2	1.97	6.60	5.7	0.4	-2	3.0	320.4	0.06	0.2

MAP	YEAR	ID	UTMZ	UTME27	UTMN27	UTME83	UTMN83	LAT	LONG	STN	Ag	Ag	Al	As	As	Au	Au	B	Ba	Bi	Bi
103F08	1999	3114	8	684354	5915319	684233	5915504	53.357	132.232		63	0.2	2.59	5.90	5.3	0.4	-2	2.0	341.7	0.09	0.2
103F08	1999	3115	8	680194	5923165	680073	5923349	53.428	132.29		106	0.2	1.78	7.00	7.2	1.6	4	2.0	250.7	0.10	0.2
103F08	1999	3116	8	682854	5927152	682733	5927335	53.463	132.247		34	0.2	2.29	3.20	3.4	0.4	-2	3.0	173.9	0.04	0.2
103F08	1999	3117	8	685392	5930493	685272	5930676	53.492	132.207		36	0.2	2.15	3.50	3.7	0.2	-2	5.0	139.1	0.07	0.2
103F09	1999	3118	8	681628	5931281	681507	5931463	53.501	132.263		33	0.2	1.74	8.00	7.6	0.7	3	3.0	99.1	0.09	0.2
103F09	1999	3119	8	680626	5931329	680505	5931511	53.502	132.278		47	0.2	1.60	5.60	6.0	1	-2	3.0	152.5	0.13	0.2
103F09	1999	3120	8	677279	5933843	677158	5934024	53.525	132.327		29	0.2	2.22	2.10	2.1	0.5	-2	3.0	135.2	0.05	0.2
103F09	1999	3122	8	677629	5936498	677508	5936679	53.549	132.321		26	0.2	2.27	0.60	0.7	0.3	-2	6.0	168.2	0.03	0.2
103F09	1999	3123	8	675289	5934114	675168	5934295	53.528	132.357	10	22	0.2	1.50	4.50	5.1	0.2	4	2.0	115.9	0.08	0.2
103F09	1999	3124	8	675289	5934114	675168	5934295	53.528	132.357	20	27	0.2	1.59	4.90	5.0	-0.2	3	4.0	129.8	0.08	0.2
103F09	1999	3125	8	676214	5934706	676093	5934887	53.533	132.343		25	0.2	1.90	1.00	1.1	-0.2	3	3.0	103.9	0.05	0.2
103F01	1999	3126	8	694922	5892451	694802	5892635	53.147	132.087		54	0.2	1.85	17.50	18.0	1.9	147	11.0	93.2	0.12	0.2
103F01	1999	3128	8	691379	5891547	691259	5891731	53.141	132.14		62	0.2	2.30	28.50	33.0	0.9	-2	15.0	107.3	0.07	0.2
103F01	1999	3129	8	690268	5891429	690148	5891613	53.14	132.157		59	0.2	2.79	5.50	5.7	0.5	33	4.0	142.1	0.06	0.2
103F01	1999	3130	8	684551	5891303	684431	5891487	53.141	132.243		65	0.2	2.88	7.80	7.4	0.7	-2	2.0	105.4	0.08	0.2
103F01	1999	3131	8	686961	5891760	686841	5891944	53.144	132.206		56	0.2	3.47	7.30	7.8	0.4	12	4.0	165.2	0.08	0.2
103F01	1999	3132	8	687346	5889231	687226	5889415	53.121	132.202		55	0.2	3.29	3.80	4.1	0.6	-2	5.0	65.0	0.04	0.2
103F01	1999	3133	8	685262	5888608	685142	5888792	53.116	132.233		57	0.2	2.97	5.60	6.0	0.6	-2	2.0	135.6	0.07	0.2
103F01	1999	3134	8	684669	5888340	684549	5888524	53.114	132.242		146	0.2	2.86	6.90	6.9	0.9	-2	7.0	134.0	0.07	0.2
103F01	1999	3135	8	684161	5886451	684041	5886635	53.097	132.251		166	0.2	2.84	10.40	8.1	2.9	28	19.0	70.6	0.05	0.2
103F01	1999	3136	8	687144	5888921	687024	5889105	53.119	132.205		116	0.2	2.95	6.90	6.2	81.5	48	10.0	83.3	0.05	0.2
103F01	1999	3137	8	684956	5887177	684836	5887361	53.104	132.239		134	0.2	2.63	9.20	7.6	3.7	5	9.0	60.9	0.05	0.2
103F01	1999	3138	8	687281	5888744	687161	5888928	53.117	132.203		81	0.2	2.70	4.10	3.3	1.6	-2	9.0	53.3	0.04	0.2
103F01	1999	3139	8	688880	5888003	688760	5888187	53.11	132.18		154	0.2	1.89	10.20	11.0	1.3	252	6.0	128.9	0.05	0.2
103F01	1999	3140	8	690275	5889126	690155	5889310	53.119	132.158		87	0.2	2.40	9.10	10.0	0.7	-2	3.0	147.6	0.09	0.2
103F01	1999	3142	8	690956	5890119	690836	5890303	53.128	132.148		45	0.2	1.92	12.50	11.0	2.9	62	21.0	123.3	0.07	0.2
103F01	1999	3143	8	697357	5890418	697237	5890602	53.128	132.052		54	0.2	1.57	8.10	7.9	1.4	-2	3.0	118.2	0.10	0.2
103F01	1999	3144	8	697679	5887255	697559	5887439	53.1	132.049		60	0.2	1.96	9.10	9.5	0.9	4	4.0	141.6	0.09	0.2
103F01	1999	3145	8	699323	5889048	699203	5889232	53.115	132.023		67	0.2	1.73	17.90	19.0	2.2	-2	3.0	219.9	0.13	0.2
103G04	1999	3146	9	308343	5901953	308234	5902148	53.234	131.873		32	0.2	1.70	7.80	6.8	1.1	3	4.0	110.1	0.07	0.2
103G04	1999	3147	9	304779	5901735	304670	5901930	53.231	131.927		32	0.2	1.48	4.40	4.0	0.6	223	4.0	89.2	0.06	0.2
103G04	1999	3148	9	303438	5896825	303329	5897020	53.186	131.944		36	0.2	1.86	7.50	6.9	18.1	3	3.0	125.8	0.08	0.2
103G04	1999	3149	9	306538	5896564	306429	5896759	53.185	131.897	10	40	0.2	1.69	9.20	7.7	1.1	139	3.0	74.0	0.07	0.2
103G04	1999	3150	9	306538	5896564	306429	5896759	53.185	131.897	20	49	0.2	1.80	10.30	8.1	1.3	-2	4.0	85.9	0.08	0.2
103G04	1999	3151	9	303680	5896755	303571	5896950	53.186	131.94		40	0.2	1.85	8.10	7.2	1.1	4	4.0	106.1	0.08	0.2
103G04	1999	3152	9	300320	5897436	300211	5897630	53.19	131.991		45	0.2	2.25	6.50	6.3	0.7	2	4.0	158.2	0.05	0.2
103F01	1999	3153	8	699034	5881624	698914	5881808	53.049	132.032		118	0.2	2.62	3.60	3.2	0.9	-2	12.0	87.3	0.04	0.2
103F01	1999	3154	8	699126	5882617	699006	5882801	53.058	132.03		68	0.2	2.23	6.00	5.7	1.1	-2	8.0	64.6	0.05	0.2
103F01	1999	3155	8	697660	5882381	697540	5882565	53.056	132.052		63	0.2	2.40	6.10	6.0	2	19	13.0	44.3	0.03	0.2
103F01	1999	3156	8	694790	5885285	694670	5885469	53.083	132.093		79	0.2	1.76	27.20	27.0	0.7	3	3.0	89.8	0.08	0.2
103F01	1999	3157	8	696581	5886296	696461	5886480	53.092	132.066		90	0.2	2.59	9.50	9.2	0.6	-2	2.0	189.5	0.09	0.2
103F01	1999	3158	8	699682	5890799	699562	5890984	53.131	132.017		60	0.2	1.59	20.50	21.0	4	46	5.0	154.4	0.16	0.2
103F01	1999	3160	8	697196	5894390	697076	5894575	53.164	132.052		75	0.2	2.18	6.00	5.7	1	4	4.0	191.4	0.06	0.3
103F09	1999	3162	8	688035	5938244	687915	5938427	53.561	132.163		24	0.2	0.99	2.40	2.1	0.2	-2	14.0	47.9	0.03	0.2
103F09	1999	3164	8	683906	5943454	683786	5943636	53.609	132.222		16	0.2	1.20	3.90	3.7	0.4	2	5.0	58.1	0.05	0.2
103F09	1999	3165	8	683122	5940981	683002	5941163	53.587	132.235		22	0.2	0.78	2.50	1.8	0.4	-2	4.0	44.2	0.03	0.2
103F09	1999	3166	8	682408	5935125	682287	5935307	53.535	132.249		29	0.2	2.05	15.90	16.0	0.2	-2	2.0	134.8	0.15	0.8
103F09	1999	3167	8	682445	5937866	682325	5938048	53.56	132.247	10	20	0.2	1.67	1.50	1.8	0.5	2	3.0	113.9	0.04	0.2
103F09	1999	3168	8	682445	5937866	682325	5938048	53.56	132.247	20	24	0.2	1.73	1.60	1.7	0.3	-2	3.0	117.3	0.04	0.2
103F09	1999	3169	8	678093	5939434	677972	5939615	53.575	132.312		22	0.2	1.59	4.10	3.7	0.2	-2	4.0	95.9	0.05	0.2
103F09	1999	3170	8	674027	5938679	673906	5938860	53.57	132.374		23	0.2	2.36	2.00	2.2	0.6	-2	4.0	164.4	0.08	0.2
103F09	1999	3171	8	674016	5938223	673895	5938404	53.566	132.374		23	0.2	1.21	1.50	1.5	1.2	-2	3.0	118.8	0.06	0.2

MAP	YEAR	ID	UTMZ	UTME27	UTMN27	UTME83	UTMN83	LAT	LONG	STN	Ag	Ag	Al	As	As	Au	Au	B	Ba	Bi	Bi
103F09	1999	3172	8	671131	5932867	671010	5933048	53.519	132.421		35	0.3	0.87	18.00	19.0	0.3	-2	1.0	48.9	0.19	0.2
103F09	1999	3173	8	671735	5932503	671614	5932684	53.515	132.412		37	0.2	1.18	10.40	10.5	0.2	-2	1.0	98.7	0.16	0.2
103F09	1999	3174	8	669624	5933203	669503	5933384	53.522	132.443		40	0.2	2.13	52.90	59.0	0.5	-2	2.0	60.2	0.08	0.2
103F09	1999	3175	8	673502	5932287	673381	5932468	53.513	132.385		50	0.2	1.81	18.10	19.0	0.7	-2	1.0	93.3	0.12	0.2
103F08	1999	3176	8	670149	5928601	670028	5928783	53.481	132.438		17	0.2	1.77	23.60	26.0	0.4	-2	1.0	54.4	0.08	0.2
103F08	1999	3177	8	669931	5929298	669810	5929480	53.487	132.441		27	0.2	2.20	8.20	7.7	0.6	-2	2.0	75.6	0.09	0.2
103F08	1999	3178	8	670425	5930196	670304	5930377	53.495	132.433		32	0.2	1.86	244.40	200.0	2.1	-2	1.0	82.2	2.92	20
103F09	1999	3179	8	670936	5932135	670815	5932316	53.512	132.424		50	0.2	2.67	36.50	40.0	0.5	4	2.0	65.8	0.10	0.2
103F09	1999	3180	8	668770	5932278	668649	5932459	53.514	132.456		32	0.2	2.12	5.40	5.7	0.5	4	2.0	77.5	0.12	0.2
103F09	1999	3182	8	667872	5932208	667751	5932389	53.514	132.47		33	0.2	2.25	4.20	4.1	0.5	-2	2.0	85.4	0.07	0.2
103F08	1999	3183	8	674506	5930850	674385	5931031	53.499	132.371		29	0.2	1.43	42.50	39.0	1.1	-2	6.0	29.9	0.71	0.5
103F08	1999	3184	8	673255	5930108	673134	5930290	53.493	132.39	10	24	0.2	1.41	20.70	21.0	0.3	-2	16.0	32.6	0.11	0.2
103F08	1999	3185	8	673255	5930108	673134	5930290	53.493	132.39	20	29	0.2	1.61	23.40	21.0	0.5	-2	8.0	39.6	0.12	0.2
103F08	1999	3186	8	676872	5930440	676751	5930622	53.495	132.335		29	0.2	1.38	38.60	37.0	1.5	-2	4.0	38.8	0.35	0.3
103F08	1999	3187	8	691547	5928118	691427	5928302	53.469	132.116		47	0.2	2.14	7.90	7.2	1.2	6	3.0	86.9	0.05	0.2
103F08	1999	3188	8	691413	5931518	691293	5931701	53.499	132.116		686	0.2	1.86	6.90	6.6	4247.6	52	3.0	83.0	0.03	0.2
103F08	1999	3189	8	690080	5929101	689960	5929284	53.478	132.137		38	0.2	2.28	6.20	6.2	0.7	-2	3.0	92.3	0.05	0.2
103F08	1999	3190	8	688117	5930163	687997	5930346	53.488	132.166		66	0.2	2.19	8.00	7.6	1.8	-2	4.0	109.4	0.11	0.2
103F01	1999	3192	8	668696	5899919	668576	5900103	53.223	132.475		32	0.2	1.58	6.90	6.3	0.9	-2	3.0	66.2	0.23	0.2
103F01	1999	3193	8	668413	5899998	668293	5900182	53.224	132.479		21	0.2	0.94	2.30	2.2	0.4	4	2.0	23.2	0.17	0.2
103F01	1999	3194	8	667892	5898757	667772	5898940	53.213	132.487		30	0.2	2.55	10.80	9.3	0.5	3	7.0	61.6	0.13	0.2
103F01	1999	3195	8	668746	5895945	668626	5896128	53.188	132.476		23	0.2	1.80	1.60	1.3	0.4	3	4.0	30.7	0.12	0.2
103F01	1999	3196	8	672023	5893975	671903	5894159	53.169	132.428		51	0.2	3.00	4.50	4.1	0.7	2	9.0	48.5	0.15	0.2
103F01	1999	3197	8	671902	5894243	671782	5894427	53.171	132.43		46	0.2	2.32	20.00	21.0	1.8	2	3.0	56.7	0.41	0.3
103F01	1999	3198	8	670278	5893120	670158	5893303	53.162	132.455		40	0.2	3.67	11.60	13.0	2.1	-2	7.0	54.7	0.14	0.2
103F01	1999	3199	8	671058	5890414	670938	5890597	53.137	132.445		31	0.2	3.84	3.30	2.6	0.8	-2	6.0	71.6	0.07	0.2
103F01	1999	3200	8	673336	5890700	673216	5890884	53.139	132.41		32	0.2	3.40	5.80	6.0	-0.2	-2	4.0	63.9	0.15	0.2
103F01	1999	3202	8	674950	5887242	674830	5887426	53.108	132.388		41	0.2	1.84	9.80	8.3	0.7	5	7.0	127.3	0.07	0.2
103F01	1999	3203	8	677098	5892562	676978	5892746	53.155	132.353		38	0.2	3.57	9.40	8.4	0.5	-2	6.0	50.1	0.17	0.2
103F01	1999	3204	8	677934	5896205	677814	5896389	53.187	132.339		43	0.2	2.70	9.70	9.0	0.5	4	12.0	57.5	0.14	0.2
103F01	1999	3205	8	681877	5892631	681757	5892815	53.154	132.282		89	0.2	3.10	8.70	8.0	1.6	10	1.0	112.4	0.11	0.2
103F01	1999	3206	8	688807	5894165	688687	5894349	53.165	132.177		66	4	1.85	14.40	16.0	1.8	-2	10.0	111.0	0.12	0.2
103F01	1999	3207	8	678808	5901624	678688	5901808	53.235	132.323		84	0.2	3.37	13.10	13.0	2.2	10	5.0	38.0	0.17	0.2
103F01	1999	3208	8	681651	5897362	681531	5897546	53.196	132.282		51	0.2	3.51	10.40	9.7	2	-2	5.0	89.2	0.08	0.2
103F01	1999	3209	8	685406	5896554	685286	5896738	53.188	132.227		66	0.2	2.23	13.10	13.0	1.2	-2	5.0	139.1	0.10	0.2
103F01	1999	3210	8	684774	5900758	684654	5900942	53.226	132.234		51	0.2	2.26	30.00	30.0	5.7	57	2.0	65.2	0.79	0.7
103F01	1999	3212	8	684774	5900758	684654	5900942	53.226	132.234	10	100	0.2	2.33	29.30	31.0	747.2	47	2.0	63.3	1.05	0.8
103F08	1999	3213	8	680487	5911156	680366	5911340	53.32	132.292	20	39	0.2	1.99	14.00	13.0	0.6	-2	6.0	108.5	0.10	0.2
103F08	1999	3214	8	678402	5909186	678282	5909370	53.303	132.324		55	0.2	2.50	17.30	16.0	0.7	-2	3.0	73.1	0.25	0.2
103F08	1999	3215	8	679313	5909230	679193	5909414	53.304	132.311		57	0.2	1.93	31.80	34.0	1.3	150	6.0	74.5	1.20	0.5
103F08	1999	3216	8	680017	5909197	679897	5909381	53.303	132.3		51	0.2	1.82	18.50	19.0	1.9	580	2.0	62.3	0.56	0.8
103F08	1999	3217	8	681930	5912462	681809	5912647	53.332	132.27		35	0.2	2.32	9.00	8.2	0.8	5	3.0	86.3	0.13	0.2

ID	Ca	Cd	Cd	Co	Co	Cr	Cu	Cu	F	Fe	Fe	FW	Ga	Hg	Hg	K	La	LOI	Mg	Mn	Mn	Mo	Mo	Na	Ni	Ni
	0.01	0.01	0.2	0.1	2	0.5	0.01	2	40	0.01	0.02	20	0.1	5	10	0.01	0.5	0.1	0.01	1	5	0.01	1	0.001	0.1	2
	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppb	ppm	ppb	ppm	%	ppm	%	%	ppm	ppm	ppm	ppb	%	ppm	ppm
	ICPMS	ICPMS	AAS	ICPMS	AAS	ICPMS	ICPMS	AAS	ION	ICPMS	AAS	ION	ICPMS	ICPMS	AAS	ICPMS	ICPMS	FUS	ICPMS	ICPMS	AAS	ICPMS	AAS	ICPMS	ICPMS	AAS
3002	0.58	0.48	0.5	14.8	13	24.5	25.95	27	200	3.79	3.4	44	6.2	279	270	0.09	9.0	9.5	0.74	840	526	2.55	3	0.026	20.6	19
3003	0.61	0.08	0.2	16.9	14	24.5	27.27	27	190	4.04	3.5	36	6.6	40	50	0.08	8.9	10.6	0.74	767	450	0.95	1	0.030	13.5	12
3004	1.34	0.79	0.8	15.1	13	22.4	33.56	38	190	4.54	4.0	48	8.7	204	70	0.09	8.9	8.2	1.06	1031	663	3.92	3	0.039	19.0	17
3005	1.01	0.13	0.2	15.0	12	27.1	25.25	27	220	3.98	3.3	38	8.5	48	60	0.08	10.3	7.9	1.07	761	465	1.40	1	0.035	13.9	11
3006	1.00	0.13	0.2	14.5	12	24.3	24.95	28	150	3.85	3.4	50	8.2	49	60	0.08	9.0	9.4	1.01	762	481	1.38	1	0.035	13.1	12
3008	0.73	0.18	0.2	15.6	14	27.4	26.65	30	260	4.34	4.0	30	7.3	46	60	0.10	7.0	8.6	1.11	835	542	1.53	3	0.075	18.1	16
3009	0.68	0.07	0.2	9.1	8	33.3	18.04	21	230	3.36	2.3	26	6.1	13	20	0.09	6.9	6.4	0.76	373	217	1.12	2	0.035	14.6	11
3010	0.53	0.91	1	17.1	16	14.9	35.42	40	250	4.64	4.8	50	5.0	206	250	0.09	7.9	9.8	0.61	1381	1080	4.41	4	0.012	26.2	23
3011	0.55	0.07	0.2	15.1	13	22.2	28.69	29	180	4.98	4.2	46	6.5	169	950	0.05	6.8	6.6	0.75	810	510	0.73	2	0.016	10.4	9
3012	0.49	0.08	0.2	14.7	13	18.0	34.56	34	210	4.37	3.6	36	4.9	476	360	0.07	5.2	7.6	0.63	691	419	0.77	1	0.017	10.3	10
3013	0.89	0.23	0.2	14.1	11	27.7	30.37	31	200	4.10	3.4	52	8.0	94	80	0.08	7.8	8.1	1.01	773	455	1.31	1	0.035	19.3	15
3014	0.59	0.05	0.2	12.5	11	19.3	30.00	32	160	4.40	3.2	36	6.3	1861	220	0.11	5.0	8.8	0.79	692	408	0.65	2	0.032	8.5	7
3015	0.97	0.05	0.2	11.3	10	15.3	23.46	25	210	3.43	2.8	38	8.3	46	60	0.07	7.0	9.1	0.98	807	552	0.81	2	0.039	7.6	7
3016	0.42	0.08	0.2	12.4	12	28.8	12.80	20	160	4.22	3.2	34	6.5	45	60	0.05	9.3	7.2	0.82	833	534	0.89	1	0.017	12.7	13
3017	0.42	0.09	0.2	13.5	12	25.6	17.46	20	220	4.14	3.3	26	7.6	74	80	0.05	15.2	7.9	0.78	868	546	1.03	1	0.038	17.0	15
3018	0.36	0.09	0.2	12.7	10	19.7	17.69	18	210	4.25	2.8	26	6.6	2750	6720	0.07	19.2	7.1	0.55	890	498	1.31	2	0.035	16.6	12
3019	0.64	0.09	0.2	16.5	12	18.7	27.42	29	240	4.34	3.5	30	8.1	1423	26000	0.06	12.8	8.7	0.85	869	518	1.37	1	0.039	13.5	11
3020	1.33	0.23	0.2	12.2	10	16.8	43.79	44	200	3.96	2.7	36	8.0	266	320	0.06	9.1	6.1	0.77	610	350	1.64	2	0.024	8.9	8
3022	1.72	2.87	3.1	15.7	13	16.3	51.13	57	170	3.91	3.4	40	9.4	174	160	0.08	6.0	57.4	0.96	1212	795	7.34	6	0.036	23.7	23
3023	1.11	1.05	1.1	16.7	14	20.3	65.57	68	200	4.18	3.6	46	8.2	47	30	0.05	6.5	7.6	1.19	1029	639	2.15	2	0.069	19.5	16
3024	0.30	0.1	0.2	6.2	5	8.0	10.25	14	180	2.17	1.9	36	7.8	838	190	0.09	21.6	16.1	0.49	975	644	0.68	1	0.030	5.3	5
3025	0.69	0.06	0.7	19.4	16	39.4	26.56	27	160	4.46	3.4	30	7.8	42	60	0.04	10.8	7.5	1.63	960	480	0.53	1	0.083	37.5	29
3026	0.61	0.11	0.2	16.6	16	23.4	27.46	28	200	3.82	3.3	28	6.8	111	140	0.05	8.6	9.1	1.18	807	501	0.87	1	0.053	21.7	18
3027	0.44	0.06	0.2	12.3	10	23.6	25.14	25	170	3.89	2.7	26	6.2	358	460	0.08	15.2	7.8	0.61	768	416	0.65	1	0.028	14.2	11
3028	0.46	0.07	0.2	12.6	9	21.7	25.92	22	170	3.84	2.7	24	6.3	14756	240	0.09	14.8	7.2	0.65	768	413	0.67	1	0.029	13.7	10
3029	0.43	0.11	0.2	17.9	15	21.5	18.44	22	200	3.69	3.5	26	7.3	104	70	0.07	8.7	11.9	0.74	2308	1800	0.53	2	0.015	18.9	15
3030	0.48	0.11	0.2	20.0	17	31.4	40.28	43	180	4.69	3.9	28	7.0	240	80	0.07	11.4	8.3	1.01	951	564	0.71	1	0.017	34.0	28
3031	0.40	0.08	0.2	16.7	15	23.5	19.63	25	190	3.55	3.4	34	7.0	92	80	0.08	8.8	10.6	0.82	1520	1020	0.63	1	0.016	18.1	15
3032	0.43	0.11	0.2	17.0	16	31.5	25.54	32	160	3.42	3.3	48	6.7	82	60	0.08	9.5	10.1	0.79	1281	1000	0.62	1	0.016	23.0	21
3033	0.42	0.05	0.2	10.0	9	20.8	12.74	16	150	3.79	3.2	42	5.5	45	30	0.08	6.4	6.3	0.63	529	303	0.45	1	0.019	13.7	12
3034	0.61	0.09	0.2	12.8	12	21.0	21.26	23	150	3.33	3.1	44	6.0	50	60	0.06	8.1	7.0	0.75	883	538	0.62	2	0.028	16.5	14
3036	0.53	0.1	0.2	13.4	12	23.3	21.51	24	140	2.99	2.9	36	6.1	73	70	0.06	8.4	8.7	0.75	1180	795	0.54	1	0.026	21.5	20
3037	0.58	0.18	0.2	16.2	14	21.2	15.09	19	170	3.15	3.0	40	6.3	60	60	0.06	7.6	7.5	0.71	2241	1810	0.71	1	0.022	17.0	15
3038	0.49	0.06	0.2	10.1	9	22.4	14.83	19	160	2.81	2.7	34	5.8	40	30	0.08	7.5	6.1	0.66	583	367	0.37	1	0.027	14.8	14
3039	0.44	0.06	0.2	9.7	9	18.4	12.90	17	160	2.81	2.8	32	5.2	44	30	0.06	6.9	8.7	0.63	643	453	0.45	2	0.026	12.7	12
3040	0.55	0.28	0.3	12.9	11	19.1	10.86	14	140	3.54	3.2	34	5.6	55	60	0.05	5.7	9.5	0.66	1784	1440	1.13	1	0.029	10.4	10
3042	0.33	0.14	0.3	10.3	8	22.5	19.35	21	180	3.12	2.5	40	5.5	45	50	0.06	8.6	4.6	0.55	579	347	0.60	2	0.013	14.2	11
3043	0.31	0.11	0.2	11.8	10	14.4	11.18	14	130	2.65	2.5	38	5.2	57	50	0.05	6.1	6.6	0.51	1430	1160	0.89	2	0.020	7.2	6
3044	0.60	0.13	0.3	12.0	9	23.2	16.37	19	150	3.79	2.7	34	6.1	161	90	0.05	8.0	5.2	0.62	1615	1150	0.59	2	0.026	10.9	9
3045	0.45	0.13	0.2	26.7	21	34.2	37.80	39	170	5.26	5.1	-1	5.8	5876	150	0.06	5.8	10.8	0.59	1227	815	1.24	1	0.013	39.9	32
3046	0.39	0.09	0.2	15.0	13	19.0	10.19	15	110	2.62	2.5	24	5.3	45	40	0.04	3.9	7.9	0.72	1369	1040	0.55	2	0.019	11.4	11
3048	0.45	0.11	0.3	18.2	16	30.9	23.25	27	170	3.64	3.3	30	5.7	48	50	0.04	5.3	5.5	0.93	1218	825	0.49	1	0.017	20.3	18
3049	0.51	0.11	0.2	14.6	14	15.9	16.90	20	160	3.37	3.2	28	6.3	94	80	0.06	4.6	9.9	0.85	1898	1620	0.52	2	0.020	12.0	10
3050	0.40	0.18	0.2	15.1	13	17.4	13.76	17	130	2.66	2.8	38	6.0	152	100	0.05	7.3	10.1	0.59	2160	1780	0.61	2	0.014	12.9	11
3051	0.34	0.09	0.2	10.3	8	16.9	8.53	11	110	2.53	2.5	34	5.4	730	200	0.05	8.6	7.2	0.62	985	676	0.61	1	0.015	8.8	7
3052	0.33	0.11	0.3	12.4	11	24.5	13.98	17	170	2.82	2.7	32	6.4	312	390	0.07	9.4	7.1	0.81	882	573	0.63	1	0.026	15.8	14
3053	0.29	0.16	0.4	17.0	14	15.9	10.61	14	130	2.88	3.1	42	5.5	1514	8680	0.07	9.2	9.1	0.55	2793	2300	0.77	2	0.011	12.0	10
3054	0.63	0.16	0.2	13.2	11	22.2	27.95	30	240	3.60	3.0	44	5.9	431	390	0.08	14.4	3.9	0.70	622	385	0.85	1	0.018	17.2	14

ID	Ca	Cd	Cd	Co	Co	Cr	Cu	Cu	F	Fe	Fe	FW	Ga	Hg	Hg	K	La	LOI	Mg	Mn	Mn	Mo	Mo	Na	Ni	Ni
3055	0.67	0.21	0.3	11.4	9	26.1	17.78	22	160	4.13	3.4	40	5.9	82	80	0.08	12.6	6.0	0.68	553	336	0.86	1	0.015	15.5	12
3056	0.67	0.19	0.5	12.0	9	24.4	17.89	21	180	4.01	3.4	48	6.0	99	50	0.09	12.8	5.0	0.68	580	351	0.87	2	0.016	15.4	11
3057	0.49	0.1	0.3	10.2	8	20.8	14.69	17	150	3.66	2.9	44	5.6	59	60	0.07	10.4	5.5	0.64	579	342	0.51	1	0.017	11.4	10
3058	0.90	0.08	0.2	25.5	21	50.1	28.14	29	100	3.77	3.7	32	7.2	74	70	0.06	5.4	17.8	1.85	1277	1070	0.47	2	0.191	62.7	56
3059	0.86	0.04	0.3	25.6	22	44.3	33.90	33	100	3.89	3.2	30	5.6	20	20	0.06	5.1	7.5	2.04	844	520	0.28	1	0.162	71.0	66
3060	0.40	0.37	0.5	20.7	18	19.9	12.28	16	150	3.35	3.1	32	6.4	85	40	0.06	10.6	13.4	0.62	7492	6490	1.46	1	0.071	18.2	16
3062	0.56	0.17	0.2	21.9	19	19.9	13.99	18	170	4.66	5.2	36	10.2	170	100	0.05	9.9	25.6	0.85	3377	2920	1.20	2	0.040	10.8	9
3063	0.72	0.12	0.2	18.5	15	21.4	21.09	25	210	4.51	3.7	32	6.8	62	60	0.07	15.5	9.7	0.91	1134	708	0.97	1	0.050	13.0	10
3064	0.68	0.2	0.2	17.2	15	19.9	19.97	24	230	4.31	3.9	42	6.5	51	50	0.07	14.6	9.6	0.87	1076	693	0.99	2	0.047	12.1	10
3065	0.60	0.09	0.2	17.0	14	28.1	17.54	22	220	4.60	3.8	36	7.4	448	5720	0.06	11.6	8.6	0.91	1069	645	0.95	1	0.060	11.9	9
3066	0.58	0.07	0.2	17.3	14	31.5	15.58	18	200	4.23	3.4	34	8.1	49	60	0.06	9.5	10.2	0.90	1214	748	0.65	4	0.089	14.8	11
3067	0.57	0.15	0.2	20.7	19	29.1	14.43	18	230	5.39	4.9	30	8.4	146	120	0.06	13.1	14.2	0.82	1624	1200	1.08	2	0.054	12.9	11
3068	0.44	0.11	0.3	11.4	11	20.3	12.23	17	230	3.42	3.0	32	6.5	60	60	0.06	12.8	11.1	0.73	1258	960	1.08	2	0.051	10.6	10
3069	0.62	0.17	0.2	13.4	13	9.9	10.78	16	200	4.09	4.0	30	7.2	5790	500	0.09	17.2	16.4	0.50	2996	2400	1.43	1	0.013	6.9	6
3070	0.16	0.13	0.3	7.3	7	2.6	4.24	8	250	2.50	2.5	32	7.4	210	160	0.07	16.1	15.9	0.16	3318	2770	2.43	2	0.012	1.6	3
3071	0.22	0.1	0.2	8.4	7	4.0	8.06	12	250	2.40	2.6	34	5.2	274	260	0.08	16.0	16.2	0.18	2383	2150	1.64	3	0.030	2.8	3
3072	0.72	0.12	0.3	14.4	14	14.7	15.68	20	210	3.48	3.0	30	5.4	750	1000	0.10	12.3	10.4	0.55	1191	950	1.19	2	0.074	11.1	10
3073	0.23	0.09	0.2	13.7	13	9.2	17.07	20	240	3.50	3.7	30	8.7	154	180	0.07	10.4	11.0	0.54	1662	1370	1.69	1	0.011	7.5	7
3075	0.25	0.15	0.2	15.7	15	14.0	12.14	19	240	4.26	4.1	28	7.2	284	240	0.07	19.9	13.7	0.50	2376	1900	1.37	3	0.019	10.6	9
3076	0.51	0.12	0.2	15.2	14	18.6	17.14	21	170	3.74	3.3	30	6.2	242	170	0.09	14.3	9.7	0.61	1235	940	1.38	2	0.059	16.1	13
3077	0.66	0.12	0.2	15.4	15	17.6	18.62	26	200	4.01	3.8	34	6.3	497	470	0.08	15.9	9.7	0.68	1218	920	0.99	1	0.052	14.9	13
3078	0.65	0.09	0.2	12.1	11	19.2	13.40	18	210	4.20	2.9	34	6.7	8895	3240	0.09	15.2	6.0	0.63	1093	591	0.86	2	0.070	12.4	10
3079	0.43	0.13	0.2	13.1	13	20.3	21.88	27	210	3.00	3.0	40	6.2	69	80	0.10	12.4	8.6	0.76	1308	1080	0.56	2	0.016	20.1	17
3080	0.53	0.51	0.6	11.7	12	18.1	13.00	19	170	3.17	3.1	34	4.9	55	60	0.07	5.0	9.5	0.55	2006	1660	1.83	6	0.026	16.0	15
3082	0.55	0.23	0.3	12.1	12	20.9	9.39	14	130	3.56	3.4	36	6.7	72	60	0.08	6.3	8.8	0.72	1508	1190	1.90	4	0.029	11.4	10
3083	0.54	0.1	0.3	13.2	11	14.1	17.75	22	160	3.24	3.1	38	6.4	78	60	0.08	5.7	12.6	0.56	1426	1120	0.90	3	0.026	13.4	12
3084	0.51	0.06	0.2	12.1	11	34.8	14.41	19	160	3.26	3.0	36	6.1	67	70	0.07	9.0	8.6	0.73	684	457	0.39	2	0.031	15.6	14
3085	0.48	0.08	0.3	13.6	12	23.1	27.46	30	180	2.20	2.1	32	5.2	98	100	0.10	7.8	5.8	0.77	767	470	0.28	4	0.049	17.1	13
3086	0.60	0.21	0.3	14.1	12	22.4	23.64	29	180	4.98	4.3	34	6.0	6741	910	0.08	10.2	7.1	0.73	773	472	1.47	3	0.022	16.0	12
3087	1.23	0.05	0.2	9.6	10	23.8	16.27	22	170	2.49	2.5	32	8.5	84	100	0.08	8.3	9.6	0.72	722	536	0.33	3	0.022	10.8	10
3088	0.48	0.04	0.2	8.6	8	21.0	12.19	16	160	3.32	3.0	36	5.8	77	80	0.10	7.9	8.0	0.61	531	328	0.47	2	0.023	11.1	10
3089	0.57	0.17	0.2	12.0	11	19.8	22.71	27	170	3.51	3.2	34	6.4	240	210	0.09	9.0	7.9	0.73	813	519	1.06	3	0.025	16.2	14
3090	0.82	0.33	0.3	14.5	14	13.3	21.77	26	190	3.88	3.3	40	4.8	64	70	0.10	7.1	12.4	0.50	1437	1100	2.36	2	0.030	12.4	11
3091	0.63	2.11	2.7	16.3	16	30.4	25.82	28	180	4.04	3.8	28	7.8	91	80	0.08	7.0	14.5	0.91	2449	2120	10.08	10	0.031	35.7	31
3092	0.49	0.13	0.3	9.8	9	20.6	11.91	16	130	3.51	2.8	26	6.1	39	40	0.10	4.9	8.4	0.62	636	392	0.70	2	0.025	10.1	8
3093	0.46	0.13	0.2	9.4	8	20.8	11.48	15	160	3.40	2.7	30	6.0	44	40	0.10	5.2	7.2	0.57	540	330	0.76	2	0.026	9.7	8
3094	0.27	0.04	0.2	12.1	11	17.4	10.34	14	130	3.43	3.1	22	6.5	52	60	0.08	5.1	7.4	0.63	1039	691	0.37	1	0.014	12.0	10
3095	0.88	0.6	0.7	16.6	16	13.5	11.86	17	160	4.20	4.8	24	5.6	94	80	0.07	5.8	18.5	0.54	6473	6230	2.18	4	0.021	11.7	10
3096	1.14	0.67	0.9	18.2	17	16.4	19.24	24	90	4.05	3.6	26	8.7	70	60	0.07	5.9	13.1	0.99	4585	4100	2.37	3	0.047	13.4	11
3099	0.59	0.18	0.3	15.6	14	14.2	21.92	26	110	4.27	3.6	24	6.1	85	70	0.06	5.5	9.7	0.72	1241	930	0.98	2	0.025	12.8	10
3100	0.56	0.05	0.2	9.7	10	18.8	10.86	15	140	3.51	2.9	34	5.8	143	130	0.10	7.8	9.4	0.68	718	463	0.61	3	0.027	9.4	7
3102	0.44	0.06	0.2	10.9	11	21.7	15.91	20	170	3.44	3.0	34	5.7	138	210	0.08	8.3	8.5	0.78	731	466	0.58	4	0.017	14.9	14
3103	0.66	0.63	1	14.8	15	14.2	26.16	30	220	3.88	3.6	38	4.8	492	9760	0.10	6.8	11.3	0.44	951	672	3.88	3	0.016	21.3	19
3104	0.56	0.19	0.3	13.8	13	17.4	24.91	28	220	4.90	4.1	48	5.6	136	150	0.07	9.8	7.5	0.61	759	469	1.73	4	0.019	14.0	13
3105	0.38	0.56	0.7	11.2	11	12.4	17.87	21	200	3.82	3.5	38	6.0	72	80	0.06	10.1	9.9	0.59	1524	1180	3.08	4	0.018	13.2	11
3106	0.42	0.34	0.5	12.4	12	19.5	20.17	24	240	4.27	3.7	36	5.8	687	180	0.06	10.6	9.1	0.64	1017	782	2.65	5	0.015	14.5	12
3107	0.42	0.33	0.5	11.4	12	19.2	19.78	23	240	4.27	3.8	34	5.5	1044	210	0.06	10.0	8.6	0.63	943	711	2.56	4	0.016	13.7	13
3108	0.26	0.02	0.2	3.2	3	10.8	3.99	8	160	1.10	1.0	36	3.0	22	10	0.05	7.8	5.0	0.33	175	82	0.29	1	0.017	5.0	2
3109	0.39	0.05	0.2	12.0	11	21.4	12.32	15	110	3.88	3.1	26	6.2	73	60	0.06	5.7	8.9	0.61	864	673	0.61	1	0.032	8.1	6
3110	0.58	0.08	0.2	14.3	12	36.9	28.64	30	120	5.00	3.5	24	6.2	4395	6600	0.05	6.2	4.0	0.71	643	366	0.70	3	0.034	12.3	10
3111	0.63	0.31	0.5	18.3	15	15.0	75.59	80	180	5.13	4.0	24	5.6	100	130	0.09	7.3	6.6	1.00	1738	1260	1.24	2	0.026	9.4	7
3113	0.31	0.06	0.2	12.6	10	23.5	10.07	12	100	5.82	3.9	24	6.2	45	30	0.12	7.5	10.0	0.50	677	420	0.56	2	0.014	10.9	7

ID	Ca	Cd	Cd	Co	Co	Cr	Cu	Cu	F	Fe	Fe	FW	Ga	Hg	Hg	K	La	LOI	Mg	Mn	Mn	Mo	Mo	Na	Ni	Ni
3114	0.80	0.32	0.4	13.5	12	20.3	20.40	21	160	4.26	3.3	30	6.1	52	20	0.09	6.9	12.1	0.81	1142	732	1.47	3	0.025	15.1	12
3115	0.54	0.41	0.7	9.0	9	9.8	18.97	22	140	2.57	2.2	32	3.8	97	50	0.09	6.3	10.0	0.42	920	617	2.06	2	0.019	10.8	9
3116	0.64	0.17	0.2	9.8	10	19.1	11.31	15	110	2.51	2.2	28	5.6	78	70	0.06	5.5	9.2	0.69	885	614	0.74	2	0.041	13.2	12
3117	0.56	0.15	0.3	11.1	11	15.1	11.13	17	130	2.52	2.4	28	5.4	188	160	0.05	5.8	12.4	0.62	1433	1210	0.67	2	0.038	8.7	7
3118	0.41	0.11	0.2	11.0	10	16.1	15.63	17	220	2.98	2.7	24	5.9	78	70	0.09	11.7	8.4	0.61	1112	836	1.04	2	0.032	11.4	8
3119	0.53	0.11	0.3	13.6	13	14.3	23.76	25	210	2.78	2.2	34	4.5	71	70	0.16	15.1	9.8	0.53	932	648	1.04	1	0.091	12.0	10
3120	0.48	0.13	0.2	15.4	13	18.0	17.27	18	230	3.71	2.9	28	6.3	269	8040	0.06	14.4	11.8	0.53	1317	1050	0.72	1	0.039	11.7	9
3122	0.56	0.08	0.2	16.4	14	7.9	13.86	18	170	3.46	3.1	26	6.7	74	60	0.07	8.1	15.8	0.45	2598	2210	0.41	1	0.048	5.1	3
3123	0.48	0.11	0.2	11.6	11	17.5	17.01	19	160	3.75	2.9	26	5.6	327	2520	0.06	16.4	5.8	0.49	964	574	1.26	1	0.044	11.4	9
3124	0.50	0.1	0.2	12.7	10	18.8	17.81	19	210	4.00	3.0	22	5.9	240	220	0.07	17.5	6.0	0.52	1046	587	1.43	2	0.043	12.7	8
3125	0.83	0.08	0.2	19.1	16	26.9	21.70	26	220	4.52	3.4	26	6.2	3760	210	0.07	15.1	8.4	0.96	1197	776	0.71	2	0.057	17.0	14
3126	0.63	0.13	0.3	12.2	11	24.8	25.16	27	200	3.02	2.5	28	6.3	270	220	0.07	11.5	5.5	0.83	795	528	0.69	2	0.018	15.7	13
3128	0.81	0.3	0.4	20.2	21	19.6	14.12	21	180	3.11	3.9	32	6.8	294	250	0.06	9.3	18.6	0.69	5625	5620	1.34	2	0.016	13.1	13
3129	0.98	0.22	0.3	13.4	12	23.9	22.86	27	210	3.76	3.4	30	6.6	107	100	0.07	6.7	10.8	0.96	962	643	1.21	1	0.033	21.4	21
3130	0.78	0.06	0.2	12.9	12	14.1	30.79	32	180	4.55	4.1	28	6.9	148	140	0.06	7.0	9.2	0.92	618	390	0.91	2	0.020	11.4	10
3131	1.45	0.13	0.3	17.9	16	16.7	29.06	32	160	4.08	3.6	30	7.3	82	90	0.09	7.8	9.9	0.86	817	535	1.53	4	0.052	16.7	16
3132	1.44	0.11	0.2	24.8	24	44.7	47.17	50	140	3.67	3.7	26	7.4	75	60	0.04	4.0	13.3	1.95	654	477	0.62	2	0.049	78.0	77
3133	1.15	0.14	0.2	14.9	15	16.1	36.79	41	130	3.97	3.8	36	7.5	890	100	0.06	7.0	12.2	0.77	806	562	0.73	1	0.017	14.4	15
3134	1.04	0.87	1	15.4	15	27.6	48.07	52	200	4.05	4.0	32	8.5	142	180	0.07	7.3	8.4	0.99	665	450	1.94	3	0.028	25.1	25
3135	1.42	0.35	0.6	28.1	28	68.0	165.88	187	140	5.24	5.7	30	12.3	8262	470	0.02	4.2	9.9	1.58	1110	940	0.90	2	0.014	47.0	47
3136	1.44	0.66	0.7	21.1	20	42.2	70.80	75	130	4.52	4.4	50	10.2	1653	150	0.05	5.2	9.2	1.33	1001	709	1.49	4	0.025	41.5	42
3137	1.33	0.94	1	23.9	23	49.6	69.75	76	110	4.18	4.3	24	8.8	145	70	0.04	4.9	12.8	1.45	1300	1100	3.34	5	0.025	68.0	67
3138	1.38	0.33	0.3	26.1	26	51.8	62.64	65	110	4.63	5.8	22	10.3	183	170	0.04	4.4	19.7	1.00	1626	1530	1.17	3	0.014	44.2	44
3139	0.81	1.03	1.2	14.0	14	45.7	43.70	49	230	3.76	3.6	30	5.9	650	310	0.06	6.8	6.5	0.94	633	453	2.87	4	0.019	39.6	40
3140	0.72	0.37	0.5	12.0	12	25.7	28.67	34	190	4.07	3.9	48	6.3	135	140	0.07	7.4	8.8	0.79	671	465	2.42	2	0.019	20.2	20
3142	0.67	0.1	0.2	12.8	11	21.9	17.41	23	170	4.10	3.6	42	6.0	222	300	0.07	9.7	7.4	0.64	710	457	1.08	1	0.020	13.1	12
3143	0.43	0.12	0.3	13.2	13	19.8	17.20	22	140	2.48	2.4	38	5.7	95	80	0.06	8.1	9.0	0.58	1694	1390	0.50	2	0.015	14.2	13
3144	0.59	0.1	0.2	11.0	10	23.0	23.49	26	180	3.62	3.1	46	6.4	3457	100	0.06	10.6	6.8	0.69	625	401	0.74	2	0.019	13.5	14
3145	0.40	0.17	0.3	15.3	13	20.8	27.55	31	160	3.38	3.0	44	6.1	1314	820	0.08	10.2	7.2	0.62	1129	763	0.77	1	0.014	16.5	14
3146	0.47	0.13	0.2	9.5	8	25.1	12.24	16	120	3.88	2.8	40	6.2	62	60	0.08	12.4	5.6	0.58	570	345	0.57	2	0.015	11.7	10
3147	0.35	0.16	0.3	8.1	7	19.0	12.57	15	90	2.62	2.2	50	5.3	54	50	0.05	8.2	5.0	0.49	521	309	0.57	1	0.014	11.1	9
3148	0.43	0.12	0.2	9.9	9	20.5	14.47	19	130	3.55	3.0	52	6.2	82	90	0.07	9.9	5.9	0.60	559	356	0.53	2	0.012	11.4	10
3149	0.44	0.13	0.2	11.3	10	24.5	15.25	18	120	3.85	2.8	42	7.1	73	80	0.05	10.7	7.1	0.58	684	433	0.71	2	0.015	12.5	10
3150	0.48	0.15	0.2	11.9	9	24.4	16.41	19	120	3.88	2.8	44	7.1	101	90	0.05	10.1	6.9	0.60	906	560	0.74	2	0.016	12.5	9
3151	0.58	0.14	0.3	13.1	10	28.1	20.74	20	150	5.03	3.2	56	7.3	68	50	0.08	12.9	4.2	0.53	621	325	0.61	1	0.014	12.8	10
3152	0.63	0.3	0.4	10.7	10	16.4	14.80	19	130	3.30	3.0	42	5.7	118	120	0.07	7.6	6.5	0.65	1114	716	1.14	3	0.018	12.0	10
3153	1.13	0.59	0.8	26.5	24	95.0	48.27	52	110	4.13	4.4	28	7.8	195	170	0.05	4.9	15.7	1.76	1471	1300	2.13	4	0.020	90.1	86
3154	1.79	0.31	0.4	19.0	17	36.6	55.90	62	90	4.16	4.2	82	8.4	67	60	0.03	5.7	12.8	0.95	1180	1120	1.07	3	0.019	32.6	31
3155	1.73	0.34	0.5	20.9	18	45.0	78.14	79	130	4.39	3.8	28	9.9	544	90	0.03	5.4	5.1	1.33	652	428	0.84	2	0.018	41.5	39
3156	1.40	0.25	0.3	19.8	16	10.8	29.31	32	170	6.10	6.2	46	4.4	669	740	0.08	6.9	10.4	0.90	964	648	3.99	6	0.016	15.6	13
3157	0.71	0.16	0.2	14.3	13	16.2	30.71	32	160	4.23	3.5	-1	6.3	140	140	0.08	6.2	10.9	0.72	662	442	1.09	2	0.018	14.9	12
3158	0.45	0.26	0.4	16.9	14	27.5	38.83	43	190	5.20	3.6	54	6.6	4523	1980	0.07	12.7	5.3	0.51	849	531	0.90	2	0.012	19.4	17
3160	0.67	0.64	0.8	11.3	10	30.0	20.34	22	180	3.11	2.5	52	6.0	77	4160	0.07	9.0	7.8	0.85	584	378	1.98	3	0.019	28.1	27
3162	0.23	0.04	0.3	3.4	3	15.6	4.37	9	160	1.37	0.9	48	3.8	29	30	0.17	7.2	6.3	0.38	192	97	0.55	4	0.012	4.8	4
3164	0.20	0.03	0.2	6.0	5	12.0	4.34	7	150	1.79	1.6	52	5.3	115	80	0.06	8.1	8.4	0.36	338	204	0.46	2	0.021	7.2	6
3165	0.09	0.02	0.2	2.8	2	8.9	2.87	5	110	0.97	0.9	40	4.7	79	30	0.04	4.3	8.4	0.17	145	600	0.34	1	0.017	4.3	3
3166	0.28	0.14	0.2	17.1	15	16.9	12.17	15	170	4.09	3.7	34	8.4	139	130	0.07	11.9	11.1	0.53	1958	1500	0.91	1	0.017	10.8	9
3167	0.48	0.06	0.2	14.4	13	13.0	14.94	16	160	3.68	2.9	32	5.8	90	190	0.05	8.7	10.2	0.46	1529	1170	0.52	2	0.043	9.4	8
3168	0.50	0.07	0.2	14.9	12	13.6	15.38	16	170	3.78	3.4	34	6.1	88	90	0.05	9.2	11.6	0.48	1634	1210	0.55	1	0.043	10.0	9
3169	0.34	0.06	0.2	14.1	13	9.4	5.93	9	130	2.59	2.4	26	6.3	76	90	0.05	6.5	13.2	0.37	2204	1860	0.55	2	0.036	5.9	4
3170	0.81	0.08	0.2	17.1	15	26.1	17.90	21	160	3.82	3.3	26	6.7	2802	6400	0.08	11.0	11.8	0.96	2251	1940	0.60	1	0.077	19.5	18
3171	0.32	0.06	0.2	9.0	8	15.3	7.43	10	120	2.84	2.3	32	5.9	1831	1220	0.06	8.1	10.4	0.38	1133	795	0.84	3	0.035	9.2	7

ID	Ca	Cd	Cd	Co	Co	Cr	Cu	Cu	F	Fe	Fe	FW	Ga	Hg	Hg	K	La	LOI	Mg	Mn	Mn	Mo	Mo	Na	Ni	Ni
3172	0.09	0.09	0.2	5.8	5	3.3	8.33	11	160	2.72	2.5	24	3.5	615	510	0.09	17.4	9.4	0.19	742	497	3.15	3	0.009	3.3	3
3173	0.19	0.15	0.4	4.8	5	6.0	5.51	9	320	2.93	2.4	24	5.1	15364	590	0.10	19.4	7.6	0.22	890	518	3.14	4	0.022	3.4	2
3174	0.64	0.1	0.2	18.4	15	23.1	21.25	22	220	5.57	4.4	26	10.2	181	190	0.08	13.5	7.6	0.83	1653	1040	1.41	1	0.027	13.5	12
3175	0.24	0.16	0.2	8.6	8	7.0	8.53	11	190	3.06	3.0	24	7.3	198	210	0.10	17.7	14.9	0.31	1570	1220	2.81	2	0.018	6.0	5
3176	0.40	0.1	0.2	11.7	11	17.3	7.18	12	300	3.74	4.0	26	7.5	57	50	0.04	10.2	11.8	0.64	1637	1380	1.38	1	0.019	8.9	8
3177	0.45	0.08	0.2	14.0	12	27.3	14.00	16	220	4.04	3.3	22	9.5	104	80	0.06	14.0	6.5	1.04	1136	641	0.98	3	0.031	15.2	13
3178	0.38	0.08	0.2	14.4	13	18.4	18.94	27	240	4.11	3.7	20	7.7	288	240	0.07	10.0	9.4	0.77	951	594	1.18	2	0.027	11.7	11
3179	0.67	0.11	0.2	18.1	17	29.0	15.25	19	180	4.08	4.1	20	9.1	409	340	0.06	11.3	14.2	0.91	2374	1950	1.66	3	0.054	15.8	15
3180	0.47	0.11	0.2	11.7	10	18.8	9.02	16	200	3.63	3.0	20	9.6	100	80	0.07	10.4	13.3	0.64	1118	727	1.27	2	0.032	8.9	8
3182	0.45	0.08	0.2	14.1	13	18.3	12.46	16	210	3.92	4.1	26	9.4	120	130	0.06	12.3	13.7	0.88	2074	1760	1.08	2	0.033	13.6	12
3183	0.34	0.08	0.3	13.0	12	11.8	7.98	12	200	2.23	2.3	42	8.1	110	90	0.02	6.1	13.4	0.46	1407	1190	0.71	3	0.010	6.3	6
3184	0.17	0.08	0.2	11.8	12	13.8	6.68	11	170	2.46	3.0	38	6.7	71	60	0.03	8.8	12.9	0.52	1205	1010	1.28	3	0.009	7.2	8
3185	0.20	0.09	0.2	13.2	11	15.7	7.32	12	160	2.83	2.9	32	7.6	78	60	0.03	9.9	13.7	0.59	1473	1110	1.52	2	0.011	8.3	7
3186	0.26	0.19	0.3	7.8	8	10.5	7.65	10	190	2.32	2.3	34	6.7	85	80	0.03	8.3	8.7	0.48	1106	744	1.55	4	0.010	7.3	6
3187	0.47	0.2	0.2	16.6	15	24.3	24.01	27	90	4.35	3.6	20	7.0	306	160	0.06	3.4	8.5	0.85	1541	1160	0.69	2	0.034	9.3	8
3188	0.32	0.1	0.3	15.5	15	14.9	9.95	13	110	3.21	3.0	22	6.5	19101	70	0.06	3.4	9.3	0.79	1618	1310	0.65	2	0.027	8.2	7
3189	0.38	0.09	0.2	21.0	19	21.4	22.53	26	100	4.75	4.7	22	7.4	104	110	0.05	2.9	11.7	0.84	2072	1660	0.65	1	0.031	9.7	8
3190	0.48	0.12	0.2	16.9	15	19.2	22.49	27	90	4.27	4.1	32	6.8	341	140	0.05	3.6	9.4	0.86	1452	1140	0.89	3	0.036	10.4	9
3192	0.48	0.08	0.2	9.8	9	20.2	17.32	21	130	3.14	2.4	32	6.0	45	20	0.12	4.9	7.4	0.77	432	245	1.38	1	0.054	11.1	9
3193	0.41	0.08	0.2	7.2	7	25.4	12.93	16	130	3.82	1.7	28	4.5	33	10	0.04	5.1	5.9	0.53	277	131	1.32	3	0.018	9.3	7
3194	0.83	0.07	0.2	12.2	10	20.4	27.92	29	120	2.85	3.0	26	8.0	81	40	0.12	4.2	19.3	0.97	400	263	0.68	4	0.105	12.1	11
3195	0.63	0.08	0.2	11.6	11	15.1	12.56	17	120	2.52	2.6	24	8.9	64	2080	0.03	4.0	12.2	0.88	550	372	0.78	3	0.025	11.4	10
3196	0.86	0.08	0.2	14.6	13	33.9	20.21	23	100	2.88	3.1	40	11.8	83	70	0.05	5.2	24.5	1.15	720	540	0.61	2	0.044	14.2	12
3197	0.71	0.11	0.3	13.4	13	29.1	22.32	25	170	3.03	3.0	34	8.2	58	50	0.08	6.6	15.0	1.01	630	469	1.31	4	0.054	14.1	13
3198	1.39	0.06	0.2	21.5	20	68.4	31.27	35	90	3.55	3.1	24	10.4	538	260	0.08	6.0	13.7	1.71	933	665	0.26	1	0.043	30.3	28
3199	1.47	0.43	0.7	20.7	19	60.1	27.66	30	80	3.50	2.9	24	10.7	612	5120	0.09	5.6	13.7	1.52	921	629	0.28	1	0.039	25.9	24
3200	1.25	0.03	0.2	18.2	17	53.4	27.68	31	80	3.30	3.1	20	10.5	10258	24800	0.06	6.5	13.4	1.28	710	497	0.28	2	0.042	22.3	22
3202	0.47	0.08	0.3	20.6	18	42.1	42.74	44	210	4.00	3.4	20	6.7	12980	4720	0.07	7.1	5.8	1.34	790	503	0.68	1	0.008	22.8	20
3203	1.21	0.07	0.2	16.9	16	58.9	26.40	30	110	3.20	3.4	20	11.2	79	90	0.06	6.8	15.8	1.27	784	592	0.42	2	0.044	22.8	23
3204	0.77	0.09	0.3	17.2	17	42.1	20.34	24	120	3.43	3.8	26	9.4	64	50	0.06	6.1	14.0	1.34	881	659	0.76	2	0.032	17.0	18
3205	1.08	0.06	0.3	16.8	15	30.1	37.72	37	110	4.49	4.0	30	8.9	69	60	0.08	8.2	10.4	1.11	823	497	0.59	1	0.036	17.1	16
3206	0.62	0.13	0.2	11.8	11	20.4	28.31	31	180	3.24	2.9	20	6.2	291	440	0.08	12.9	6.7	0.77	644	411	0.71	1	0.018	15.6	14
3207	0.40	0.13	0.2	23.3	22	32.1	52.42	51	130	4.72	5.4	20	8.9	67	50	0.05	6.6	16.2	1.24	1101	750	0.65	1	0.028	25.1	22
3208	1.14	0.08	0.2	21.3	19	52.0	29.26	31	120	4.00	3.6	20	9.4	91	100	0.06	7.5	13.8	1.43	890	600	0.73	1	0.037	24.1	23
3209	0.71	0.08	0.2	13.6	13	29.4	29.28	30	100	3.35	3.1	20	6.6	469	200	0.08	9.3	8.4	0.85	644	422	0.54	2	0.037	18.0	16
3210	0.47	0.08	0.2	15.2	15	26.8	30.90	30	120	3.76	3.4	20	6.9	46	50	0.06	5.7	10.2	0.86	533	346	0.67	1	0.035	20.5	19
3212	0.49	0.09	0.2	16.1	14	28.2	29.47	29	140	3.94	3.5	20	7.1	48	50	0.06	6.0	10.3	0.89	565	369	0.71	3	0.034	20.8	19
3213	0.64	0.06	0.2	12.3	11	24.6	20.06	22	220	3.57	3.3	24	5.5	154	140	0.07	10.0	9.3	0.73	623	415	0.77	1	0.022	16.3	15
3214	0.40	0.1	0.2	13.5	12	30.2	19.07	20	170	3.64	3.9	30	6.8	74	70	0.08	7.6	14.2	1.00	926	668	1.25	2	0.037	15.5	14
3215	0.34	0.1	0.2	11.3	12	16.0	18.40	21	140	2.82	3.1	20	6.8	58	50	0.10	6.2	13.3	0.75	821	646	1.25	1	0.032	11.8	12
3216	0.29	0.1	0.2	14.4	13	18.2	17.44	19	130	3.11	3.0	22	6.0	52	50	0.05	6.8	12.8	0.59	638	447	0.97	2	0.017	16.9	15
3217	0.42	0.1	0.2	17.4	15	28.3	24.93	26	80	3.84	3.5	24	6.6	79	60	0.05	8.3	7.60	0.92	782	508	0.41	1	0.04	26.4	22

ID	P	Pb	Pb	pH	S	Sb	Sb	Sc	Se	SO4	Sr	Te	Th	Ti	Tl	U	UW	V	V	W	Zn	Zn
	0.001	0.01	2		0.02	0.02	0.2	0.1	0.1	1	0.5	0.02	0.1	0.001	0.02	0.1	0.05	2	5	0.1	0.1	2
	%	ppm	ppm		%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
	ICPMS	ICPMS	AAS	ELE	ICPMS	ICPMS	AAS	ICPMS	ICPMS	TUB	ICPMS	ICPMS	ICPMS	ICPMS	ICPMS	ICPMS	FLU	ICPMS	AAS	ICPMS	ICPMS	AAS
3002	0.072	6.75	6	6.8	0.15	0.75	1.1	6.2	1.2	4	58.5	0.04	1.3	0.010	0.23	0.5	0.06	78	76	-0.1	100.8	102
3003	0.050	5.69	5	6.9	0.08	0.20	0.3	6.6	0.5	3	74.2	0.05	1.2	0.020	0.07	0.3	0.05	85	72	-0.1	75.5	75
3004	0.082	4.90	4	7.4	0.18	0.73	1.0	7.3	1.6	10	114.4	0.04	0.6	0.112	0.31	0.4	0.05	121	123	-0.1	128.6	124
3005	0.061	5.83	5	7.2	0.07	0.34	0.4	6.9	0.5	7	94.4	0.04	1.2	0.148	0.09	0.4	0.05	92	96	-0.1	74.7	72
3006	0.056	5.63	4	7.3	0.04	0.33	0.5	6.2	0.6	6	94.9	0.04	1.0	0.141	0.09	0.4	0.05	89	103	-0.1	73.0	73
3008	0.081	7.43	7	7.2	0.09	0.81	1.0	4.5	0.9	4	52.1	0.05	0.8	0.069	0.06	0.2	0.05	74	83	-0.1	82.2	85
3009	0.070	6.59	6	7.1	0.01	0.62	0.8	2.2	0.3	2	28.0	0.02	2.0	0.084	0.04	0.9	0.05	119	80	0.3	49.9	46
3010	0.079	6.17	3	7.9	0.15	1.87	2.8	6.3	2.0	21	30.1	0.05	0.6	0.002	0.26	0.2	0.17	62	64	-0.1	129.9	133
3011	0.056	5.51	5	7.8	0.15	2.78	3.4	5.4	0.1	4	30.9	0.03	0.8	0.060	0.04	0.3	0.05	136	105	-0.1	85.7	78
3012	0.060	5.58	5	7.6	0.26	1.77	2.4	5.5	0.4	5	50.3	0.08	0.8	0.015	0.07	0.2	0.05	110	81	-0.1	71.8	66
3013	0.084	5.38	4	7.6	0.09	0.44	0.6	6.3	0.3	5	93.1	0.02	1.0	0.086	0.11	0.5	0.05	126	109	-0.1	82.3	75
3014	0.057	3.88	2	7.5	0.21	0.73	1.0	5.9	0.3	6	186.2	0.07	0.6	0.009	0.17	0.1	0.05	113	86	-0.1	80.7	76
3015	0.074	6.00	4	7.5	0.14	0.20	0.2	6.0	0.2	2	75.2	0.02	1.1	0.173	0.04	0.7	0.05	108	108	-0.1	55.9	57
3016	0.056	5.37	4	7.3	0.04	0.44	0.6	3.9	0.4	5	23.4	0.03	1.3	0.099	0.03	0.3	0.05	112	97	-0.1	80.0	78
3017	0.062	6.89	5	7.3	0.02	0.40	0.5	3.5	-0.1	4	27.7	-0.02	1.9	0.105	0.03	0.3	0.05	112	98	-0.1	109.1	101
3018	0.055	7.70	5	7.2	0.03	0.35	0.4	3.1	0.1	2	24.9	-0.02	2.3	0.143	0.04	0.5	0.05	132	91	-0.1	145.3	100
3019	0.068	6.38	4	7.3	0.08	0.50	0.6	4.0	0.5	3	44.7	0.04	1.4	0.120	0.04	0.3	0.05	112	83	-0.1	94.5	82
3020	0.092	4.44	2	7.8	0.24	0.70	1.1	4.2	0.8	10	101.0	0.05	1.4	0.073	0.1	0.5	0.05	116	68	-0.1	58.9	69
3022	0.084	5.07	4	7.4	0.08	1.46	2.1	5.7	4.1	13	122.4	0.71	0.5	0.106	0.38	0.5	0.05	126	110	0.1	237.6	254
3023	0.079	11.14	7	7.4	0.06	0.56	0.9	6.2	1.6	12	117.1	0.06	0.5	0.098	0.08	0.3	0.05	108	90	-0.1	142.1	136
3024	0.039	11.56	9	7.7	0.03	0.34	0.5	1.9	0.6	2	29.9	-0.02	1.5	0.062	0.05	0.6	0.05	43	33	-0.1	88.6	72
3025	0.079	3.43	2	7.4	0.01	0.18	0.2	4.7	0.3	2	59.1	-0.02	0.9	0.211	0.02	0.3	0.05	155	97	-0.1	108.6	77
3026	0.048	4.18	3	7.2	0.21	0.22	0.2	4.2	0.8	3	46.4	0.04	0.9	0.101	0.03	0.2	0.05	90	71	-0.1	69.4	64
3027	0.058	9.79	7	7.2	0.03	0.62	0.8	2.8	0.2	3	33.2	0.02	2.8	0.074	0.04	0.7	0.05	100	56	-0.1	80.0	70
3028	0.059	10.03	7	7.1	0.03	0.59	0.8	2.9	0.1	2	34.8	-0.02	2.5	0.066	0.04	0.7	0.05	94	55	-0.1	83.0	61
3029	0.073	8.94	6	7.0	0.03	0.31	0.4	3.2	0.4	5	37.5	0.03	1.5	0.012	0.07	0.4	0.05	55	46	-0.1	93.4	87
3030	0.080	14.34	10	7.1	0.16	0.76	1.0	4.1	0.5	2	23.8	0.06	2.4	0.017	0.05	0.5	0.05	68	53	-0.1	106.8	98
3031	0.062	9.85	6	7.2	0.04	0.45	0.5	3.1	0.5	4	39.2	0.04	1.9	0.015	0.05	0.4	0.05	58	50	-0.1	82.2	81
3032	0.067	11.94	8	6.9	0.01	0.47	0.4	3.5	0.3	6	47.9	0.04	1.6	0.025	0.06	0.3	0.05	60	54	-0.1	109.8	108
3033	0.040	6.14	5	7.3	0.02	0.22	0.3	4.1	0.2	5	48.1	0.02	1.2	0.019	0.04	0.2	0.05	64	52	-0.1	71.0	70
3034	0.062	6.14	4	7.9	0.12	0.36	0.4	4.7	0.4	4	63.5	0.03	1.2	0.057	0.05	0.3	0.05	73	59	-0.1	69.4	68
3036	0.065	8.44	5	7.1	0.03	0.41	0.6	3.1	0.8	3	37.9	0.03	1.4	0.019	0.05	0.3	0.05	58	48	-0.1	78.0	75
3037	0.053	5.95	5	7.7	0.03	0.25	0.4	3.8	0.4	3	53.8	0.02	1.4	0.035	0.08	0.3	0.05	62	59	-0.1	87.7	89
3038	0.048	5.31	3	7.5	0.02	0.20	0.3	3.4	0.5	3	67.3	0.02	1.2	0.027	0.04	0.3	0.05	63	55	-0.1	67.8	70
3039	0.047	4.25	3	7.4	0.03	0.17	0.2	3.4	0.3	3	51.8	0.03	1.0	0.025	0.04	0.2	0.05	61	58	-0.1	66.9	71
3040	0.056	3.89	2	7.5	0.06	0.25	0.3	4.2	0.6	4	88.7	0.03	0.7	0.084	0.1	0.3	0.05	109	87	-0.1	88.3	88
3042	0.056	6.56	4	7.4	0.03	0.42	0.4	3.0	0.4	6	21.3	0.03	2.8	0.061	0.05	0.5	0.05	86	63	-0.1	63.1	61
3043	0.031	4.93	3	7.4	0.02	0.29	0.2	2.7	0.3	5	29.0	0.04	1.0	0.081	0.04	0.3	0.05	83	71	-0.1	50.5	56
3044	0.052	4.35	2	7.5	0.06	0.30	0.2	3.9	0.2	3	44.9	0.03	1.3	0.147	0.05	0.4	0.05	143	94	-0.1	84.3	68
3045	0.079	6.51	4	-1.0	0.22	0.57	0.8	6.8	0.7	-1	31.3	0.04	0.8	-0.001	0.07	0.2	-1	82	69	-0.1	81.5	81
3046	0.041	3.26	2	7.3	0.03	0.23	0.2	2.9	0.4	3	18.7	-0.02	0.5	0.063	0.03	0.2	0.05	71	68	-0.1	53.1	53
3048	0.061	3.63	2	6.9	0.03	1.26	1.5	4.8	0.4	4	20.3	0.05	0.7	0.055	0.03	0.2	0.06	97	88	-0.1	58.1	60
3049	0.042	3.37	2	6.9	0.04	0.17	0.2	4.1	0.3	3	23.1	0.02	0.4	0.062	0.05	0.2	0.05	100	85	-0.1	66.8	65
3050	0.041	6.06	3	7.0	0.02	0.26	0.3	2.7	0.5	5	27.9	0.02	0.9	0.038	0.06	0.3	0.05	63	64	-0.1	78.4	83
3051	0.036	4.60	3	7.0	0.02	0.51	0.4	2.9	0.2	4	33.9	-0.02	2.5	0.067	0.06	0.5	0.05	64	59	-0.1	56.5	55
3052	0.044	6.99	4	6.9	0.02	0.98	1.1	3.4	0.4	3	26.3	0.03	2.3	0.061	0.06	0.7	0.05	66	66	-0.1	63.6	64
3053	0.053	6.53	3	6.9	0.03	0.90	1.2	2.4	0.4	3	26.1	0.02	1.3	0.009	0.11	0.3	0.05	53	51	-0.1	72.8	74
3054	0.095	9.25	6	6.9	0.09	1.31	1.4	4.2	0.5	9	53.1	0.05	2.6	0.095	0.06	0.6	0.05	84	70	0.2	70.2	69

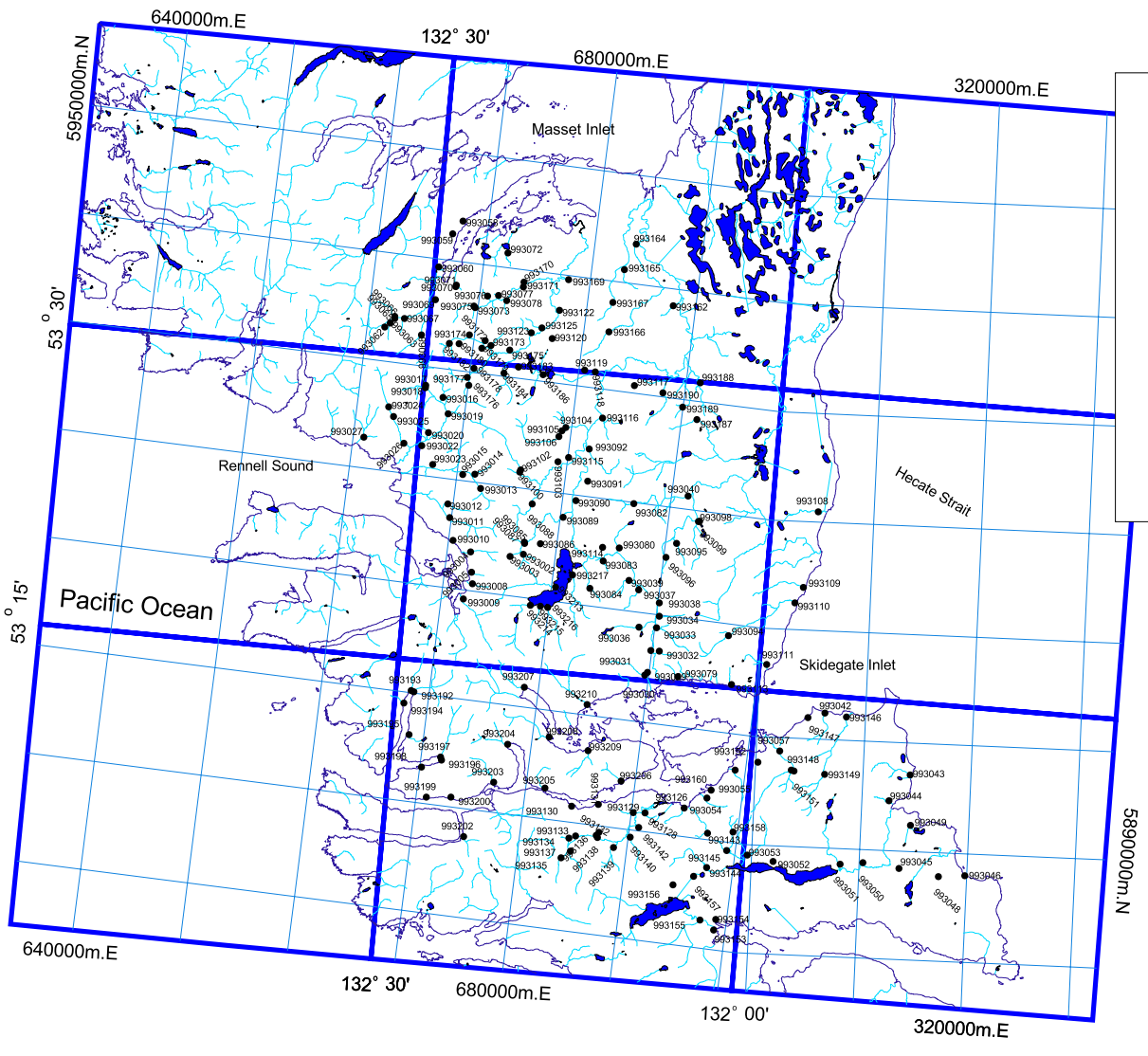
ID	P	Pb	Pb	pH	S	Sb	Sb	Sc	Se	SO4	Sr	Te	Th	Ti	Tl	U	UW	V	V	W	Zn	Zn
3055	0.059	7.11	6	7.4	0.05	0.46	0.6	4.7	0.6	7	68.2	0.04	2.0	0.135	0.06	0.5	0.05	104	78	-0.1	78.8	75
3056	0.059	7.24	4	7.3	0.04	0.42	0.5	4.9	0.5	6	74.2	0.03	2.2	0.128	0.06	0.5	0.05	97	77	-0.1	75.5	78
3057	0.056	5.54	2	7.3	0.05	0.35	0.4	4.1	0.4	6	36.3	0.03	2.1	0.081	0.04	0.5	0.05	94	69	-0.1	70.8	72
3058	0.069	2.52	2	7.2	0.04	0.06	0.2	3.3	0.7	3	115.2	-0.02	0.5	0.155	0.03	0.2	0.05	86	65	-0.1	64.0	59
3059	0.045	1.72	2	7.2	0.01	0.04	0.2	2.8	0.2	3	100.8	-0.02	0.7	0.197	0.02	0.2	0.05	105	74	-0.1	62.7	55
3060	0.041	4.61	2	7.1	0.04	0.13	0.2	3.3	0.9	3	47.1	-0.02	1.4	0.155	0.33	0.5	0.05	75	61	-0.1	147.6	142
3062	0.073	6.75	2	6.7	0.05	0.23	0.2	4.1	1.6	4	40.1	0.02	1.1	0.054	0.1	0.5	0.05	92	75	-0.1	98.8	93
3063	0.092	4.62	2	6.8	0.05	0.25	0.4	5.6	0.6	4	47.1	-0.02	2.1	0.098	0.07	0.5	0.05	112	73	-0.1	127.2	101
3064	0.088	4.36	2	7.3	0.04	0.24	0.8	5.7	0.6	4	45.2	-0.02	2.0	0.095	0.07	0.5	0.05	106	78	-0.1	130.9	101
3065	0.074	4.01	2	7.1	0.02	0.17	0.6	4.8	0.5	3	48.6	-0.02	1.5	0.268	0.04	0.4	0.05	179	112	-0.1	125.7	93
3066	0.082	4.18	2	7.0	0.03	0.15	0.5	4.4	0.6	4	67.0	-0.02	1.1	0.284	0.03	0.4	0.05	165	110	-0.1	116.9	79
3067	0.085	4.50	2	6.9	0.03	0.16	0.6	6.3	0.5	3	38.1	-0.02	1.3	0.136	0.05	0.4	0.05	149	107	-0.1	116.6	98
3068	0.058	4.65	2	6.9	0.03	0.24	0.5	3.2	0.5	3	34.2	-0.02	1.3	0.123	0.05	0.3	0.05	98	75	-0.1	74.6	80
3069	0.130	6.39	3	6.8	0.04	0.24	0.7	3.5	0.7	7	56.1	-0.02	1.5	0.003	0.07	0.3	0.05	48	40	-0.1	95.9	91
3070	0.052	10.01	5	6.9	0.03	0.68	0.8	1.7	1.1	3	20.3	-0.02	2.2	0.004	0.11	0.5	0.05	19	18	-0.1	55.7	53
3071	0.064	7.77	4	6.6	0.03	0.29	0.5	1.9	0.8	3	27.9	-0.02	2.4	0.004	0.08	0.8	0.05	20	17	-0.1	45.0	37
3072	0.059	4.15	2	6.7	0.29	0.31	0.5	4.9	0.3	6	68.1	-0.02	1.9	0.074	0.11	0.6	0.05	58	46	-0.1	68.8	65
3073	0.062	11.63	9	6.8	0.15	5.19	7.0	1.6	1.2	3	12.4	2.57	0.3	0.030	0.06	0.2	0.05	46	44	-0.1	60.3	62
3075	0.076	9.56	6	6.8	0.04	0.45	0.8	3.3	0.6	4	22.9	-0.02	1.5	0.008	0.07	0.3	0.05	64	50	-0.1	103.5	98
3076	0.064	5.84	4	6.8	0.27	0.61	0.8	3.6	0.6	4	43.9	-0.02	1.8	0.055	0.05	0.5	0.06	68	54	-0.1	74.5	69
3077	0.085	5.68	5	7.2	0.15	0.40	0.5	4.6	0.4	6	54.3	-0.02	1.5	0.065	0.05	0.5	0.05	81	76	-0.1	88.9	88
3078	0.080	4.24	3	7.0	0.02	0.31	0.4	3.6	0.2	3	79.8	-0.02	1.5	0.220	0.03	0.5	0.05	133	74	-0.1	124.2	78
3079	0.079	9.79	7	7.2	0.03	0.37	0.4	3.4	0.4	4	42.3	0.05	1.8	0.018	0.06	0.3	0.05	51	47	-0.1	91.3	96
3080	0.066	3.63	3	7.0	0.06	0.33	0.4	4.3	0.8	5	63.8	0.02	0.6	0.019	0.2	0.3	0.05	72	66	-0.1	107.3	117
3082	0.048	4.29	2	6.8	0.06	0.30	0.5	4.9	0.6	7	167.4	0.04	1.0	0.079	0.14	0.4	0.05	103	96	-0.1	85.3	90
3083	0.058	5.22	4	6.9	0.03	0.21	0.2	4.4	0.7	5	86.7	0.04	0.8	0.007	0.08	0.2	0.05	59	57	-0.1	73.5	75
3084	0.059	6.43	4	6.8	0.02	0.32	0.4	3.5	0.3	4	43.1	-0.02	1.3	0.040	0.04	0.3	0.05	71	65	-0.1	75.8	72
3085	0.056	10.37	9	7.1	0.02	0.21	0.4	3.9	0.3	4	50.7	0.02	2.3	0.009	0.07	0.8	0.06	35	37	-0.1	61.1	57
3086	0.077	7.44	6	7.1	0.21	0.63	0.8	6.9	0.7	5	54.3	0.04	1.5	0.035	0.11	0.5	0.05	97	81	-0.1	104.5	99
3087	0.053	7.87	5	7.1	0.02	0.34	0.3	3.8	0.5	3	54.5	-0.02	2.2	0.162	0.04	1.4	0.05	64	64	0.2	53.4	55
3088	0.052	5.47	3	6.9	0.04	0.23	0.2	4.1	0.3	5	88.1	0.03	1.4	0.026	0.05	0.3	0.05	78	63	-0.1	68.7	68
3089	0.068	7.25	4	7.0	0.07	0.52	0.2	5.1	0.6	4	55.5	0.08	1.8	0.030	0.09	0.5	0.05	73	65	-0.1	79.3	81
3090	0.084	6.63	4	7.1	0.2	0.39	0.6	5.4	1.8	12	118.6	0.06	0.9	0.003	0.14	0.4	0.05	57	46	-0.1	100.9	95
3091	0.082	4.85	2	7.4	0.1	1.40	1.9	5.4	1.9	8	84.2	0.04	0.8	0.041	0.77	0.5	0.05	124	105	-0.1	238.5	263
3092	0.045	4.47	3	7.6	0.06	0.20	0.2	4.6	0.3	5	117.1	0.02	1.2	0.027	0.08	0.3	0.05	91	59	-0.1	72.5	71
3093	0.047	4.12	2	7.6	0.05	0.19	0.3	4.5	0.2	5	113.2	0.02	1.2	0.034	0.07	0.3	0.05	93	61	-0.1	71.0	64
3094	0.034	5.96	4	7.4	0.01	0.21	0.3	3.1	0.2	5	25.3	0.03	1.0	0.006	0.05	0.2	0.05	75	56	-0.1	70.4	73
3095	0.100	4.07	2	7.8	0.12	0.27	0.4	3.6	0.9	4	91.0	-0.02	0.4	0.012	0.21	0.2	0.05	76	63	-0.1	100.1	104
3096	0.066	3.50	2	7.6	0.04	0.44	0.6	4.8	0.7	3	125.9	0.02	0.5	0.101	0.19	0.3	0.05	121	102	-0.1	112.8	115
3099	0.075	4.25	2	7.9	0.06	0.31	0.3	4.9	0.3	4	57.0	0.02	0.7	0.015	0.08	0.2	0.05	100	73	-0.1	72.9	69
3100	0.052	5.04	3	7.3	0.06	0.18	0.2	4.5	0.3	5	181.2	0.04	1.1	0.016	0.07	0.3	0.05	81	53	-0.1	71.2	71
3102	0.054	6.41	5	7.1	0.06	0.30	0.4	4.0	0.3	5	61.8	0.03	1.2	0.009	0.04	0.2	0.05	56	53	-0.1	86.0	81
3103	0.079	5.99	4	8.0	0.15	0.80	1.5	6.9	1.7	29	64.7	0.03	0.9	0.007	0.29	0.4	0.08	57	47	-0.1	125.9	120
3104	0.079	7.43	3	7.8	0.31	0.44	0.7	5.0	1.5	11	40.4	0.03	0.7	0.068	0.06	0.3	0.05	79	62	-0.1	92.0	82
3105	0.071	5.83	3	7.6	0.08	0.48	0.6	3.9	1.4	7	24.7	0.02	0.7	0.033	0.14	0.3	0.05	75	64	-0.1	109.5	99
3106	0.096	6.59	4	7.5	0.14	0.72	5.5	4.2	1.3	6	27.9	0.05	1.1	0.031	0.1	0.3	0.05	99	71	-0.1	101.9	100
3107	0.095	6.41	5	7.4	0.14	0.74	6.0	4.1	1.3	6	25.8	0.03	1.0	0.040	0.1	0.3	0.05	101	72	-0.1	104.7	95
3108	0.064	2.18	2	7.0	0.02	0.05	0.2	1.6	0.3	9	15.4	-0.02	4.4	0.054	0.03	0.6	0.05	32	26	-0.1	23.6	24
3109	0.042	4.59	2	6.6	0.03	0.19	0.2	3.2	0.5	7	22.7	-0.02	1.4	0.131	0.02	1.9	0.05	145	100	-0.1	57.3	47
3110	0.057	6.04	4	7.2	0.22	0.38	0.5	4.9	0.7	6	35.5	0.05	1.0	0.159	0.02	0.2	0.05	192	133	-0.1	71.8	58
3111	0.109	41.07	25	7.6	0.84	1.07	1.5	4.7	0.4	6	22.0	0.02	0.6	0.054	0.45	0.2	0.05	88	65	-0.1	130.7	124
3113	0.040	8.40	4	7.1	0.02	0.26	0.3	4.2	0.4	7	38.9	0.02	1.9	0.015	0.03	0.3	0.05	144	79	-0.1	108.6	83

ID	P	Pb	Pb	pH	S	Sb	Sb	Sc	Se	SO4	Sr	Te	Th	Ti	Tl	U	UW	V	V	W	Zn	Zn
3114	0.066	4.96	2	7.4	0.08	0.20	0.2	6.5	0.9	8	121.8	0.06	0.8	0.011	0.11	0.2	0.05	95	67	-0.1	120.2	101
3115	0.067	5.27	3	7.4	0.05	0.38	0.7	3.8	1.5	17	52.8	0.07	1.0	-0.001	0.15	0.3	0.05	38	32	-0.1	106.4	89
3116	0.045	4.02	2	7.6	0.04	0.16	0.2	4.3	0.6	5	157.1	0.02	0.9	0.043	0.08	0.3	0.05	70	65	-0.1	73.4	65
3117	0.049	3.93	2	7.6	0.04	0.18	0.2	3.6	0.9	6	110.1	0.03	0.9	0.091	0.08	0.5	0.05	82	62	-0.1	83.8	73
3118	0.069	6.13	3	7.2	0.02	0.31	0.4	3.3	0.9	4	30.9	0.02	1.5	0.028	0.05	0.4	0.05	59	49	-0.1	90.6	77
3119	0.054	9.61	7	8.0	0.06	0.31	0.4	3.7	0.6	5	45.6	0.02	3.0	0.040	0.08	0.8	0.05	57	42	-0.1	91.5	72
3120	0.075	4.75	2	7.7	0.02	0.16	0.2	5.2	0.7	3	42.7	-0.02	1.8	0.093	0.05	0.5	0.05	80	60	-0.1	99.7	81
3122	0.084	3.97	2	7.3	0.03	0.08	0.2	3.5	1.0	3	82.2	-0.02	1.0	0.155	0.05	0.4	0.05	81	65	-0.1	73.9	61
3123	0.070	4.91	2	7.6	0.02	0.42	0.8	3.8	0.6	4	51.3	0.02	1.8	0.146	0.03	0.4	0.05	90	63	-0.1	126.2	92
3124	0.072	5.34	2	7.6	0.03	0.49	0.7	4.2	0.4	4	56.5	-0.02	1.9	0.159	0.04	0.4	0.05	98	61	-0.1	135.3	86
3125	0.106	2.90	2	7.9	0.02	0.13	0.2	6.0	0.7	3	68.0	-0.02	1.8	0.166	0.04	0.5	0.05	119	82	-0.1	101.0	79
3126	0.068	9.35	7	7.8	0.03	0.44	0.7	3.8	0.8	7	48.9	0.03	2.9	0.111	0.05	0.5	0.05	75	58	-0.1	78.4	70
3128	0.055	5.81	4	7.5	0.07	0.34	0.6	3.7	0.9	3	67.1	0.03	1.4	0.107	0.17	0.5	0.05	72	80	-0.1	95.3	98
3129	0.063	4.52	2	7.7	0.1	0.25	0.4	5.7	1.3	12	59.6	0.03	0.6	0.026	0.08	0.2	0.05	75	72	-0.1	80.5	77
3130	0.061	5.97	4	7.6	0.13	0.28	0.5	5.6	1.3	14	33.0	0.06	0.6	0.062	0.04	0.1	0.05	75	76	-0.1	82.0	76
3131	0.049	5.53	2	7.6	0.14	0.21	0.3	5.9	1.3	14	132.5	0.07	0.6	0.054	0.09	0.2	0.05	71	71	-0.1	65.1	65
3132	0.046	2.90	2	7.8	0.08	0.15	0.2	4.0	0.9	7	43.7	-0.02	0.4	0.102	0.04	0.1	0.05	72	80	-0.1	58.2	72
3133	0.049	4.86	2	7.7	0.02	0.22	0.3	5.5	0.8	13	74.7	0.05	0.4	0.033	0.05	0.1	0.05	87	90	-0.1	68.5	80
3134	0.070	4.79	2	7.9	0.1	1.11	1.6	6.1	1.7	9	73.4	0.05	0.6	0.079	0.15	0.5	0.06	120	108	-0.1	104.6	105
3135	0.047	10.92	7	7.5	0.03	0.46	0.5	6.2	0.7	4	38.0	-0.02	0.4	0.602	0.03	0.2	0.05	227	242	-0.1	115.3	114
3136	0.059	4.12	2	7.4	0.04	0.62	0.8	6.6	1.2	5	50.2	0.03	0.4	0.255	0.11	0.4	0.05	167	150	-0.1	109.9	106
3137	0.071	2.75	2	8.1	0.05	0.87	1.2	6.2	1.6	5	26.4	0.03	0.3	0.202	0.23	0.9	0.06	165	146	-0.1	131.1	125
3138	0.049	2.56	2	7.5	0.04	0.50	0.7	7.7	0.9	4	29.0	-0.02	0.3	0.171	0.06	0.2	0.05	172	155	-0.1	92.6	90
3139	0.095	3.64	2	8.3	0.19	1.38	1.9	5.8	2.7	11	32.4	0.03	0.4	0.077	0.19	0.5	0.07	120	103	-0.1	115.8	126
3140	0.080	5.94	2	8.2	0.12	0.52	0.8	5.9	0.9	20	58.1	0.09	0.6	0.028	0.13	0.2	0.05	81	79	-0.1	92.4	95
3142	0.066	6.23	3	8.0	0.13	0.79	1.0	5.1	0.2	14	52.3	0.03	1.1	0.073	0.06	0.3	0.05	89	77	-0.1	75.7	75
3143	0.051	8.85	5	7.4	0.02	0.36	0.5	3.0	-0.1	5	37.3	0.03	1.5	0.047	0.06	0.3	0.05	58	51	-0.1	63.3	66
3144	0.065	6.75	3	7.9	0.05	0.50	0.2	4.5	-0.1	7	53.1	0.05	2.2	0.091	0.05	0.5	0.05	90	80	-0.1	66.3	67
3145	0.064	11.58	6	7.2	0.03	1.33	2.0	3.8	0.2	4	44.4	0.06	2.7	0.029	0.07	0.4	0.05	73	59	-0.1	81.8	82
3146	0.051	5.94	2	7.5	0.03	0.39	0.5	4.0	0.2	4	55.7	0.03	2.9	0.110	0.04	0.6	0.05	111	78	-0.1	70.1	63
3147	0.044	5.19	2	7.6	0.03	0.33	0.4	3.0	0.1	7	27.0	-0.02	2.5	0.088	0.06	0.5	0.05	76	57	-0.1	64.6	61
3148	0.055	6.91	4	7.7	0.03	0.43	0.6	3.7	-0.1	6	28.0	0.03	1.8	0.054	0.04	0.4	0.05	83	69	-0.1	68.0	68
3149	0.050	6.77	3	7.6	0.09	0.49	0.7	3.3	0.1	4	33.7	0.03	3.1	0.120	0.05	0.7	0.05	118	82	-0.1	79.2	72
3150	0.052	7.13	4	7.7	0.08	0.52	0.8	3.4	0.3	3	38.8	0.03	2.0	0.099	0.06	0.7	0.05	114	75	-0.1	81.6	70
3151	0.068	7.53	3	7.8	0.04	0.51	0.8	4.2	-0.1	4	65.1	0.03	2.7	0.136	0.04	0.7	0.05	159	93	-0.1	81.7	65
3152	0.051	4.71	2	7.5	0.09	0.42	0.7	4.9	0.4	6	54.1	0.03	0.8	0.115	0.11	0.3	0.05	76	70	-0.1	91.1	94
3153	0.061	3.19	2	7.4	0.05	0.42	0.6	4.9	1.3	4	41.6	0.02	0.4	0.237	0.12	0.5	0.05	148	137	-0.1	110.7	104
3154	0.069	4.49	3	7.5	0.12	0.48	0.7	6.0	0.6	3	26.1	0.02	0.5	0.359	0.09	2.3	0.29	186	147	-0.1	74.9	74
3155	0.060	2.38	2	7.5	0.14	0.43	0.7	6.4	0.2	3	25.7	-0.02	0.5	0.413	0.06	0.2	0.08	207	159	-0.1	76.1	71
3156	0.079	6.18	3	7.8	2.08	1.51	2.5	8.2	1.5	22	101.7	0.07	0.6	0.007	0.49	0.2	0.12	54	47	-0.1	114.2	120
3157	0.074	6.43	2	-1.0	0.08	0.30	0.6	6.8	0.5	-1	43.2	0.06	0.6	0.001	0.07	0.1	-1	67	53	-0.1	90.8	87
3158	0.080	11.36	7	7.7	0.05	2.14	3.3	4.8	0.2	6	36.6	0.07	3.4	0.093	0.07	0.7	0.05	140	101	-0.1	85.8	80
3160	0.057	4.89	3	7.8	0.04	0.50	0.8	4.8	0.5	18	99.2	0.02	1.1	0.093	0.21	0.6	0.05	90	81	-0.1	119.2	116
3162	0.051	2.57	2	6.6	0.02	0.13	0.2	1.8	0.1	12	23.9	-0.02	1.6	0.067	0.05	0.5	0.05	35	31	-0.1	30.2	27
3164	0.039	3.98	3	6.8	0.02	0.25	0.4	1.7	0.4	8	22.0	-0.02	1.3	0.049	0.04	0.3	0.05	44	38	-0.1	40.7	34
3165	0.022	5.14	2	6.4	0.02	0.15	0.2	1.2	0.6	12	16.5	-0.02	0.6	0.075	0.03	0.2	0.05	30	25	-0.1	21.6	15
3166	0.072	5.81	2	7.0	0.04	1.04	1.3	3.6	0.7	4	25.3	0.03	1.0	0.074	0.05	0.2	0.05	83	72	-0.1	111.2	105
3167	0.085	4.00	2	7.1	0.01	0.15	0.2	3.9	0.5	3	48.3	-0.02	1.2	0.138	0.04	0.4	0.05	90	66	-0.1	78.9	69
3168	0.087	4.06	2	7.0	0.02	0.15	0.3	4.1	0.2	3	48.5	-0.02	1.3	0.136	0.04	0.5	0.05	91	78	-0.1	80.5	73
3169	0.068	4.79	2	7.0	0.03	0.15	0.2	2.5	0.2	6	39.3	-0.02	0.9	0.101	0.04	0.3	0.05	57	50	-0.1	54.8	54
3170	0.059	4.32	2	7.0	0.02	0.40	0.5	4.8	0.3	3	92.8	-0.02	1.6	0.104	0.07	0.5	0.07	87	71	-0.1	70.3	67
3171	0.051	4.77	2	6.9	0.02	0.19	0.3	2.0	0.3	3	42.8	-0.02	1.3	0.233	0.03	0.4	0.05	103	74	-0.1	82.4	66

ID	P	Pb	Pb	pH	S	Sb	Sb	Sc	Se	SO4	Sr	Te	Th	Ti	Tl	U	UW	V	V	W	Zn	Zn
3172	0.056	14.72	10	6.6	0.07	3.36	4.0	0.9	0.6	10	7.1	-0.02	1.1	0.005	0.06	0.1	0.05	19	16	-0.1	50.4	47
3173	0.047	12.84	9	6.7	0.15	0.96	1.4	1.4	0.5	6	18.4	-0.02	2.2	0.068	0.07	0.3	0.05	39	28	-0.1	86.7	76
3174	0.104	8.13	5	6.9	0.11	1.38	2.3	4.5	0.4	9	60.4	-0.02	1.0	0.292	0.04	0.2	0.05	169	116	-0.1	120.9	91
3175	0.056	11.06	6	7.1	0.06	0.36	0.5	2.1	0.7	5	19.4	-0.02	1.6	0.009	0.07	0.3	0.05	43	34	-0.1	80.1	74
3176	0.053	6.37	3	7.0	0.03	0.25	0.4	2.5	0.9	3	25.2	0.02	0.6	0.063	0.05	0.2	0.05	69	63	-0.1	72.7	73
3177	0.073	7.07	4	6.9	0.05	0.38	0.7	3.8	0.4	3	36.5	-0.02	1.4	0.070	0.04	0.3	0.05	94	75	-0.1	93.6	81
3178	0.073	7.35	4	7.0	0.22	2.71	3.8	3.4	1.3	5	47.1	0.47	1.0	0.071	0.04	0.2	0.05	99	78	-0.1	89.1	75
3179	0.067	6.99	3	7.7	0.16	2.02	3.0	4.5	1.0	4	64.2	-0.02	0.9	0.083	0.05	0.3	0.05	86	74	-0.1	74.0	70
3180	0.053	7.57	4	7.4	0.06	0.43	0.7	3.5	0.9	3	47.1	-0.02	1.3	0.190	0.05	0.4	0.05	112	79	-0.1	100.2	72
3182	0.072	6.51	3	6.8	0.04	0.29	0.5	3.4	0.6	3	52.5	-0.02	1.0	0.010	0.05	0.2	0.05	75	69	-0.1	84.5	83
3183	0.047	6.21	2	6.6	0.03	0.86	1.2	1.9	0.9	2	18.0	0.09	0.5	0.180	0.03	0.2	0.05	45	45	-0.1	38.7	36
3184	0.042	5.00	2	7.0	0.03	0.39	0.6	1.6	0.8	3	10.8	-0.02	0.2	0.045	0.04	0.1	0.05	45	47	-0.1	46.5	51
3185	0.051	5.67	2	7.1	0.04	0.46	0.5	1.8	0.9	3	12.4	-0.02	0.3	0.046	0.05	0.2	0.05	50	42	-0.1	50.9	46
3186	0.046	6.67	2	7.3	0.03	1.29	1.8	2.1	1.0	3	11.3	0.04	0.6	0.027	0.06	0.2	0.05	44	41	-0.1	55.9	55
3187	0.039	5.93	3	7.2	0.05	0.37	0.7	5.3	0.4	4	50.9	0.04	0.4	0.149	0.04	0.2	0.05	164	140	-0.1	78.6	75
3188	0.032	4.36	4	7.1	0.03	0.20	0.3	3.5	0.4	7	39.8	0.02	0.5	0.076	0.06	0.2	0.05	93	80	-0.1	64.9	66
3189	0.030	5.81	2	7.0	0.04	0.38	0.4	5.4	0.5	4	43.5	0.03	0.4	0.119	0.05	0.1	0.05	169	147	-0.1	68.4	63
3190	0.038	6.75	2	7.0	0.47	0.36	0.6	5.4	1.2	5	57.3	0.07	0.6	0.117	0.07	0.2	0.05	129	118	-0.1	71.5	72
3192	0.050	5.73	3	6.7	0.03	0.35	0.5	2.4	0.7	3	26.9	0.03	1.4	0.090	0.07	0.8	0.07	92	66	0.1	47.4	48
3193	0.052	5.12	4	6.9	0.02	0.30	0.5	1.4	0.6	3	19.2	-0.02	2.0	0.099	0.02	1	0.05	151	59	0.4	34.5	33
3194	0.053	6.16	5	6.8	0.06	0.30	0.4	3.0	1.4	3	44.9	-0.02	0.6	0.137	0.06	0.7	0.07	74	67	0.1	49.3	45
3195	0.029	8.81	5	6.8	0.03	0.29	0.4	2.2	1.0	2	36.7	-0.02	0.6	0.181	0.02	0.3	0.05	68	60	-0.1	46.6	42
3196	0.037	11.19	8	6.9	0.05	0.30	0.4	3.3	1.2	3	30.6	-0.02	0.7	0.187	0.03	0.5	0.05	62	63	0.1	51.0	48
3197	0.053	10.08	7	7.0	0.05	0.60	0.9	3.4	1.1	3	29.9	0.05	1.1	0.121	0.06	1	0.05	67	61	0.1	55.0	53
3198	0.036	8.40	6	7.6	0.03	0.53	1.0	6.1	0.6	3	42.4	-0.02	1.2	0.159	0.03	0.6	0.05	71	70	-0.1	57.7	58
3199	0.031	7.33	7	7.5	0.03	0.21	0.4	6.0	0.6	3	45.2	-0.02	1.0	0.122	0.03	0.4	0.05	66	67	-0.1	57.6	59
3200	0.035	7.96	6	7.4	0.03	0.23	0.3	5.3	0.3	3	32.0	-0.02	1.6	0.150	0.03	0.7	0.05	64	71	-0.1	58.7	58
3202	0.050	4.78	3	6.9	0.06	0.52	0.7	4.6	0.4	3	28.8	0.02	1.1	0.155	0.02	0.4	0.05	116	93	-0.1	57.7	55
3203	0.041	9.48	8	6.9	0.03	0.31	0.6	4.6	0.8	3	33.7	-0.02	1.4	0.179	0.04	0.9	0.05	67	82	-0.1	56.2	58
3204	0.052	8.58	7	6.9	0.05	0.34	0.6	3.9	0.7	2	26.3	-0.02	1.1	0.122	0.04	0.8	0.05	53	65	-0.1	66.1	71
3205	0.044	8.91	6	7.3	0.07	0.47	0.8	6.1	0.3	5	31.4	0.03	1.5	0.151	0.04	0.5	0.05	68	70	-0.1	82.4	74
3206	0.072	9.02	7	7.6	0.04	0.72	1.1	3.9	0.3	10	53.9	0.07	2.3	0.057	0.07	0.5	0.05	64	67	-0.1	76.6	76
3207	0.055	15.11	11	7.7	0.03	2.56	3.1	4.7	0.8	2	18.1	0.08	0.8	0.047	0.07	0.3	0.07	75	79	-0.1	94.6	93
3208	0.051	8.30	4	7.3	0.07	0.43	0.7	5.1	0.7	3	30.6	0.02	1.2	0.065	0.04	0.6	0.05	68	71	-0.1	72.9	69
3209	0.052	8.72	7	7.5	0.07	0.52	0.8	4.3	0.3	4	49.0	0.02	2.3	0.074	0.05	0.6	0.05	59	60	-0.1	77.1	73
3210	0.057	9.97	7	7.5	0.05	1.59	2.1	3.3	0.4	3	27.5	0.11	1.2	0.067	0.05	0.4	0.05	69	64	-0.1	71.1	71
3212	0.056	9.87	8	6.9	0.05	1.57	2.2	3.4	0.6	3	27.4	0.14	1.3	0.068	0.05	0.4	0.05	73	62	-0.1	72.9	67
3213	0.068	7.50	5	7.2	0.08	0.39	0.6	4.3	0.3	2	38.4	0.03	1.6	0.054	0.05	0.5	0.06	70	63	-0.1	71.5	73
3214	0.069	7.53	4	7.1	0.05	0.65	0.8	2.9	1.0	4	26.5	0.03	1.1	0.013	0.07	0.5	0.05	60	61	-0.1	72.0	69
3215	0.046	11.00	9	7.0	0.04	1.32	1.8	2.1	0.7	4	34.4	0.07	1.2	0.036	0.09	0.5	0.05	57	53	0.1	63.2	63
3216	0.052	9.01	6	7.0	0.05	0.86	1.1	2.3	0.7	3	21.6	0.07	1.5	0.013	0.06	0.4	0.05	50	42	-0.1	58.4	54
3217	0.063	6.29	4	7.3	0.03	1.34	1.8	3.9	0.2	4	25.7	0.02	1.3	0.019	0.04	0.3	0.05	67	58	-0.10	71.8	66

Appendix B – List of Sample Location, Geology and Element Symbol Maps

Map 1 – Sample locations
Map 2 – Bedrock Geology
Map 3 – Silver
Map 4 – Aluminum
Map 5 – Arsenic
Map 6 – Gold
Map 7 – Boron
Map 8 – Barium
Map 9 – Bismuth
Map 10 – Calcium
Map 11 – Cadmium
Map 12 – Cobalt
Map 13 – Chromium
Map 14 – Copper
Map 15 – Iron
Map 16 – Gallium
Map 17 – Mercury
Map 18 – Potassium
Map 19 – Lanthanum
Map 20 – Magnesium
Map 21 – Manganese
Map 22 – Molybdenum
Map 23 – Sodium
Map 24 – Nickel
Map 25 – Phosphorus
Map 26 – Lead
Map 27 – Sulphur
Map 28 – Antimony
Map 29 – Scandium
Map 30 – Selenium
Map 31 – Strontium
Map 32 – Tellurium
Map 33 – Thorium
Map 34 – Titanium
Map 35 – Thallium
Map 36 – Uranium
Map 37 – Vanadium
Map 38 – Tungsten
Map 39 – Zinc
Map 40 – Sites with a VMS deposit signature
Map 41 – Sites with a epithermal deposit signature
Map 42 – Sites with a porphyry deposit signature



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

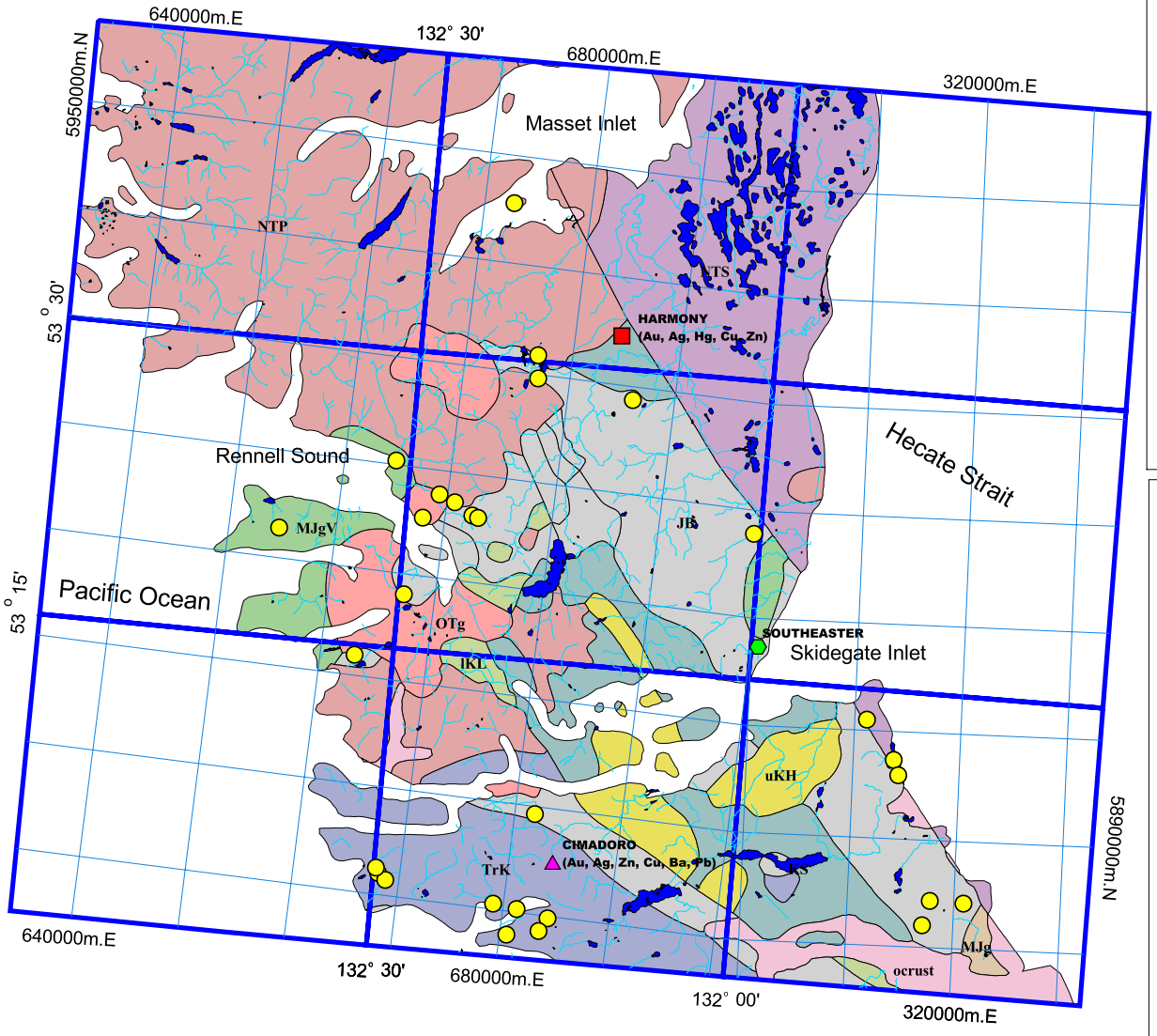
GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Sample Location Map



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NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 4 8 12 16 20 Kilometers

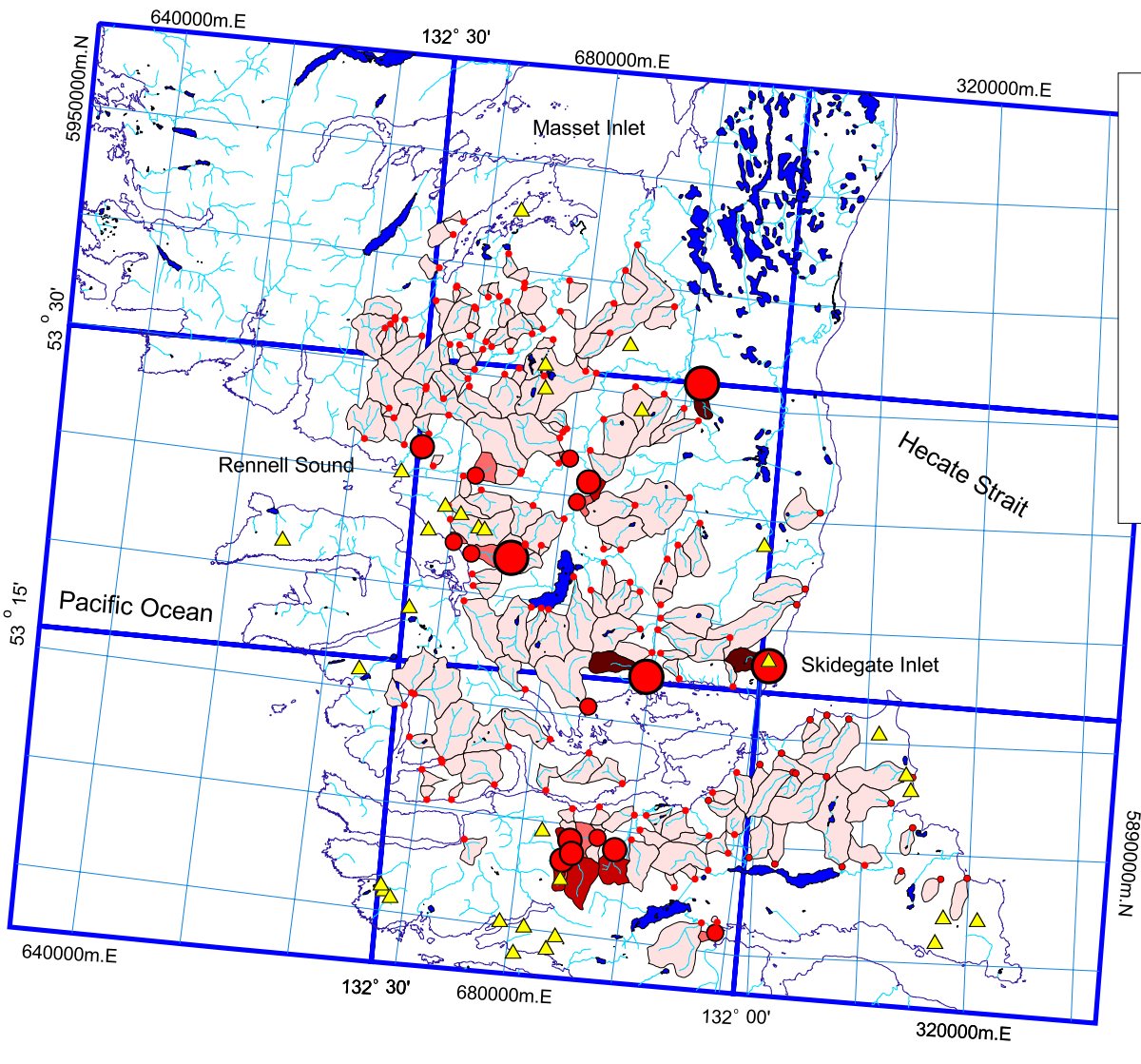
Bedrock Geology

Unit	Name/Lithology
JB	Bonanza: volcanic/sedimentary
KS	Skeena: sedimentary
MJg	Undivided plutonic
MJgV	Vancouver Island: plutonic
NTP	Pemberton: volcanic
NTS	Skonun: sedimentary
OTg	Undivided plutonic
TrK	Karmutsen: volcanic/sedimentary
lKL	Longarm: sedimentary
ocrust	Oceanic crust
uKH	Honna: sedimentary

Mineral Occurrences

- Past Producer
- Developed Prospect
- Prospect
- Showing

Map 2



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NAD 83

0 5 10 15 Kilometers

Legend

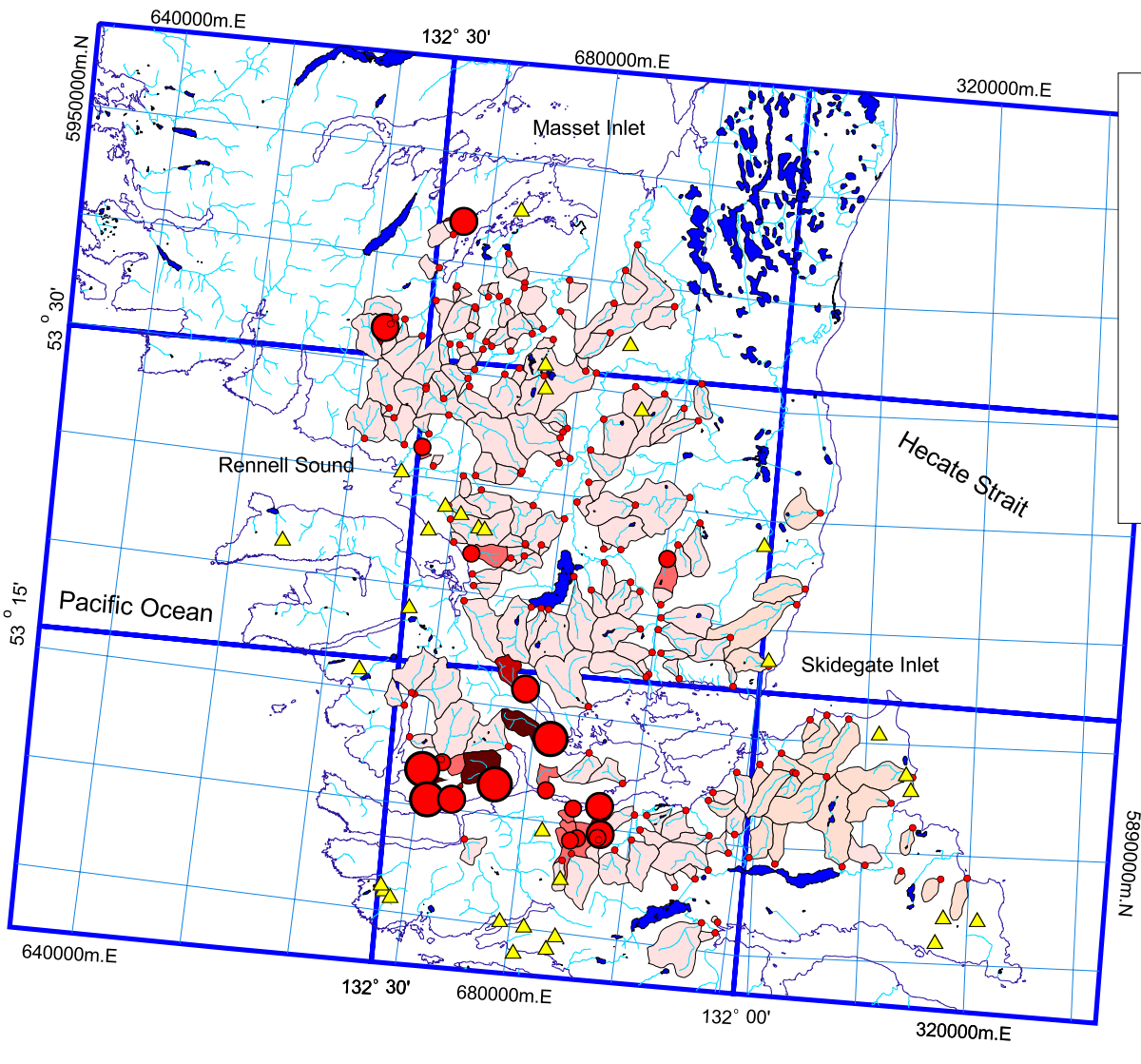
MINFILE Occurrence

Silver (ppb) by ICPMS

- **197 to 418**
- **134 to 196**
- **100 to 133**
- **12 to 99**

Map 3

Ag



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

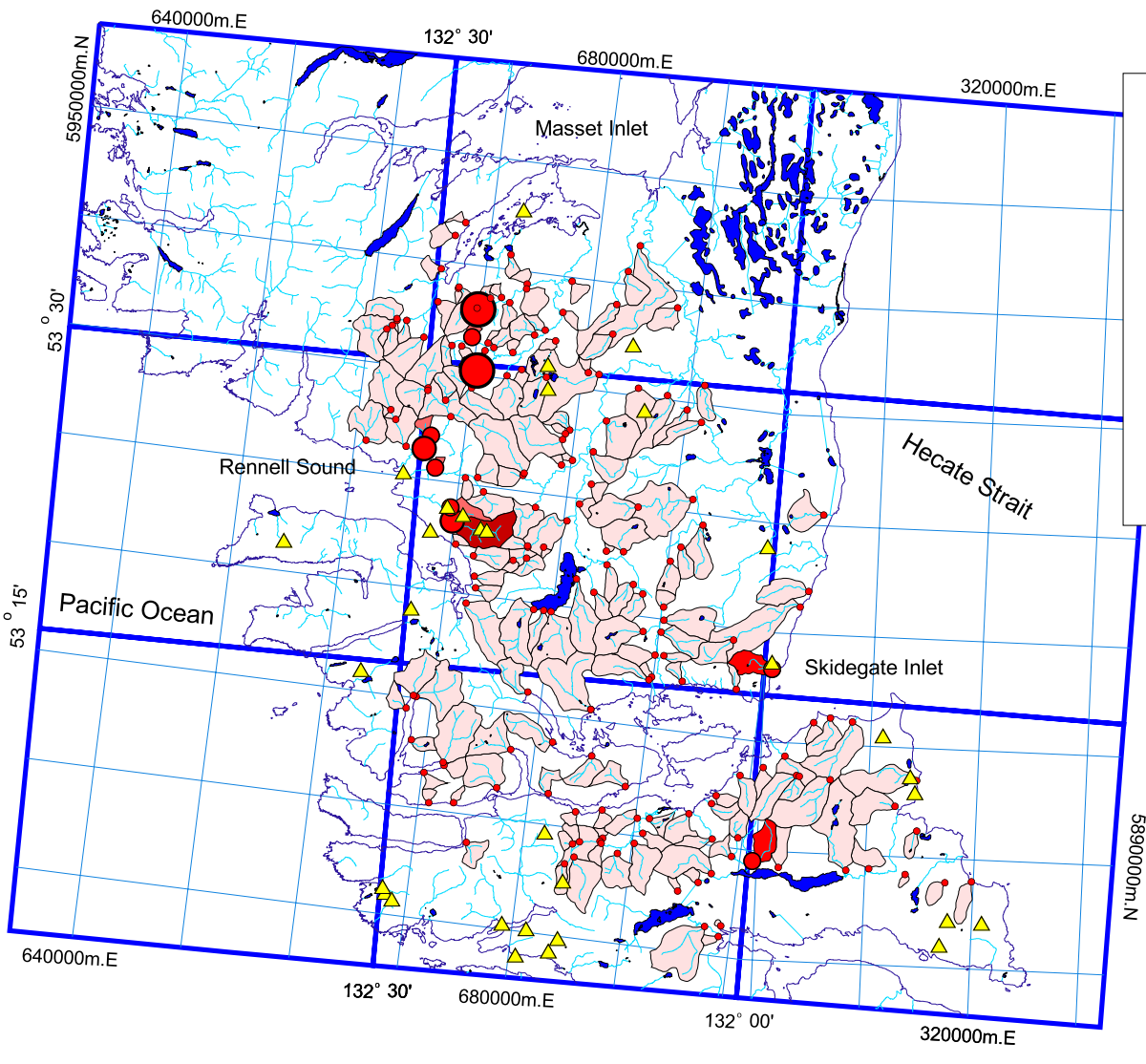
MINFILE Occurrence

Aluminium (%) by ICPMS

- **3.48 to 3.84**
- **3.17 to 3.47**
- **2.86 to 3.16**
- **0.78 to 2.85**

Map 4

Al



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

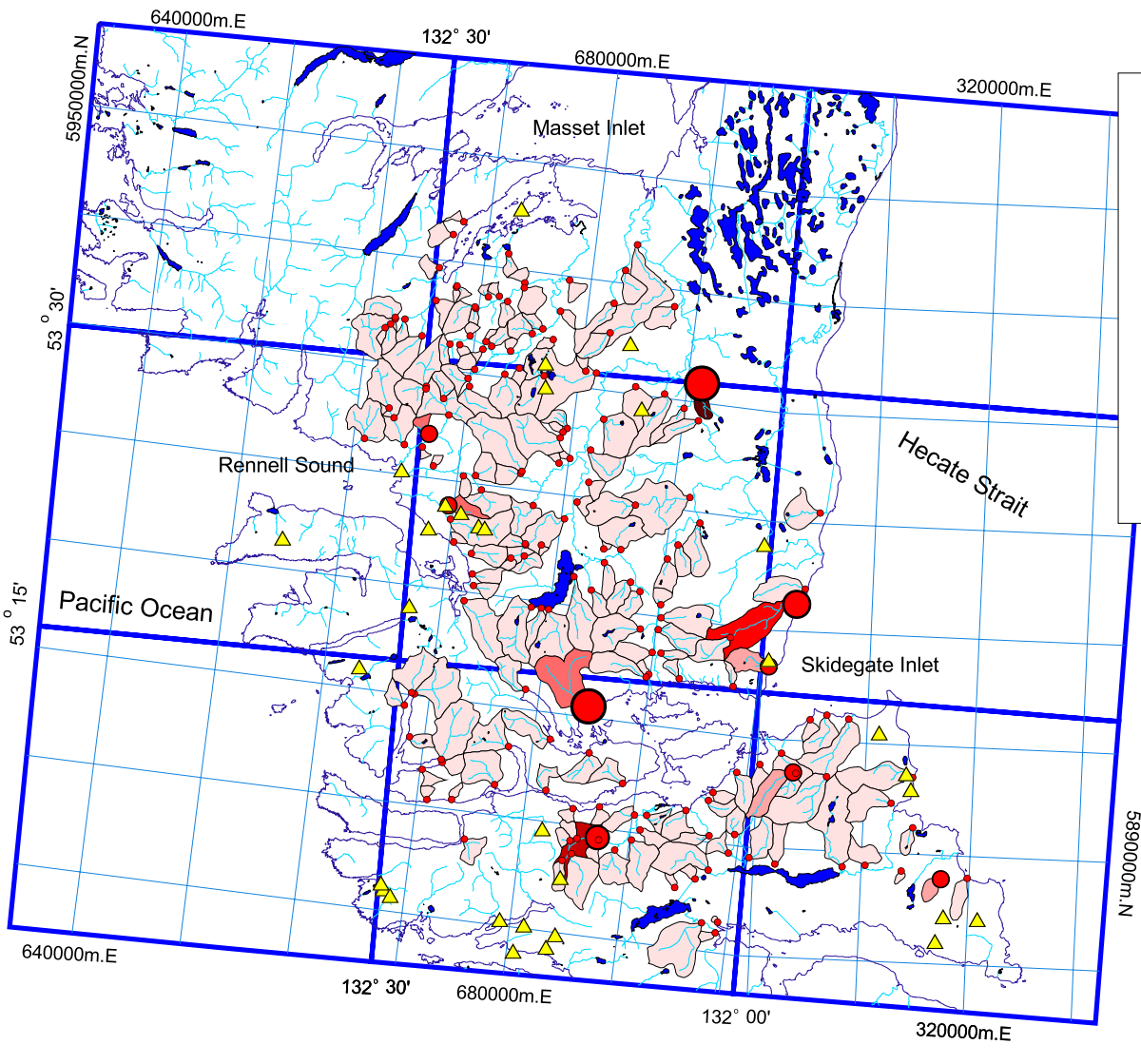
MINFILE Occurrence

Arsenic (ppm) by ICPMS

- **130.3 to 244.4**
- **77.1 to 130.2**
- **48.6 to 77.0**
- **0.1 to 48.5**

Map 5

As



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

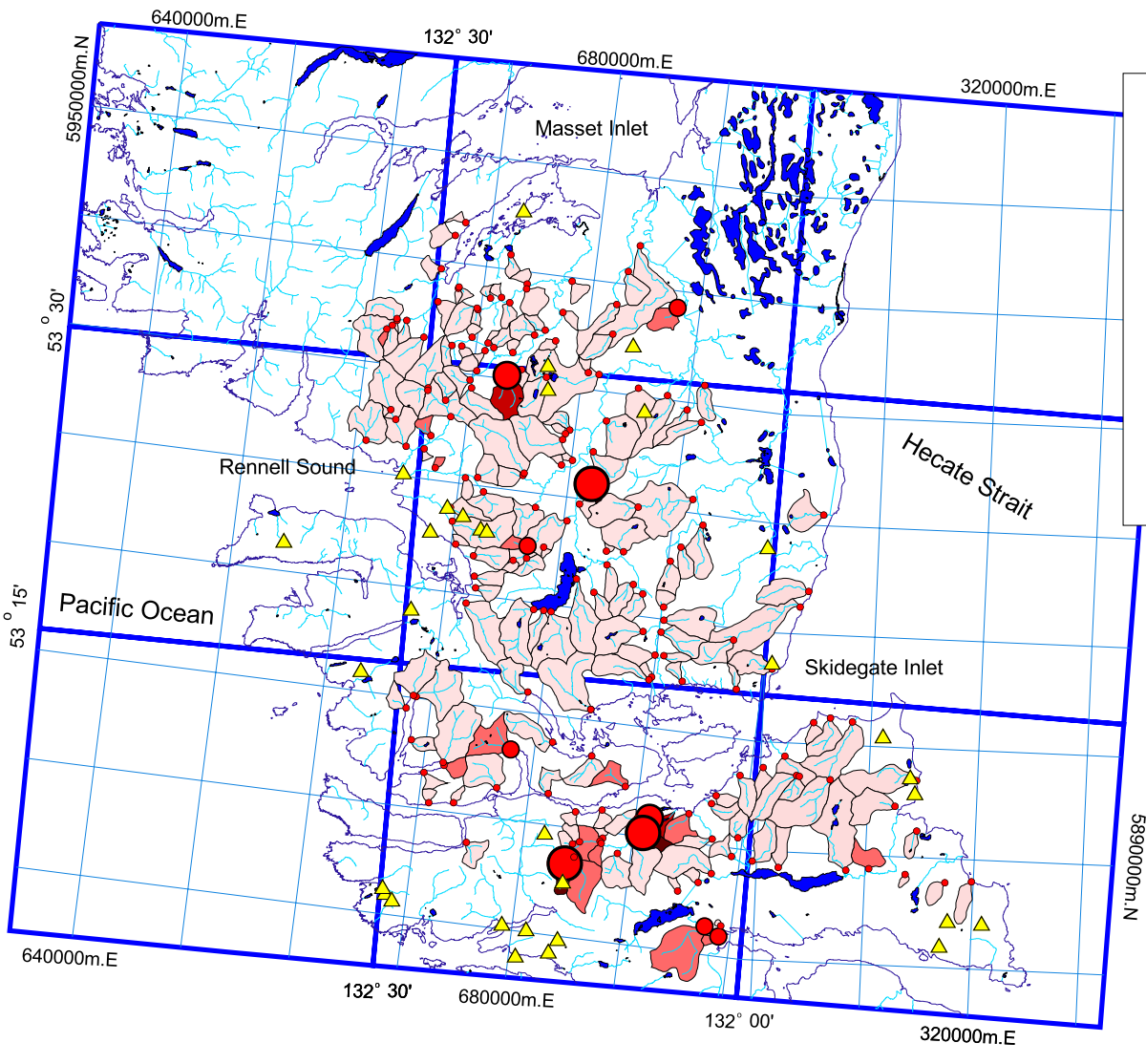
MINFILE Occurrence

Gold (ppb) by ICPMS

- **228.6 to 4247.6**
- **40.9 to 228.5**
- **5.7 to 40.8**
- **0.2 to 5.6**

Map 6

Au



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

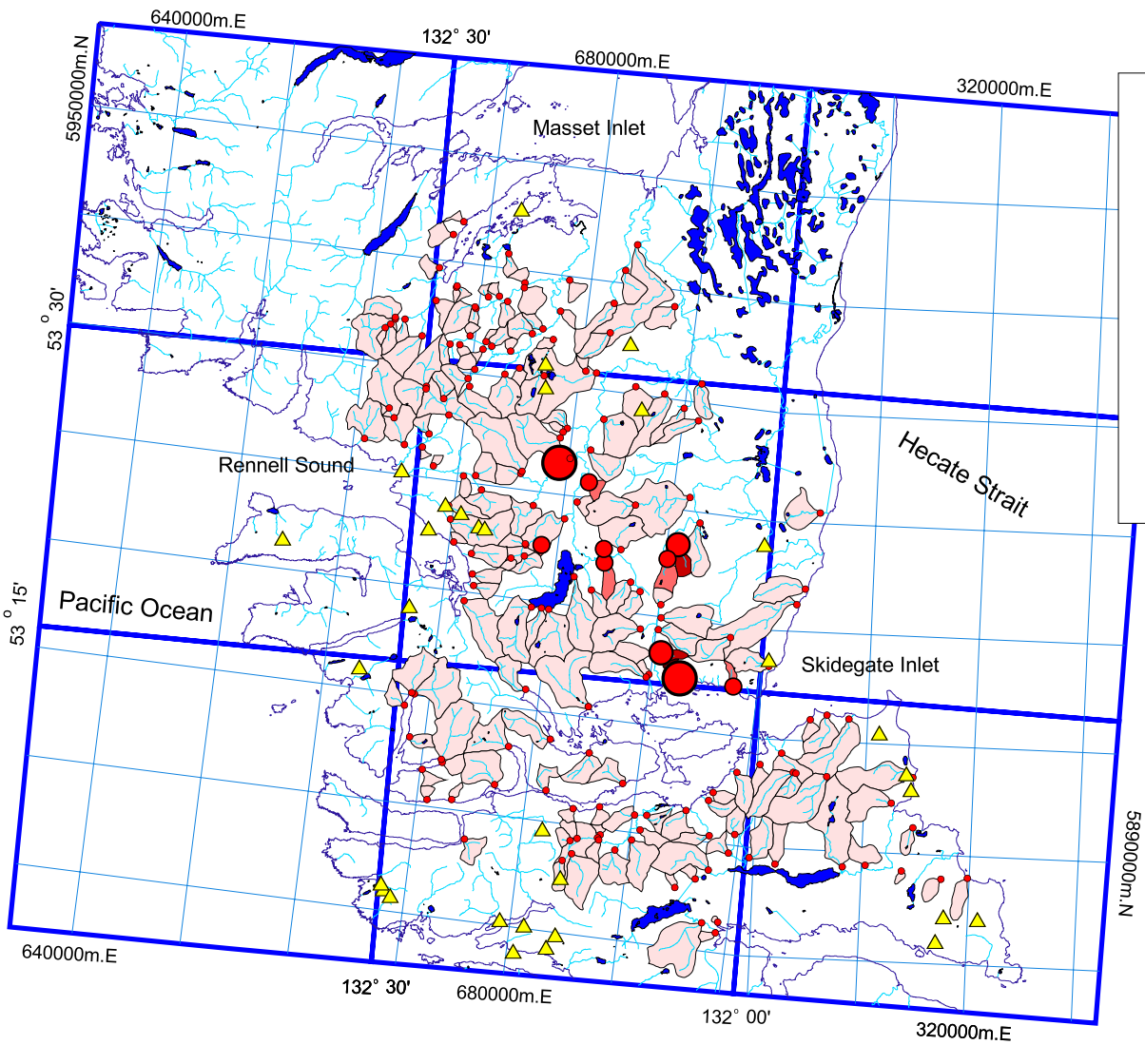
MINFILE Occurrence

Boron (ppm) by ICPMS

- **19 to 21**
- **15 to 18**
- **12 to 14**
- **-1 to 11**

Map 7

B



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

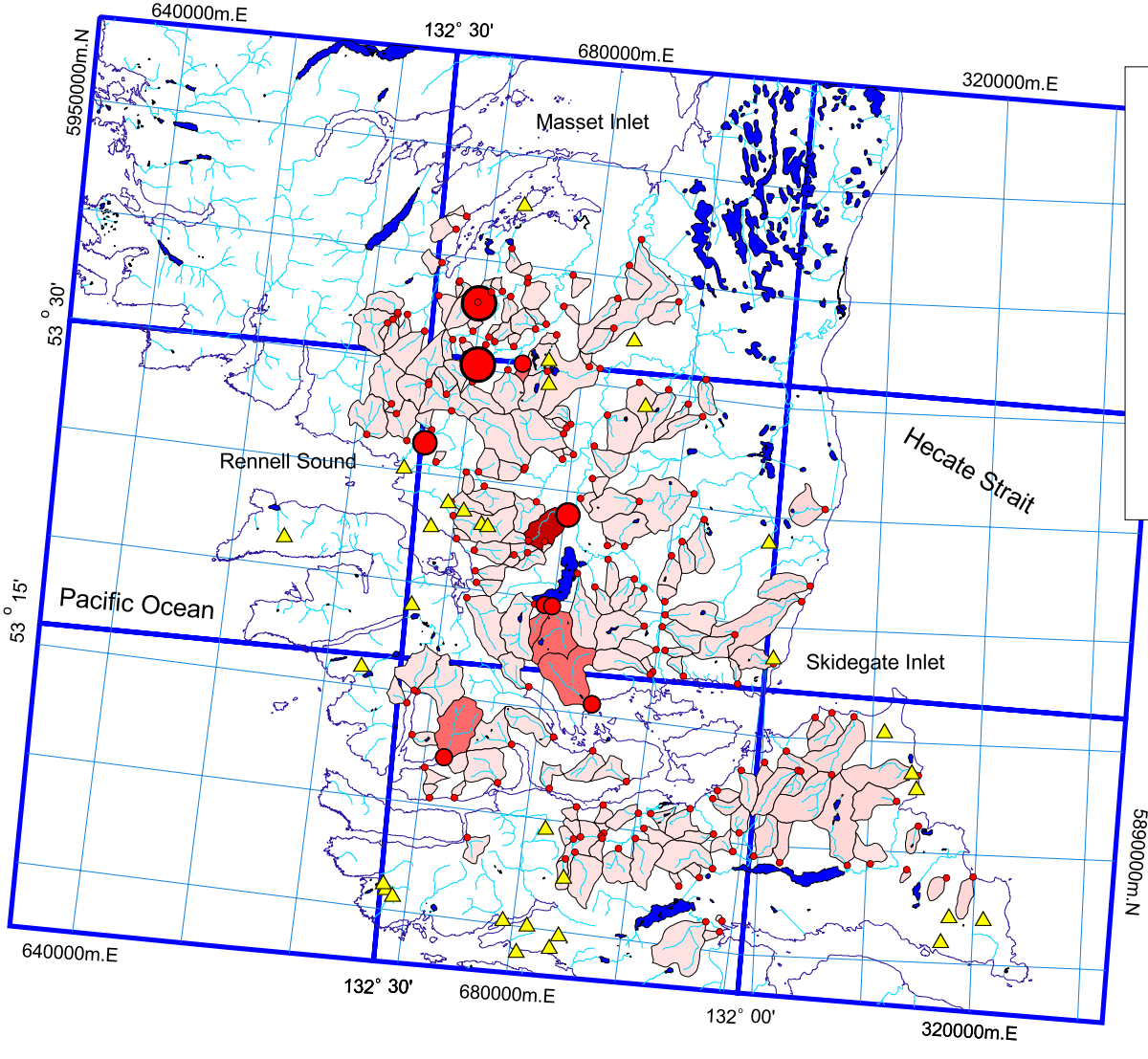
MINFILE Occurrence

Barium (ppm) by ICPMS

- **420.6 to 492**
- **364.5 to 420.5**
- **310.0 to 364.4**
- **23.2 to 309.9**

Map 8

Ba



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

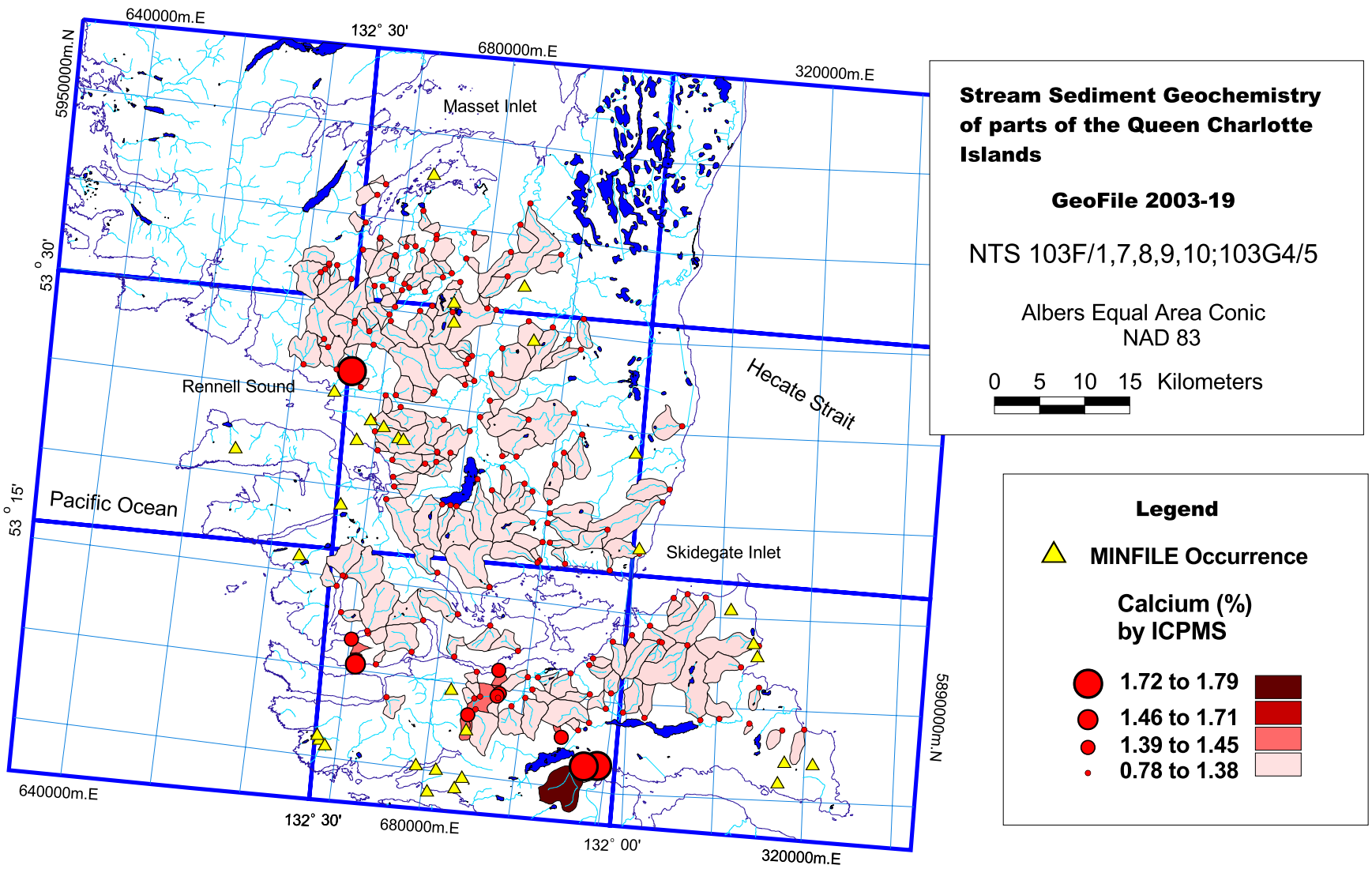
MINFILE Occurrence

Bismuth (ppm) by ICPMS

- **1.83 to 11.19**
- **1.34 to 1.82**
- **0.40 to 1.33**
- **0.02 to 0.39**

Map 9

Bi



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

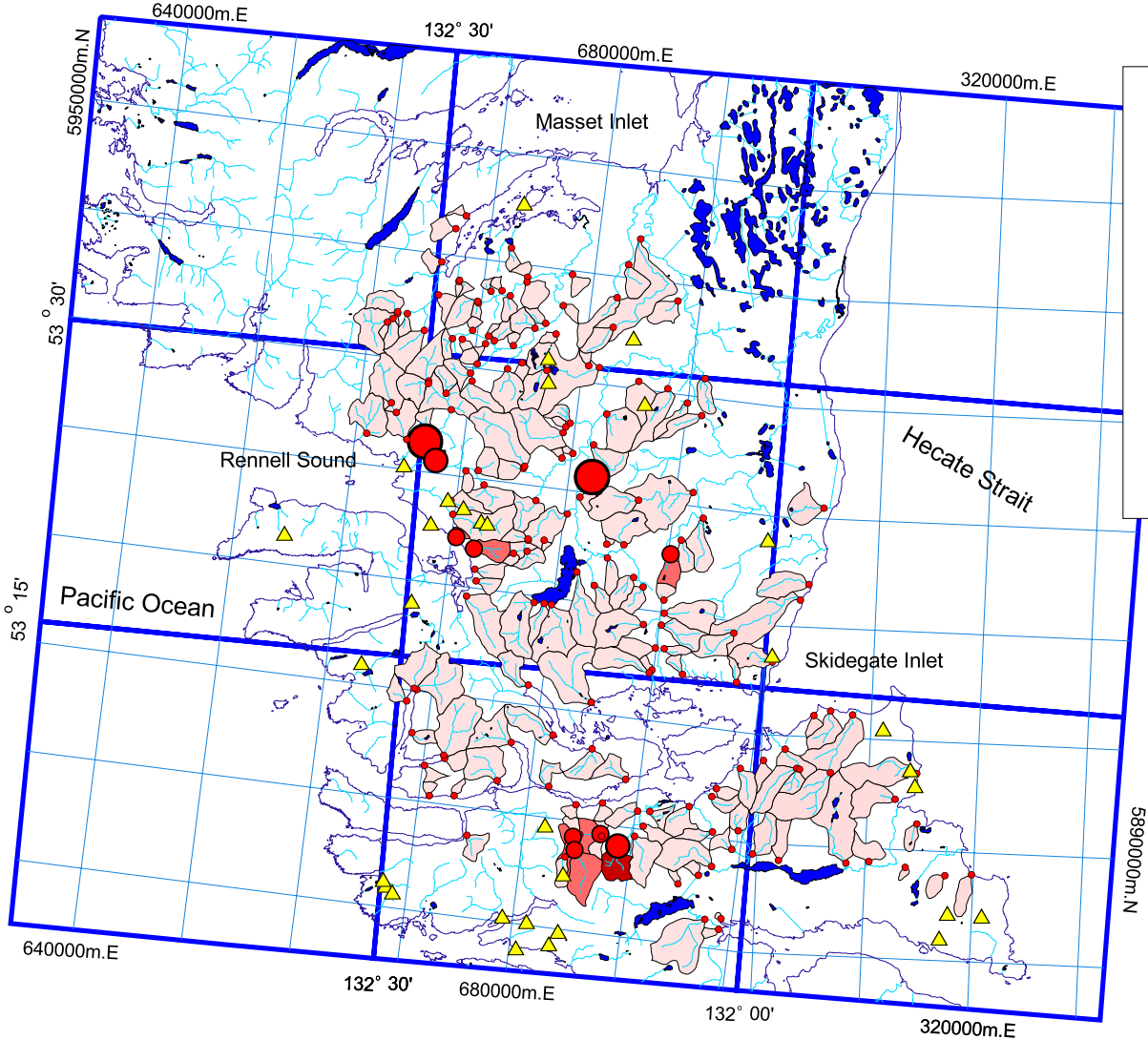
MINFILE Occurrence

Calcium (%) by ICPMS

- **1.72 to 1.79**
- **1.46 to 1.71**
- **1.39 to 1.45**
- **0.78 to 1.38**

Map 10

Ca



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

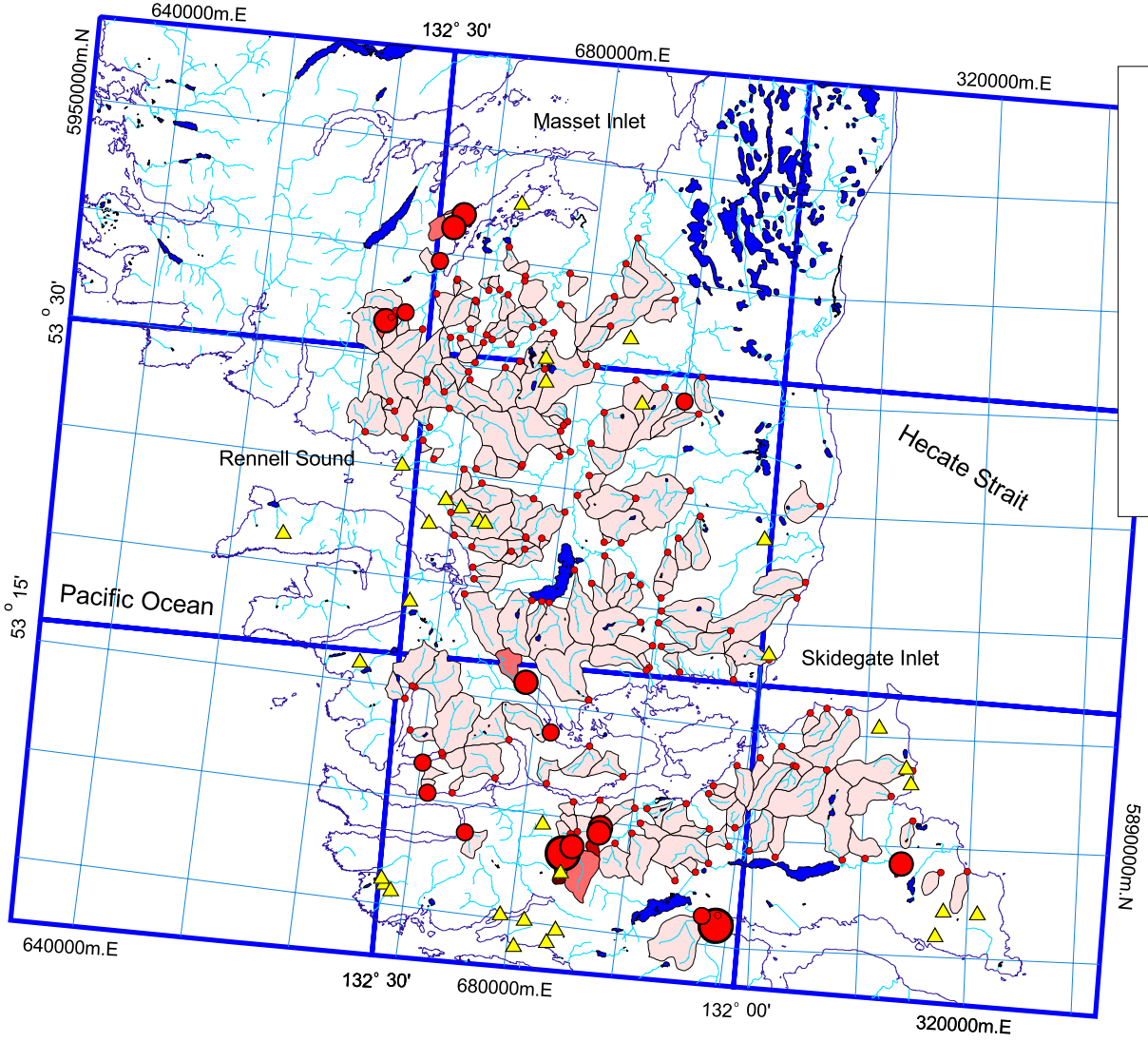
MINFILE Occurrence

Cadmium (ppm) by ICPMS

- **1.24 to 2.87**
- **0.97 to 1.23**
- **0.66 to 0.96**
- **0.02 to 0.65**

Map 11

Cd



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

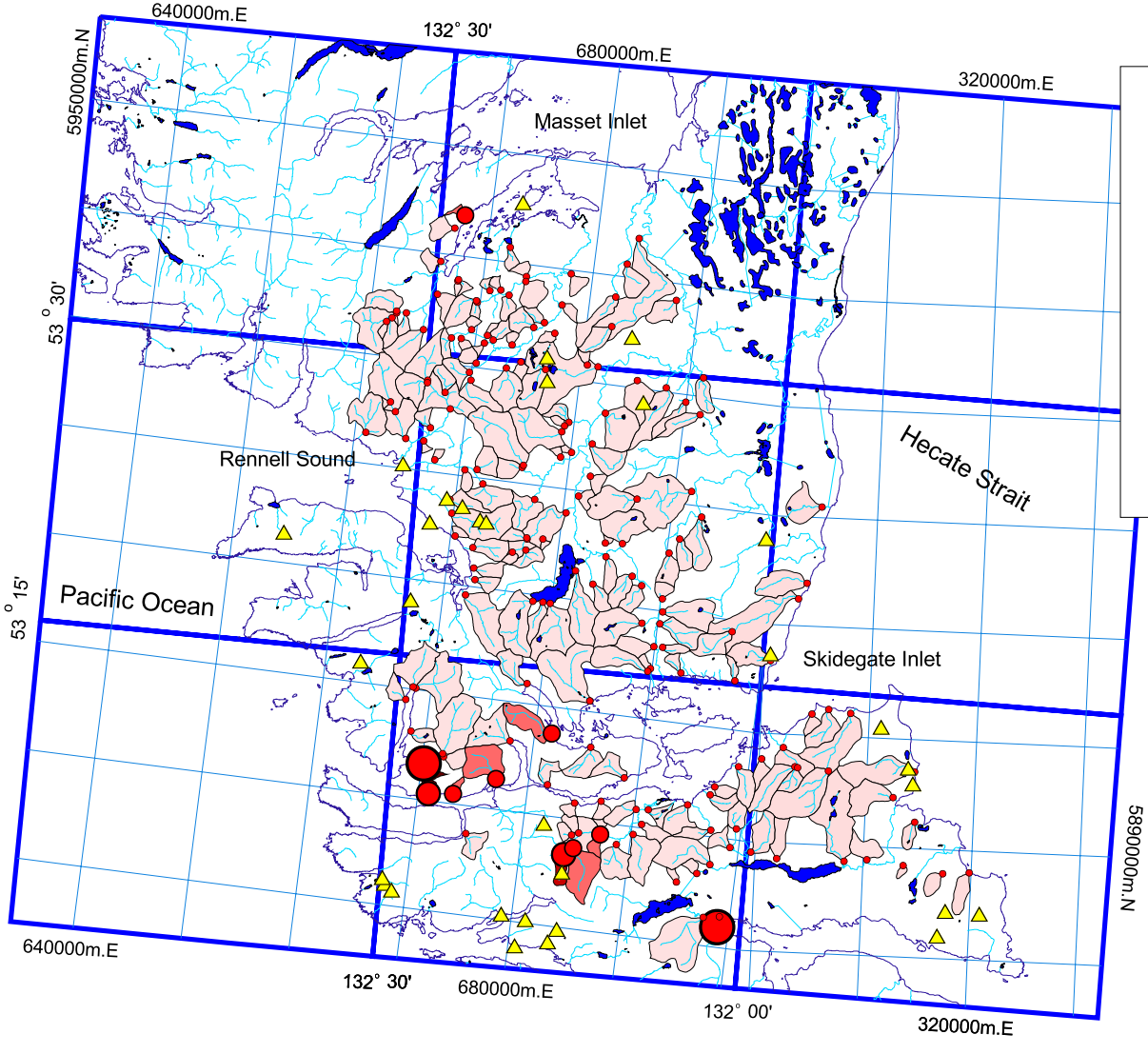
MINFILE Occurrence

Cobalt (ppm) by ICPMS

- **26.5 to 28.1**
- **25.8 to 26.4**
- **21.9 to 25.7**
- **2.8 to 21.8**

Map 12

Co



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

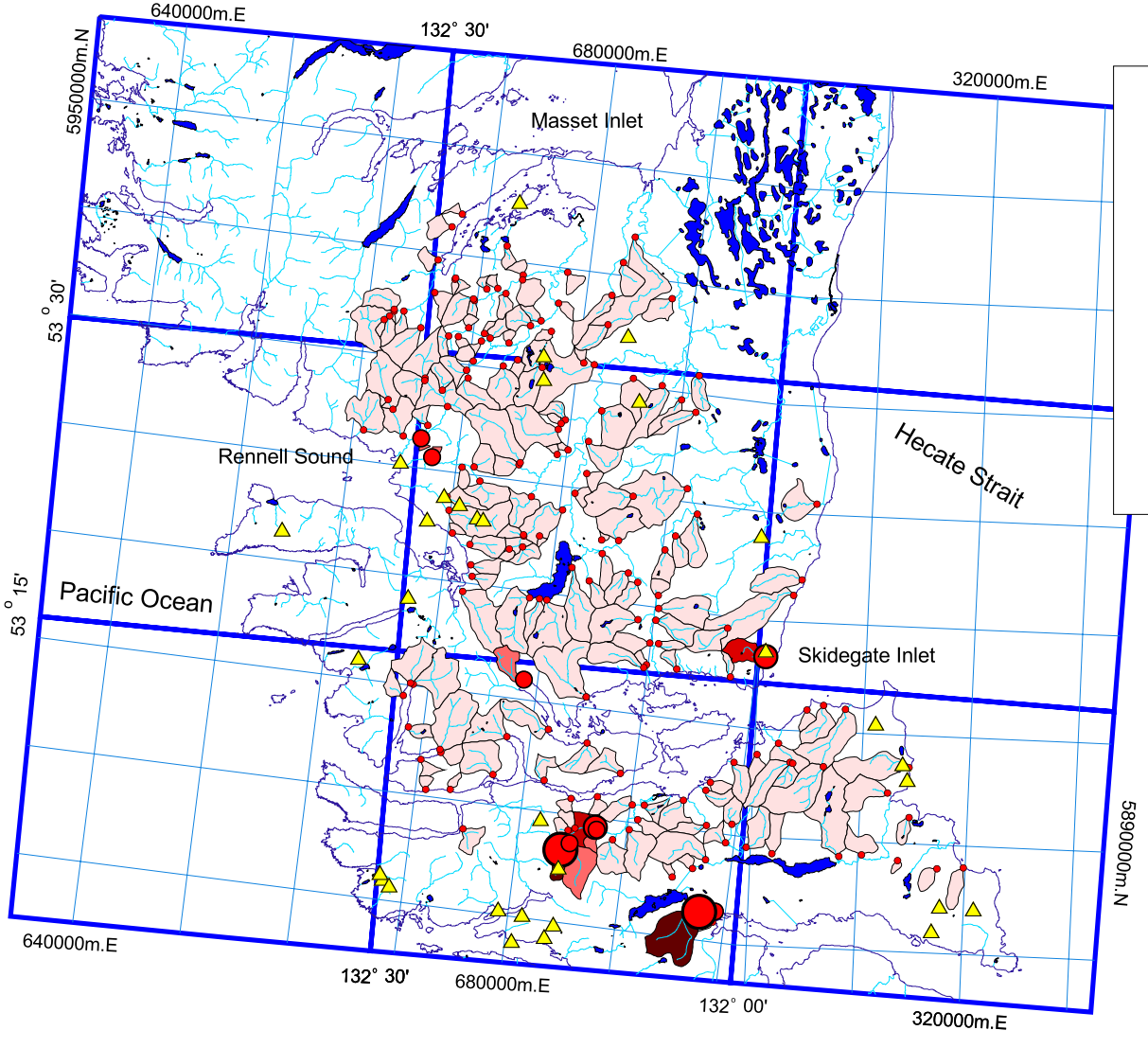
MINFILE Occurrence

Chromium (ppm) by ICPMS

- **68.1 to 95.0**
- **59.3 to 68.0**
- **49.2 to 59.2**
- **2.8 to 49.1**

Map 13

Cr



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

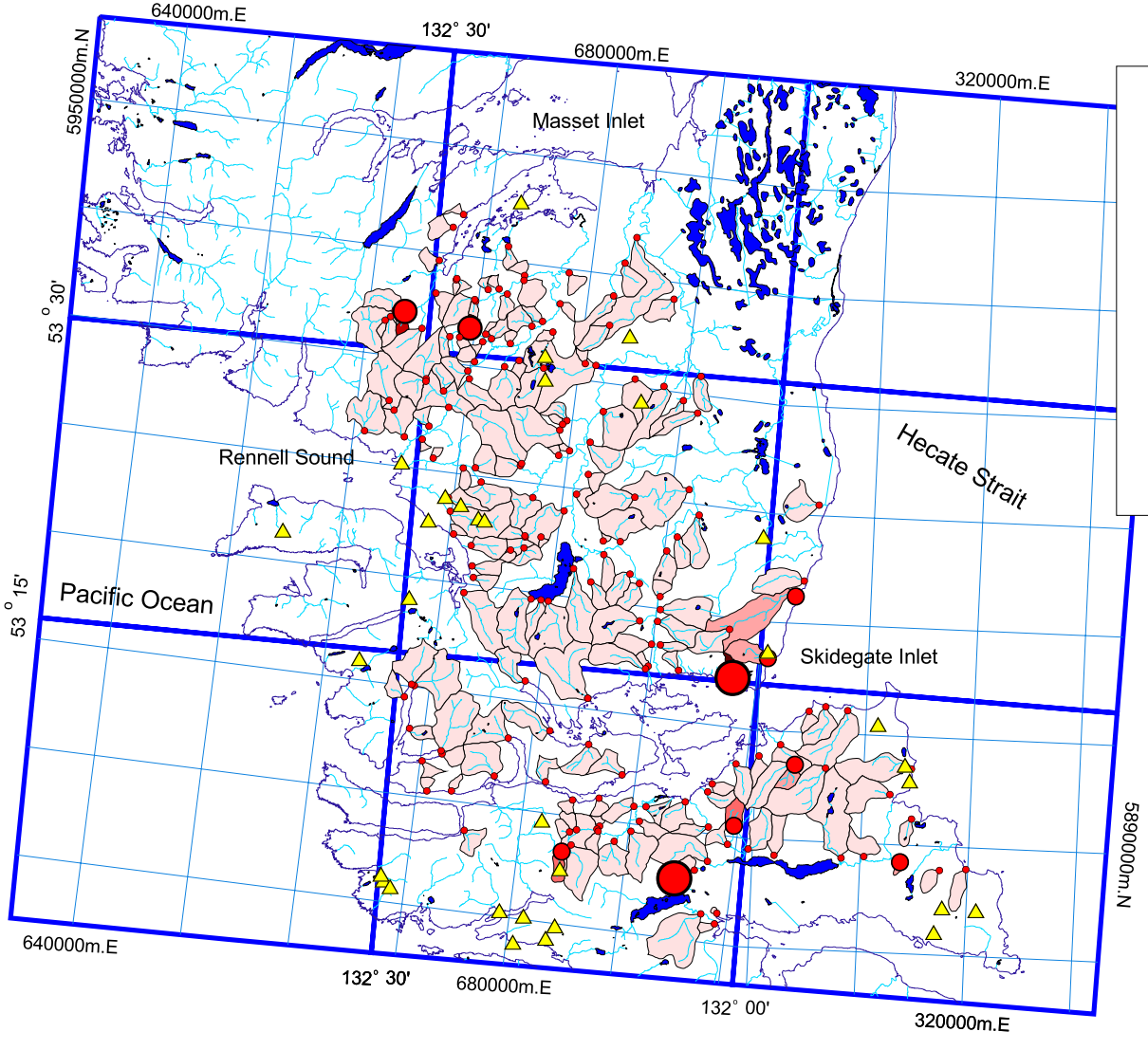
MINFILE Occurrence

Copper (ppm) by ICPMS

- **76.05 to 165.88**
- **70.13 to 76.04**
- **50.84 to 70.12**
- **2.87 to 50.83**

Map 14

Cu



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

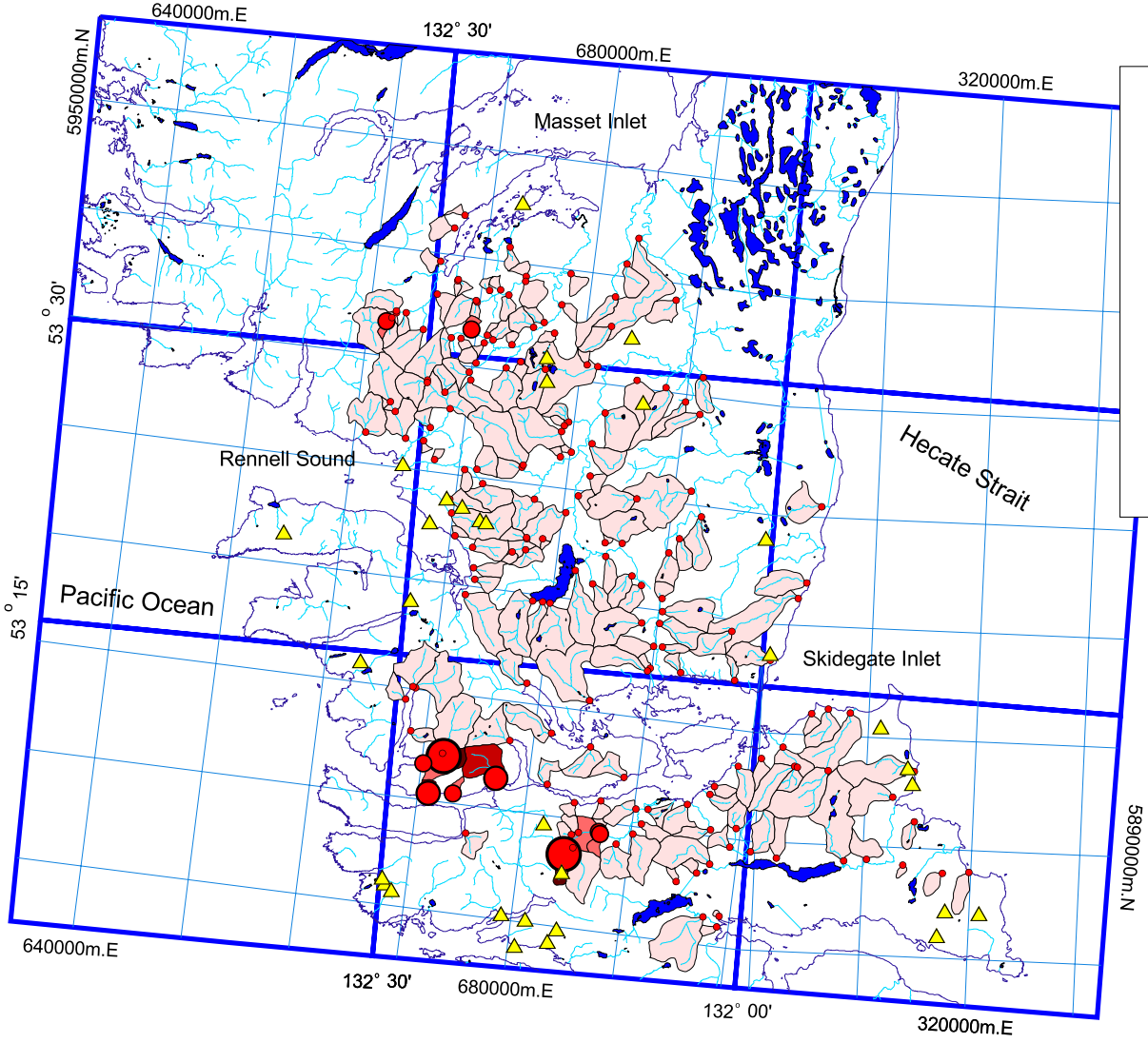
MINFILE Occurrence

Iron (%) by ICPMS

- **5.62 to 6.10**
- **5.31 to 5.61**
- **5.00 to 5.30**
- **0.97 to 4.99**

Map 15

Fe



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

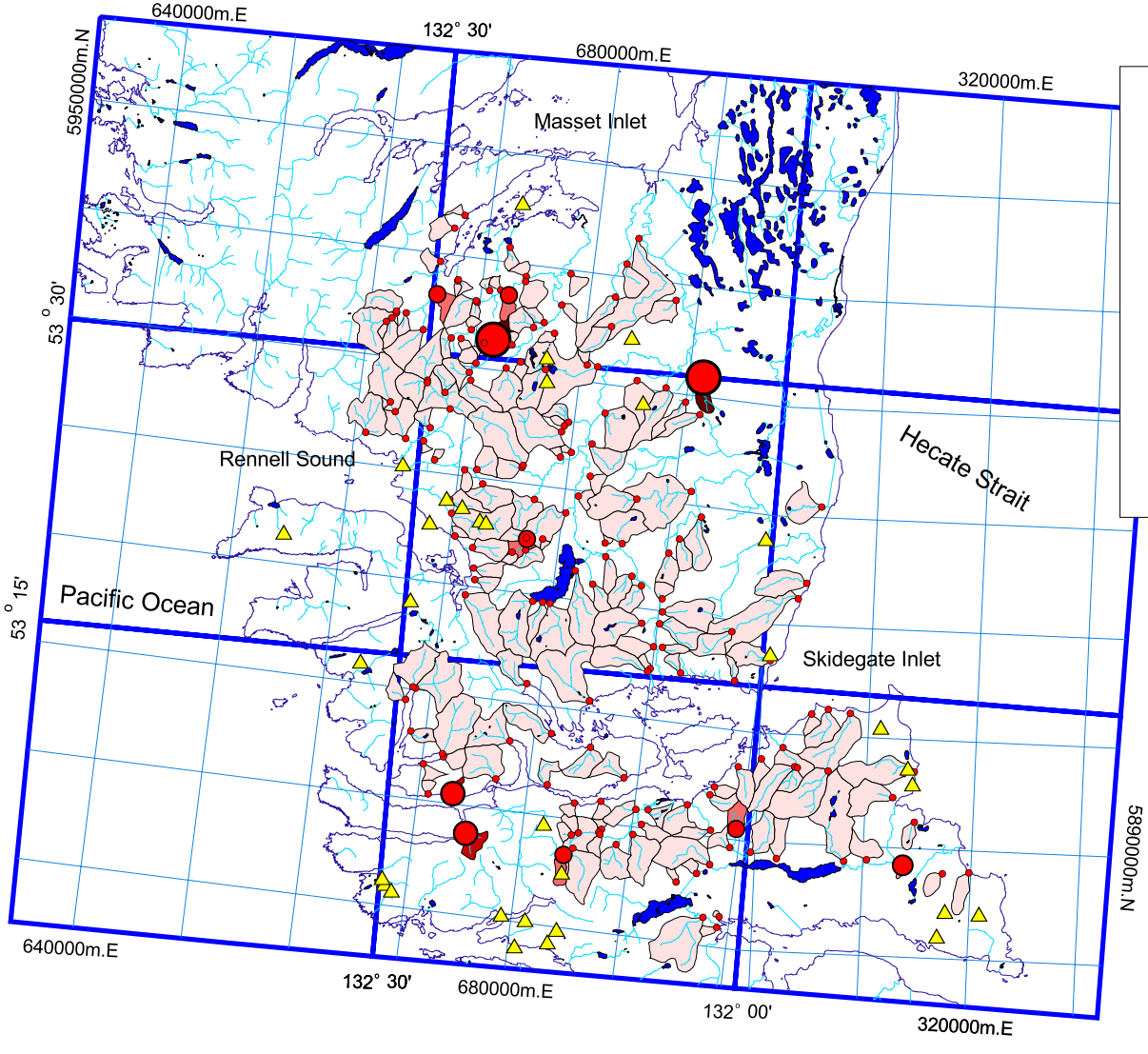
MINFILE Occurrence

Gallium (ppm) by ICPMS

- **11.3 to 12.3**
- **10.6 to 11.2**
- **10.2 to 10.5**
- **3.0 to 10.1**

Map 16

Ga



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

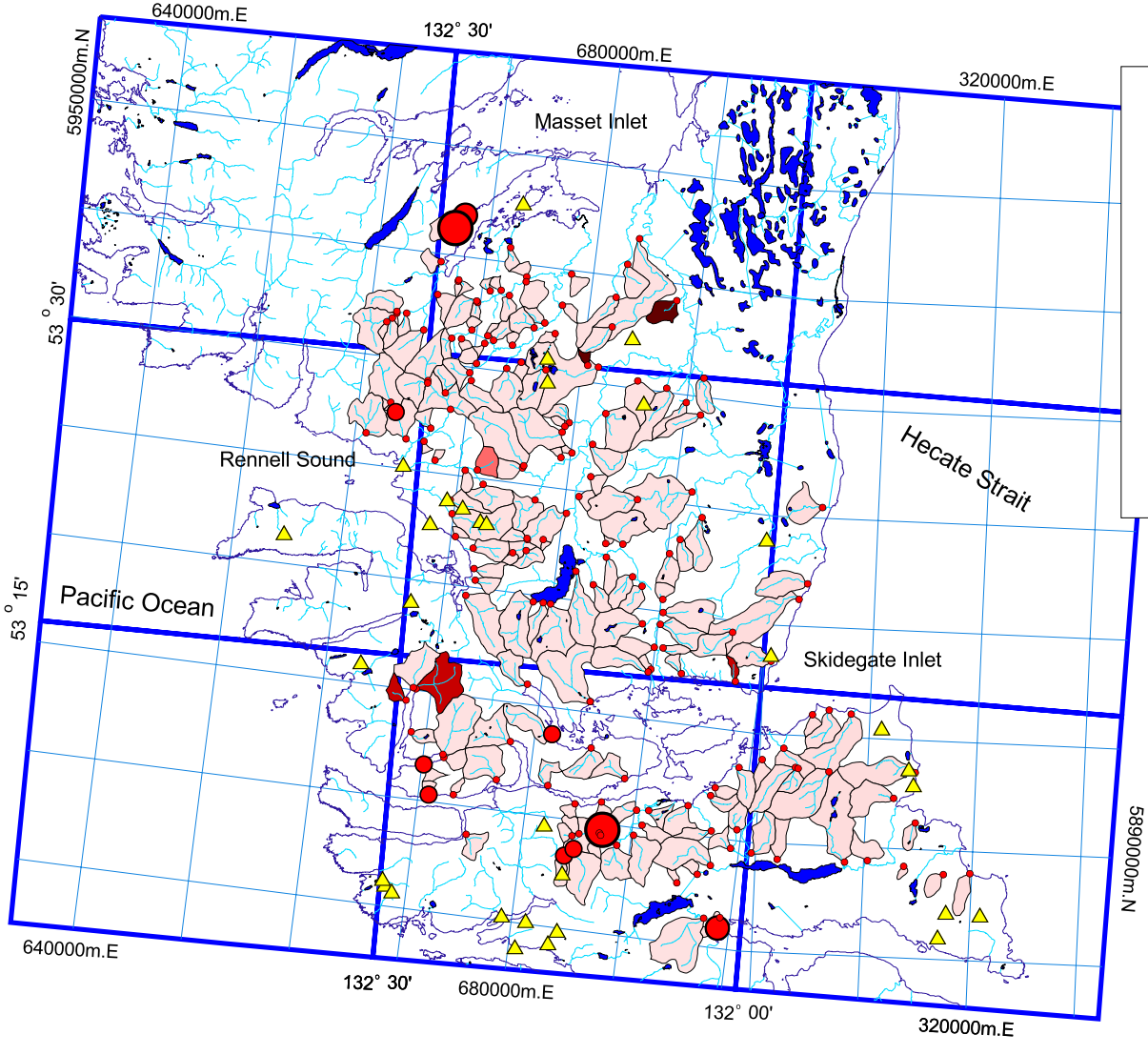
MINFILE Occurrence

Mercury (ppb) by ICPMS

- **13409 to 19101**
- **9386 to 13408**
- **4510 to 9685**
- **13 to 4509**

Map 17

Hg



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

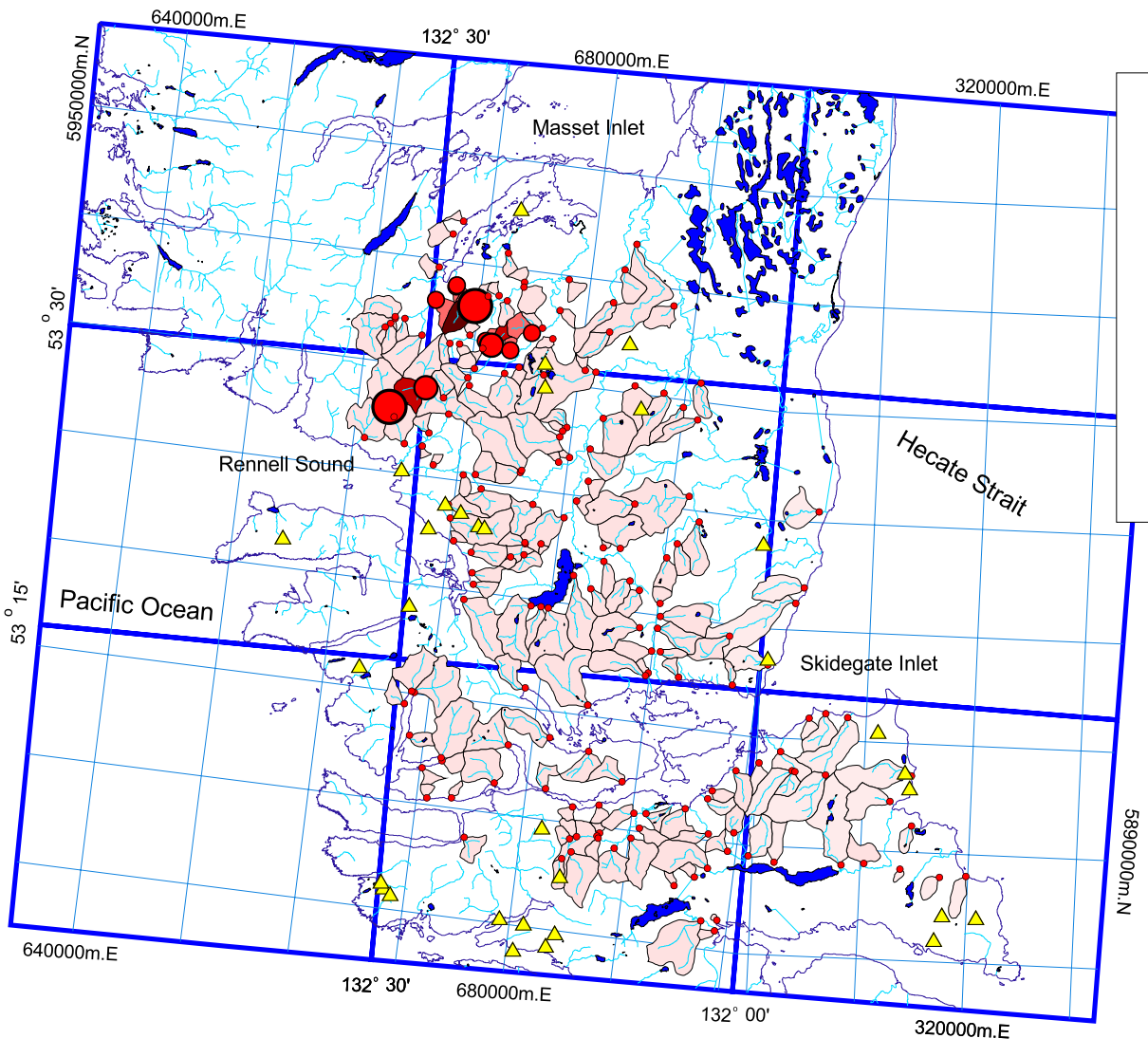
MINFILE Occurrence

Potassium (%) by ICPMS

- **0.13 to 0.17**
- **0.12 to 0.125**
- **0.10 to 0.115**
- **0.02 to 0.09**

Map 18

K



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

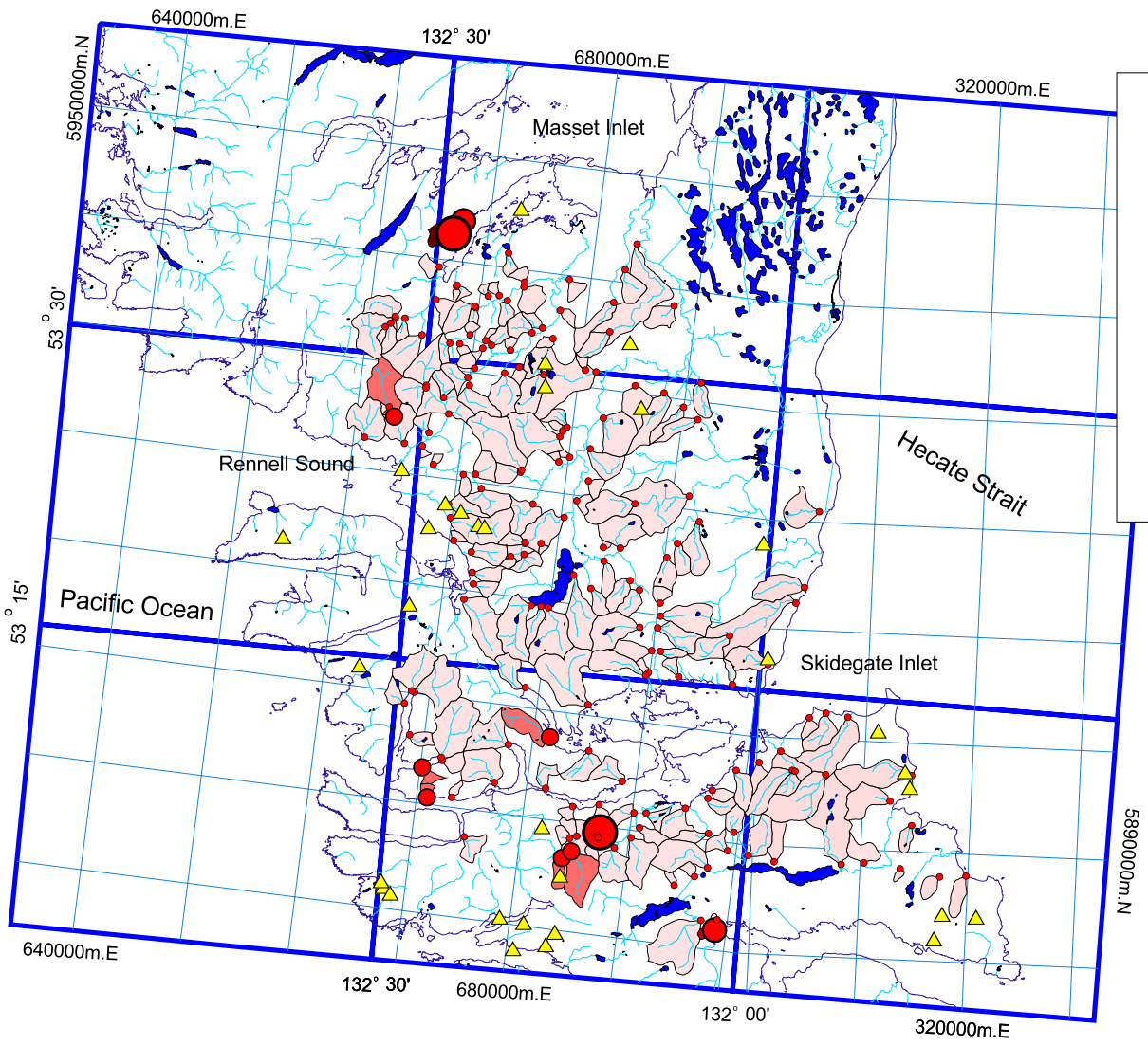
MINFILE Occurrence

Lanthanum (ppm) by ICPMS

- **0.13 to 0.17**
- **0.12 to 0.125**
- **0.11 to 0.115**
- **0.02 to 0.09**

Map 19

La



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

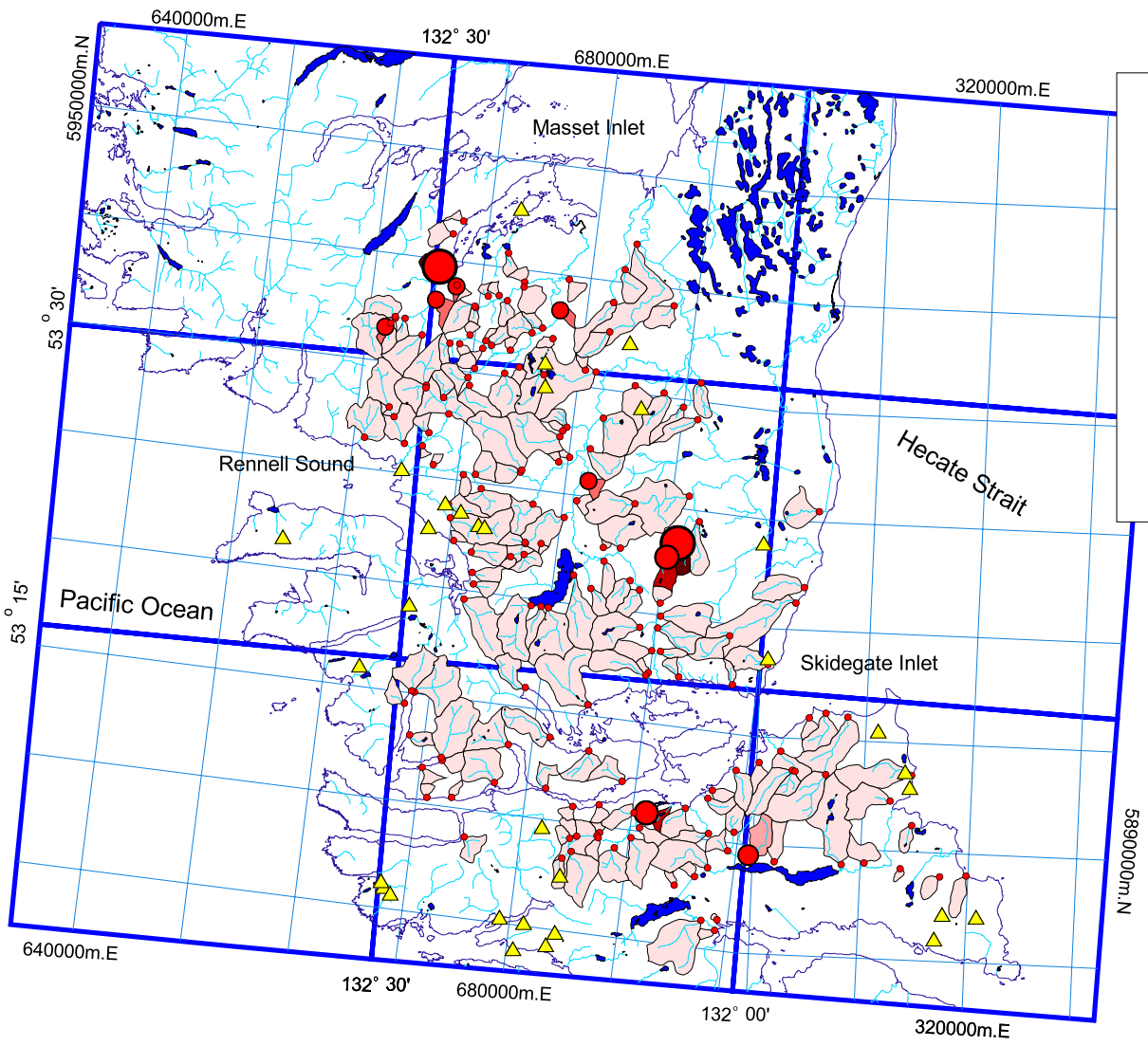
MINFILE Occurrence

Magnesium (%) by ICPMS

- **1.87 to 2.04**
- **1.73 to 1.86**
- **1.42 to 1.72**
- **0.02 to 1.71**

Map 20

Mg



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

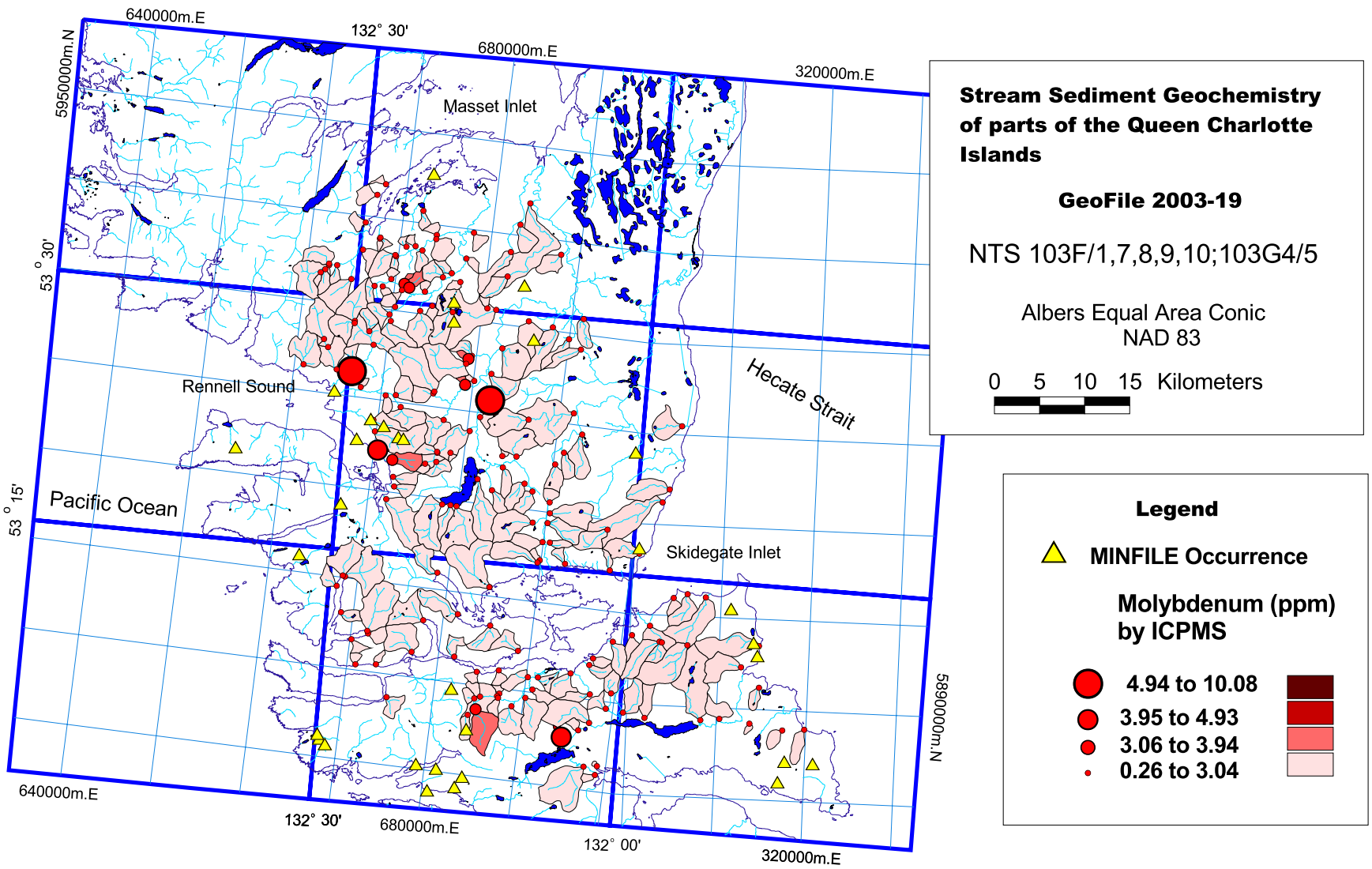
MINFILE Occurrence

Manganese (ppm) by ICPMS

- **5778 to 7492**
- **3812 to 5777**
- **2442 to 3811**
- **145 to 2441**

Map 21

Mn



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0 5 10 15 Kilometers

Legend

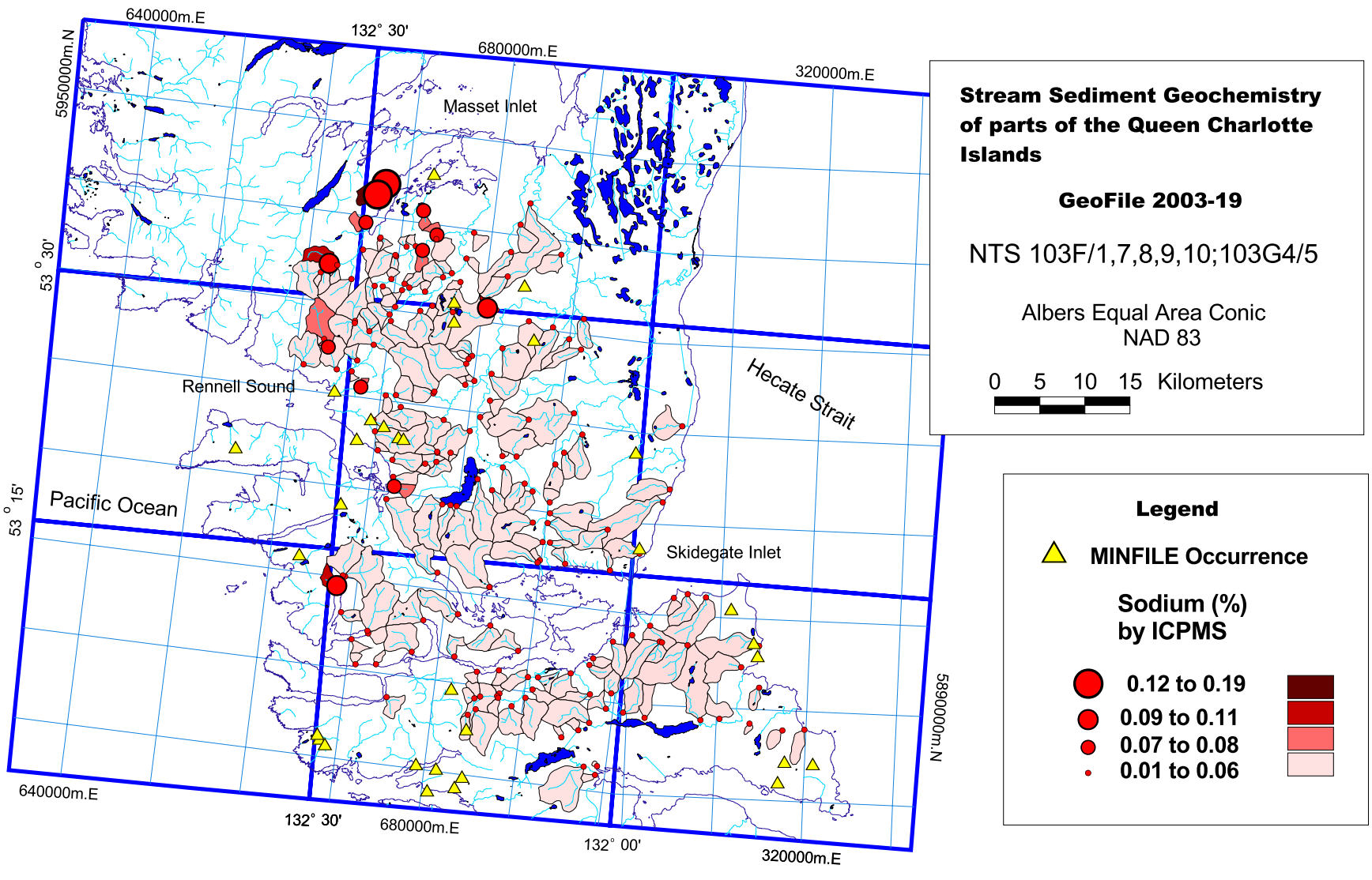
MINFILE Occurrence

Molybdenum (ppm) by ICPMS

- **4.94 to 10.08**
- **3.95 to 4.93**
- **3.06 to 3.94**
- **0.26 to 3.04**

Map 22

Mo



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

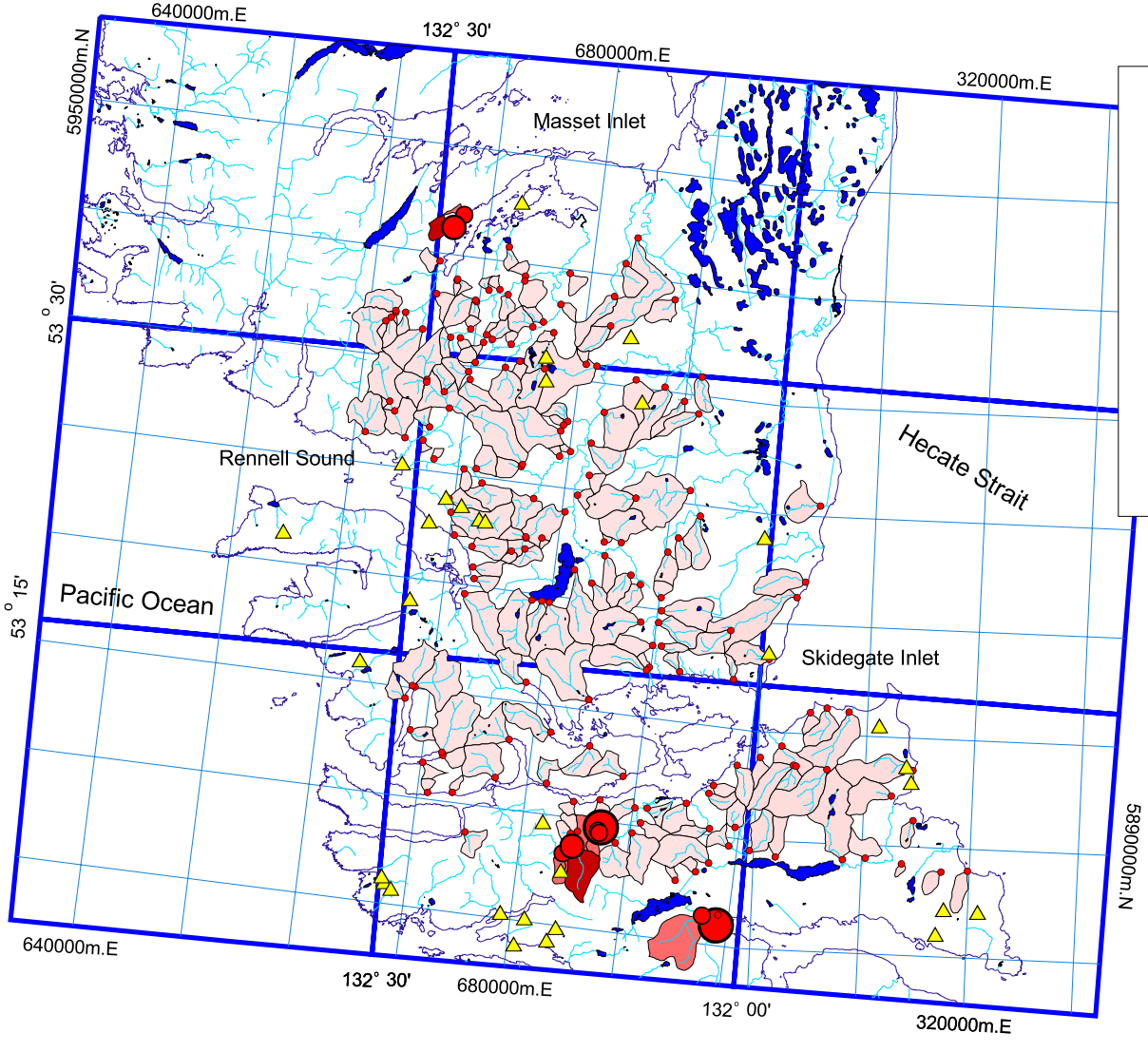
MINFILE Occurrence

Sodium (%) by ICPMS

- **0.12 to 0.19**
- **0.09 to 0.11**
- **0.07 to 0.08**
- **0.01 to 0.06**

Map 23

Na



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Legend

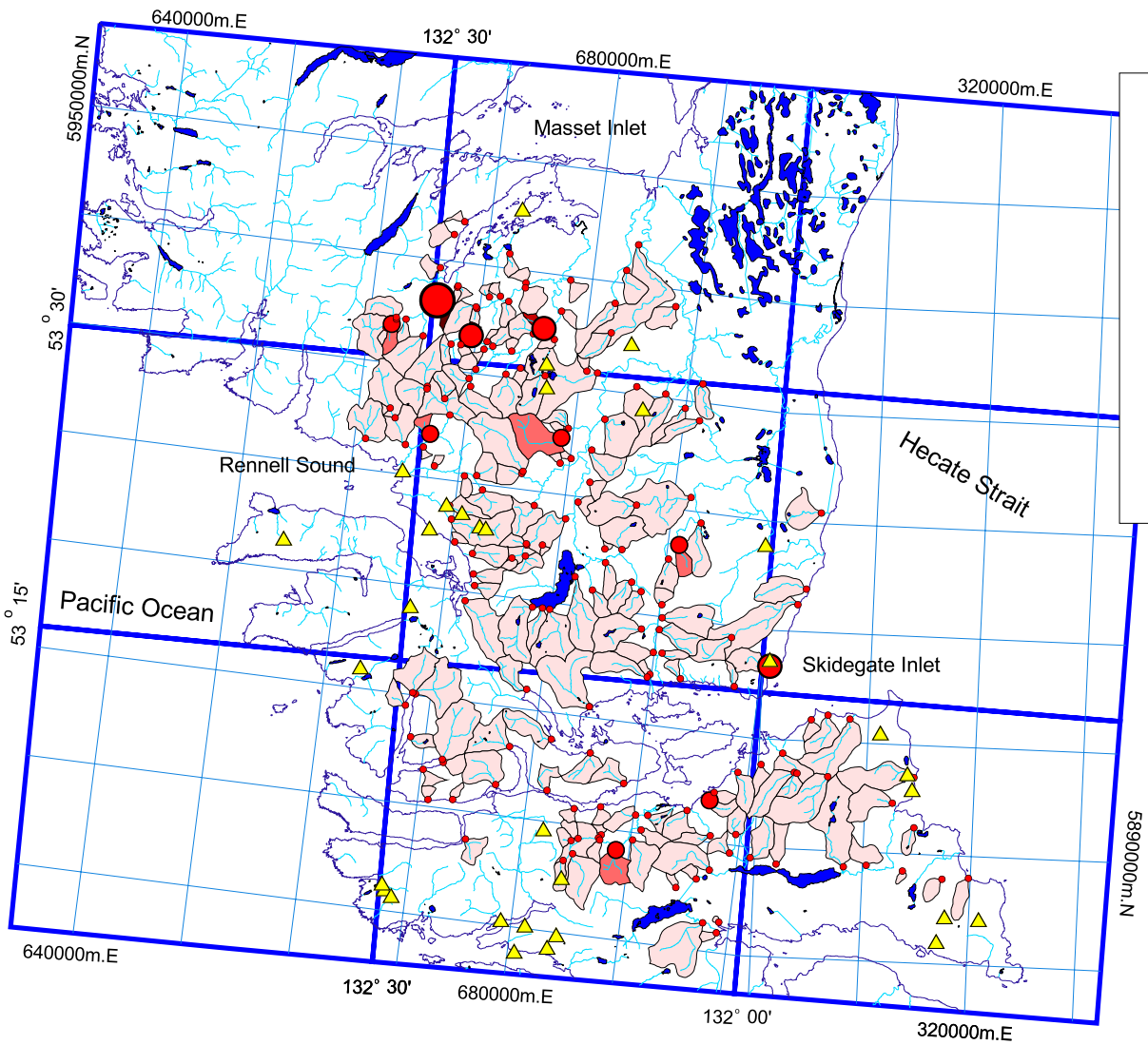
MINFILE Occurrence

Nickel (ppm) by ICPMS

- **72.3 to 90.1**
- **64.6 to 72.2**
- **39.9 to 64.5**
- **1.60 to 39.8**

Map 24

Ni



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Legend

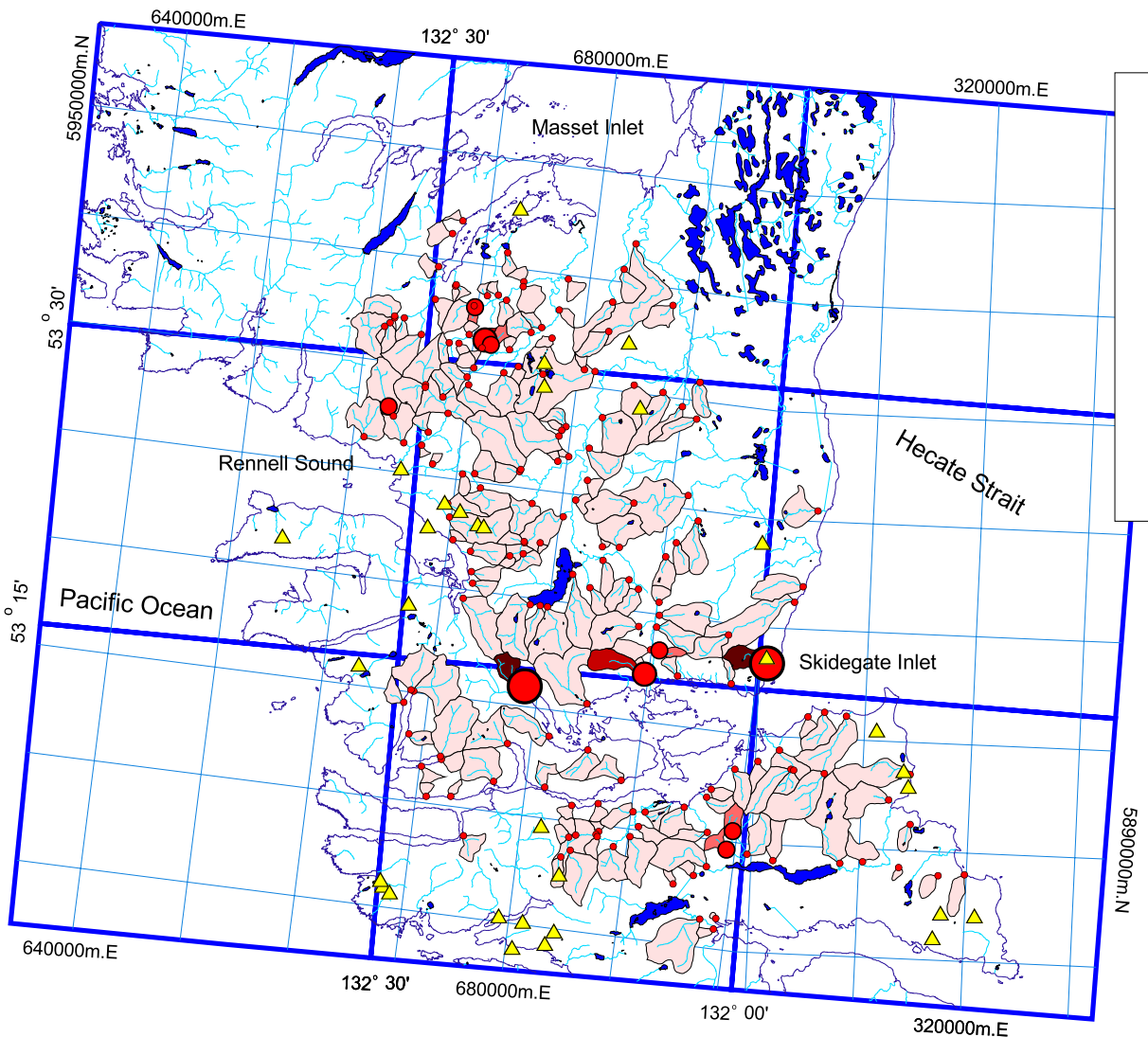
MINFILE Occurrence

Phosphorus (%) by ICPMS

- **72.3 to 90.1**
- **64.6 to 72.2**
- **39.9 to 64.5**
- **1.60 to 39.8**

Map 25

P



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Legend

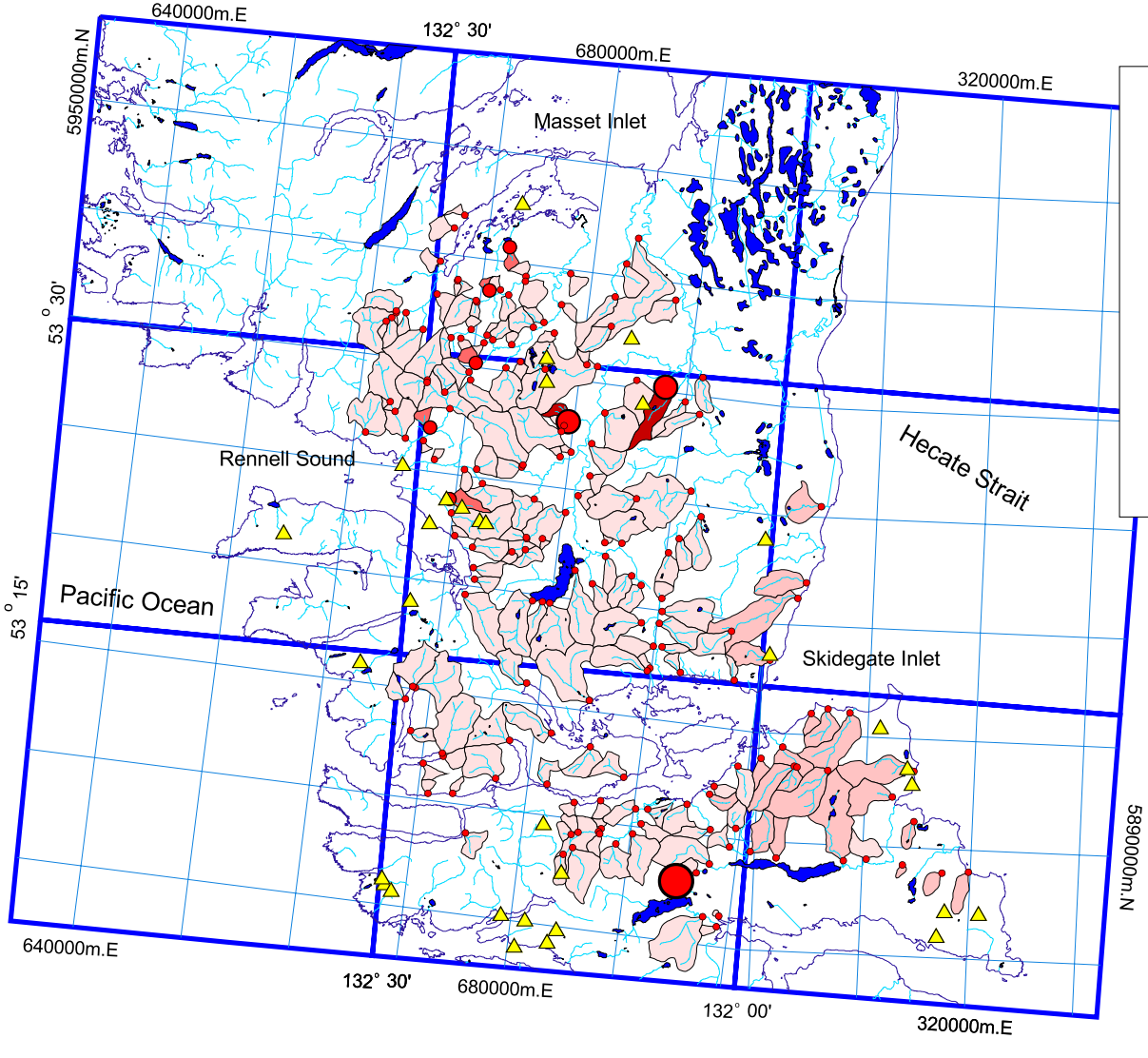
MINFILE Occurrence

Lead (ppm) by ICPMS

- **14.79 to 41.07**
- **13.38 to 14.78**
- **11.34 to 13.37**
- **1.72 to 11.33**

Map 26

Pb



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NAD 83

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Legend

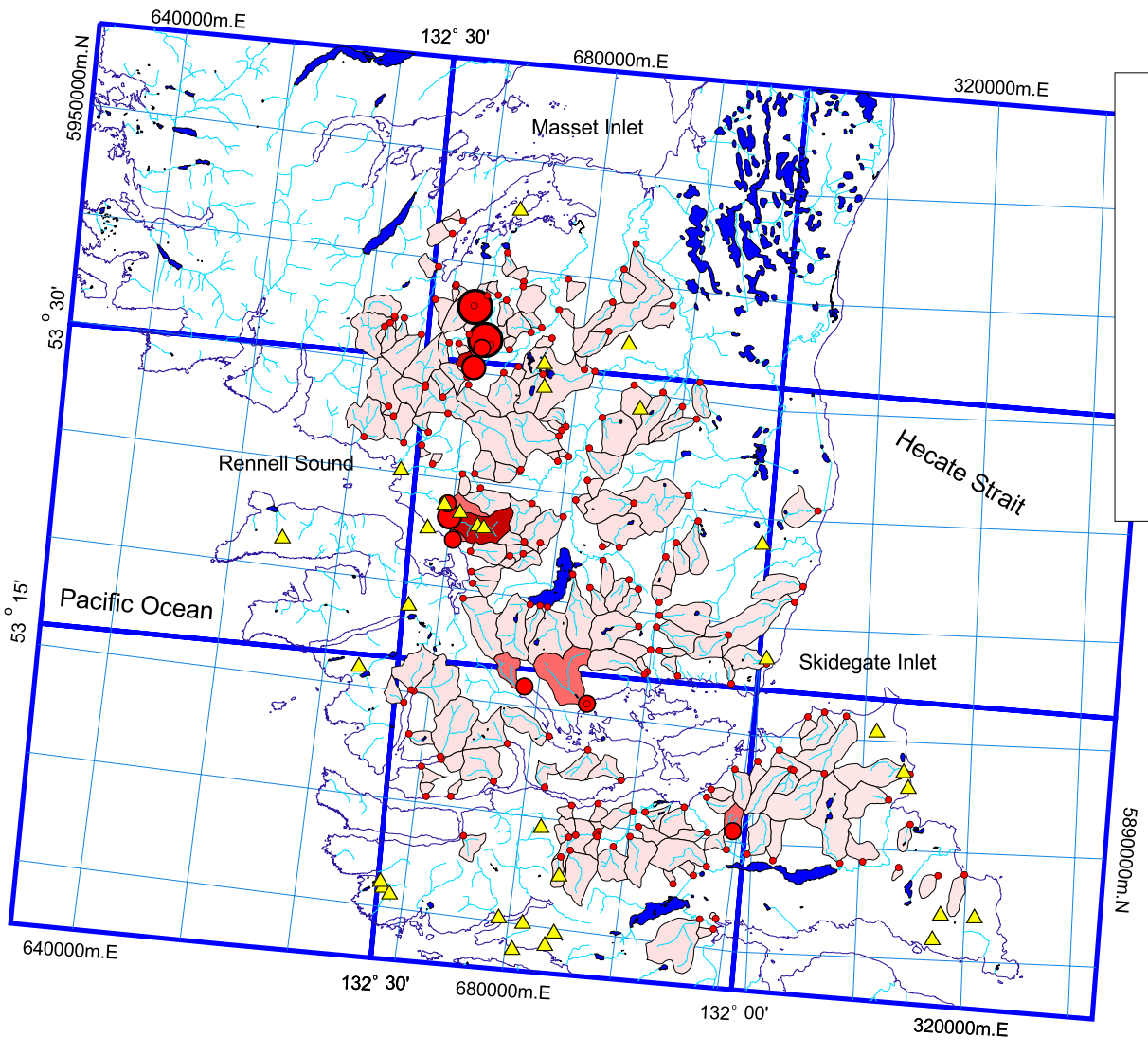
MINFILE Occurrence

Sulphur (%) by ICPMS

- **0.54 to 2.08**
- **0.30 to 0.53**
- **0.22 to 0.29**
- **0.01 to 0.21**

Map 27

S



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

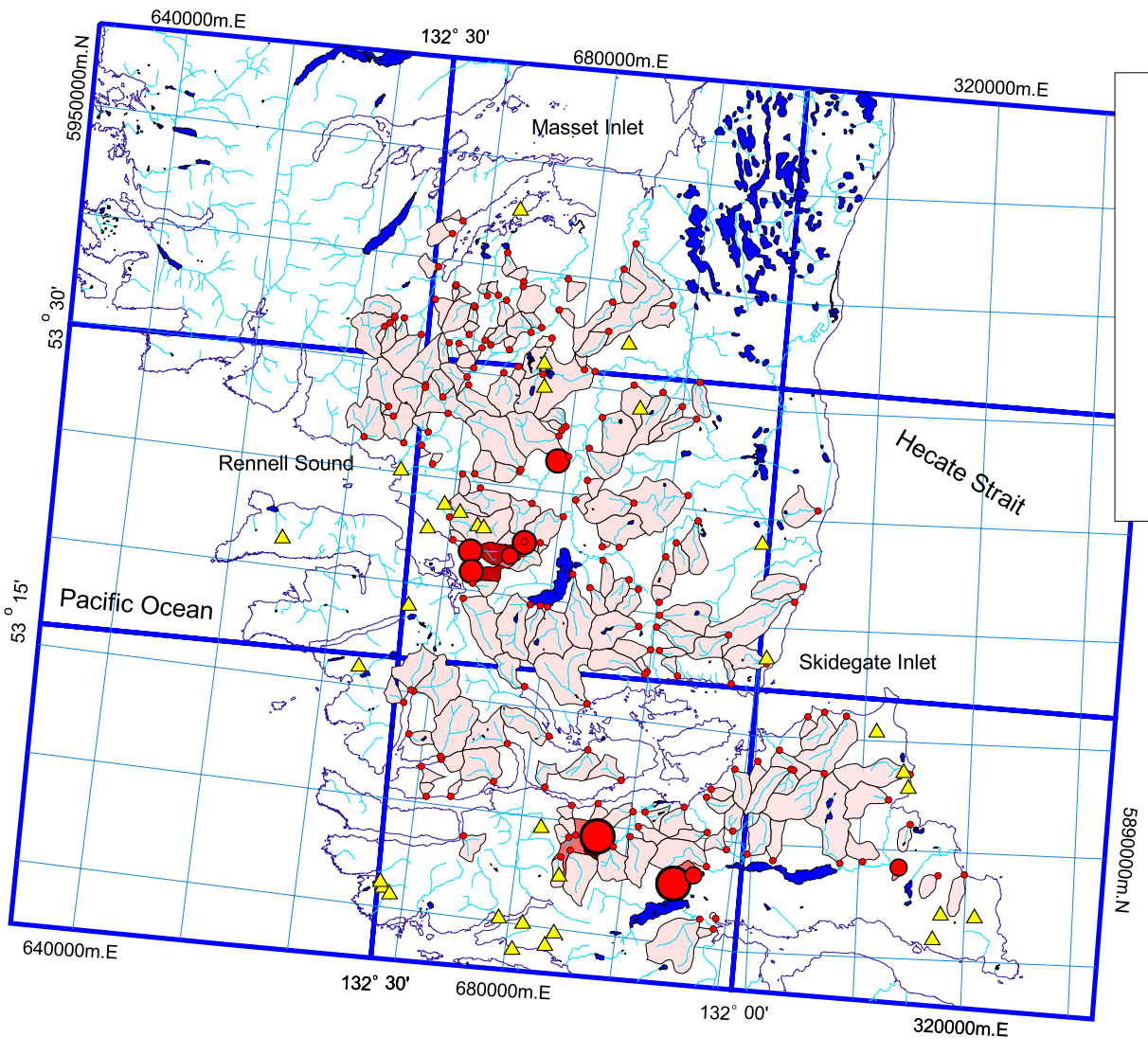
MINFILE Occurrence

Antimony (ppm) by ICPMS

- **2.88 to 5.19**
- **2.61 to 2.87**
- **1.59 to 2.60**
- **0.04 to 1.58**

Map 28

Sb



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

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Legend

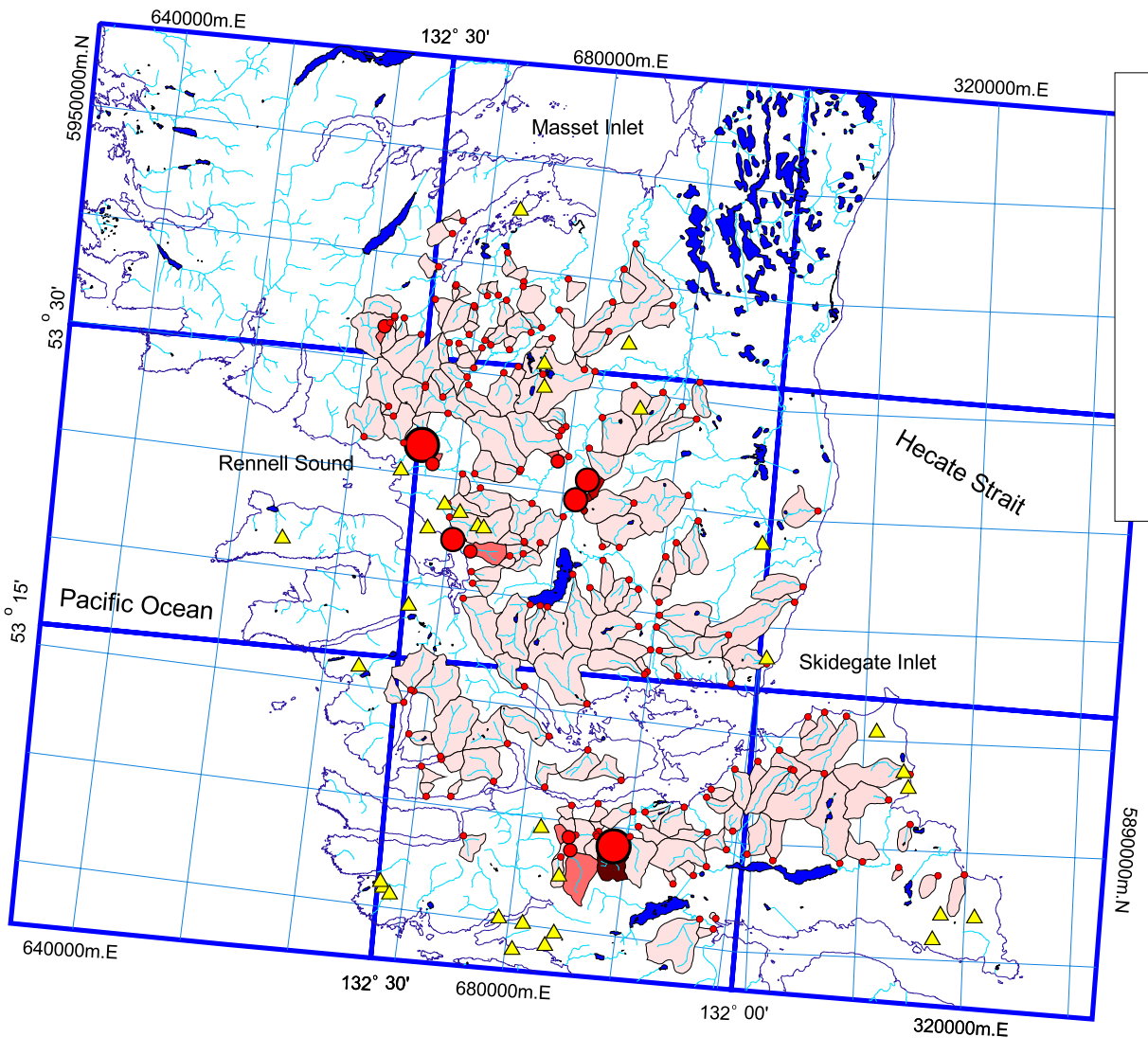
MINFILE Occurrence

Scandium (ppm) by ICPMS

- **7.4 to 8.2**
- **6.9 to 7.3**
- **6.6 to 6.8**
- **0.9 to 6.1**

Map 29

Sc



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

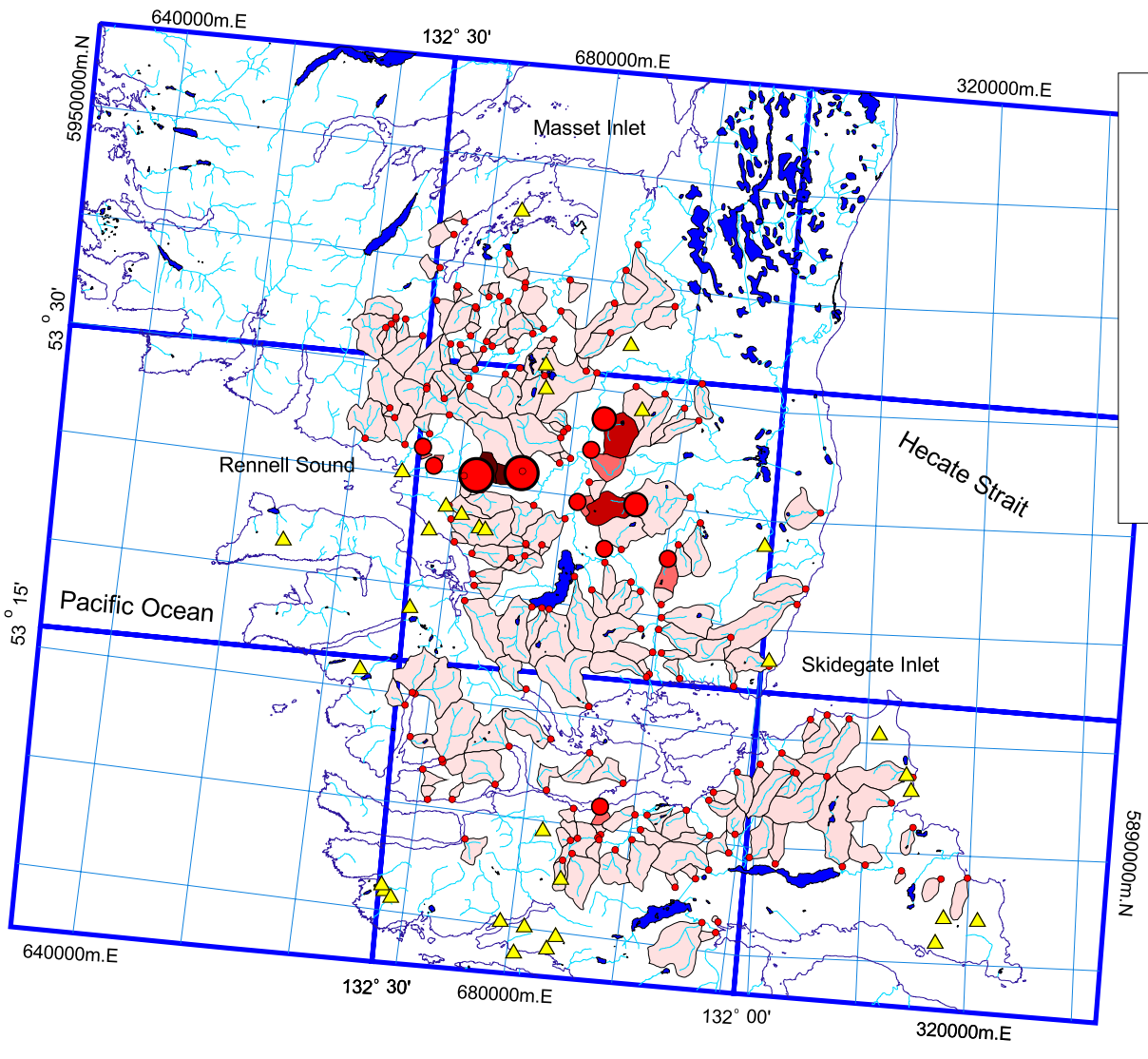
MINFILE Occurrence

Selenium (ppm) by ICPMS

- **2.1 to 4.1**
- **1.8 to 2.0**
- **1.6 to 1.7**
- **0.1 to 1.5**

Map 30

Se



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

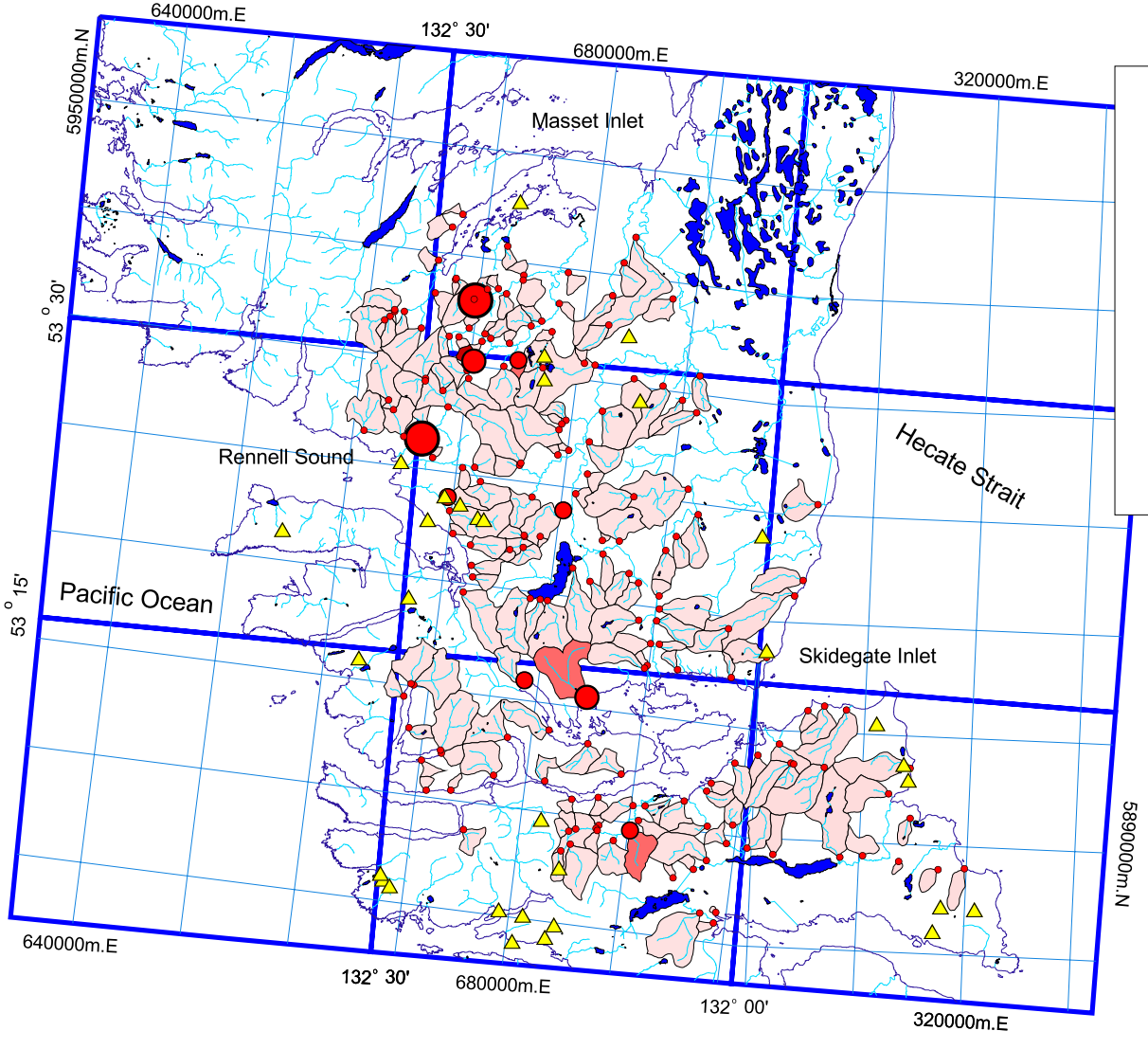
MINFILE Occurrence

Strontium (ppm) by ICPMS

- **169.9 to 186.2**
- **141.4 to 169.8**
- **117.1 to 141.3**
- **22.7 to 117.0**

Map 31

Sr



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

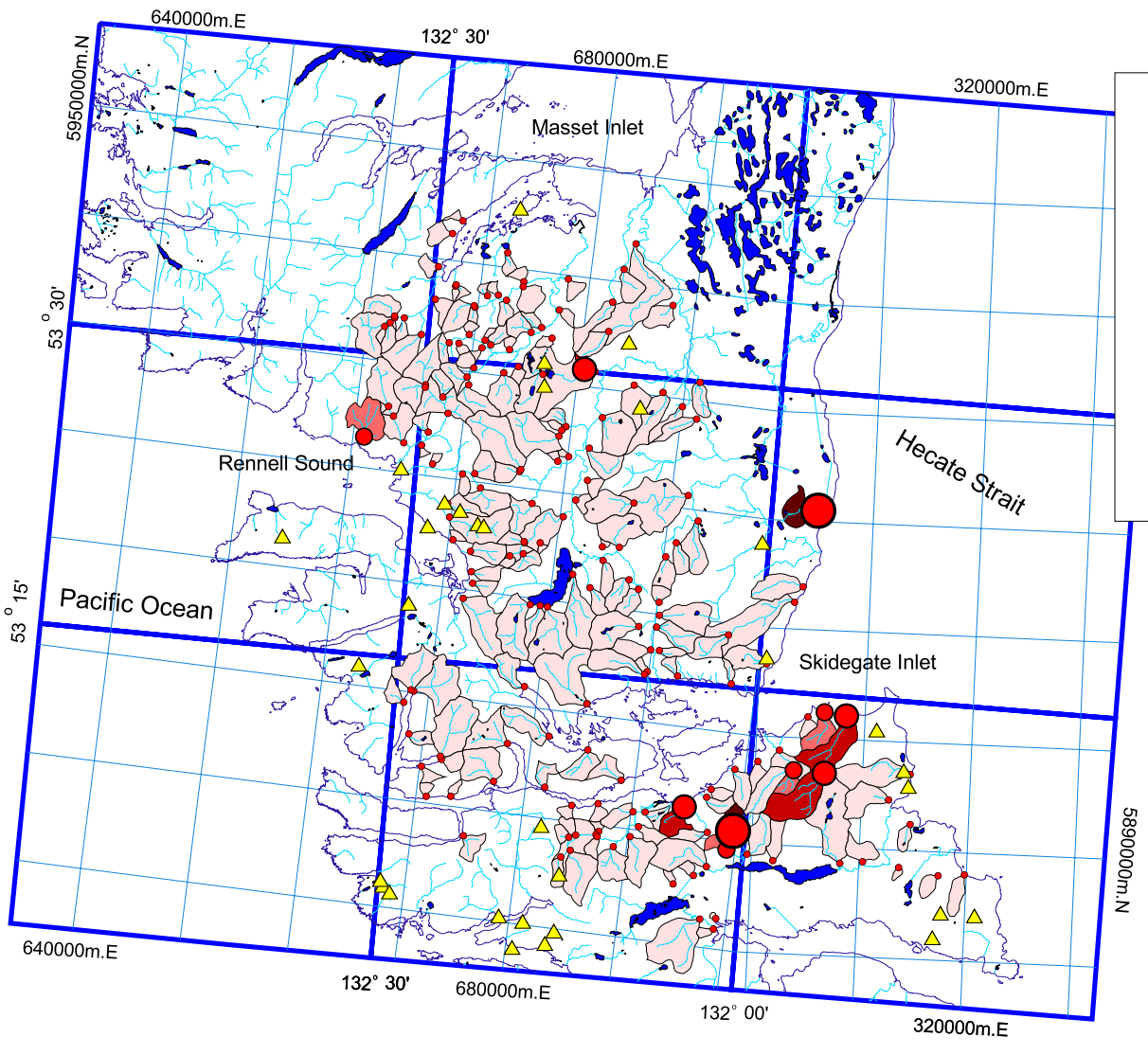
MINFILE Occurrence

Tellurium (ppm) by ICPMS

- **0.51 to 2.57**
- **0.12 to 0.50**
- **0.08 to 0.11**
- **0.02 to 0.07**

Map 32

Te



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

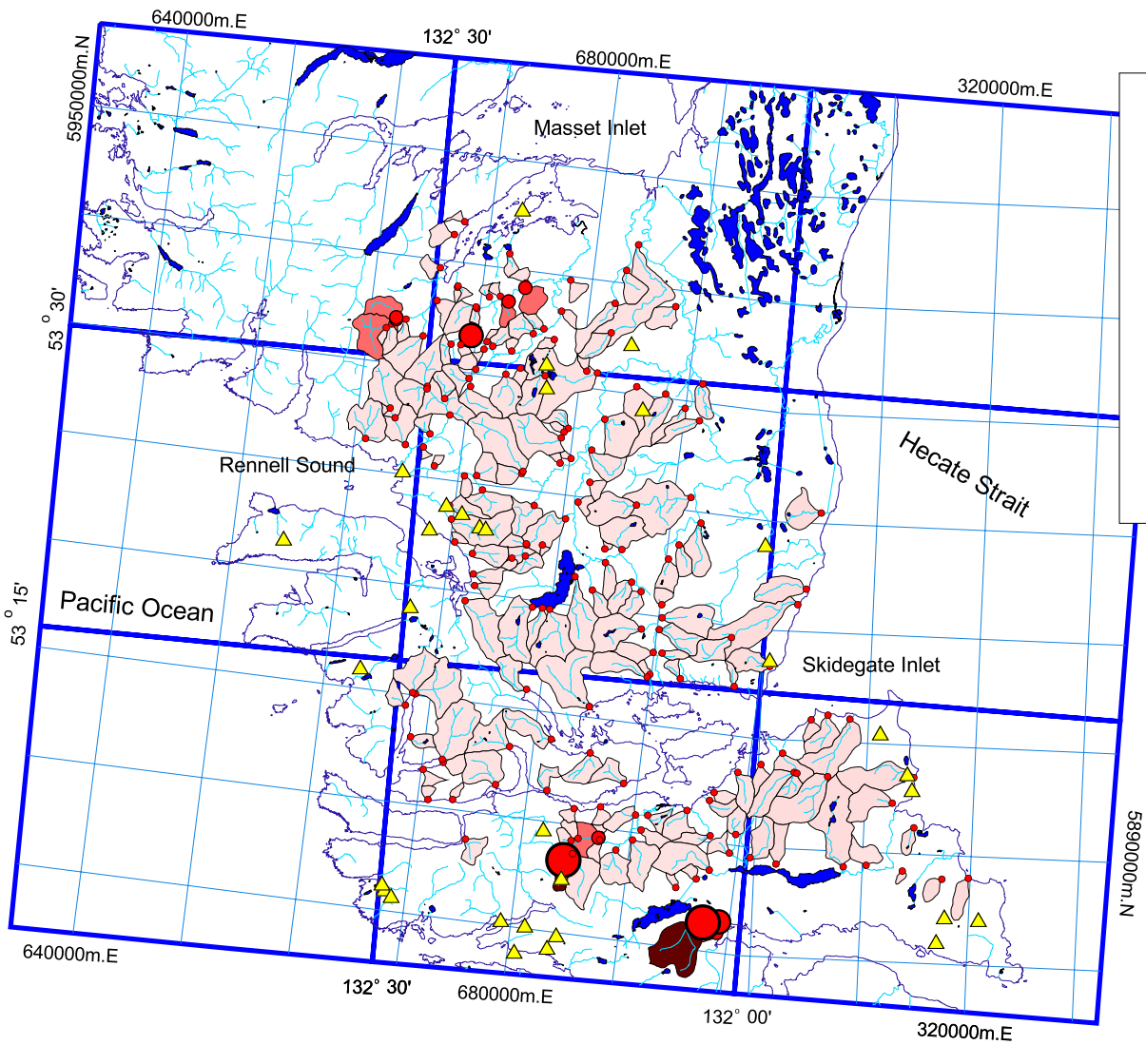
MINFILE Occurrence

Thorium (ppm) by ICPMS

- **3.2 to 4.4**
- **2.9 to 3.1**
- **2.7 to 2.8**
- **0.2 to 2.6**

Map 33

Th



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

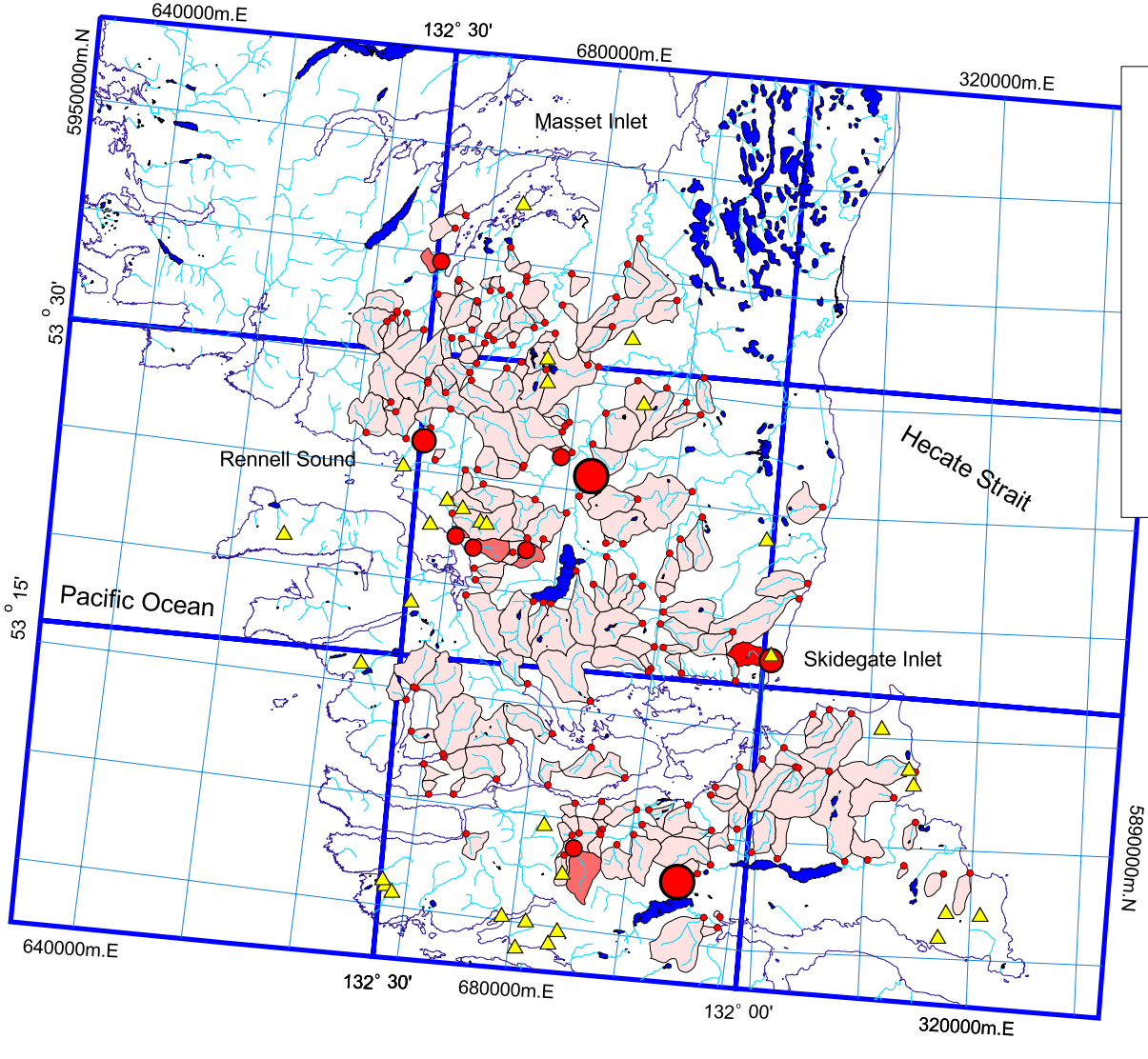
MINFILE Occurrence

Titanium (%) by ICPMS

- **0.37 to 0.6**
- **0.29 to 0.36**
- **0.22 to 0.28**
- **0.01 to 0.21**

Map 34

Ti



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

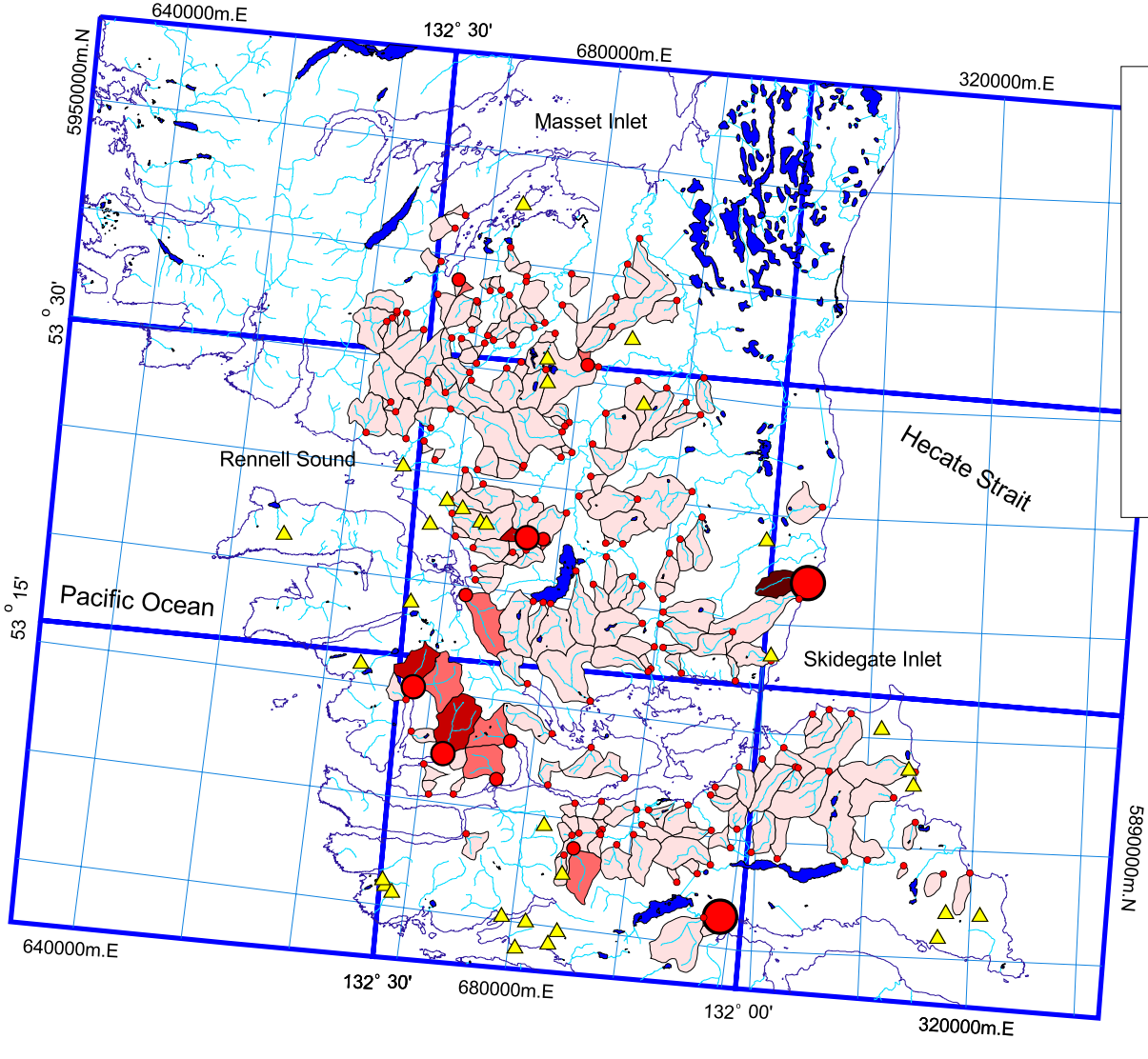
MINFILE Occurrence

Thallium (ppm) by ICPMS

- **0.46 to 0.77**
- **0.35 to 0.44**
- **0.23 to 0.34**
- **0.02 to 0.22**

Map 35

TI



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

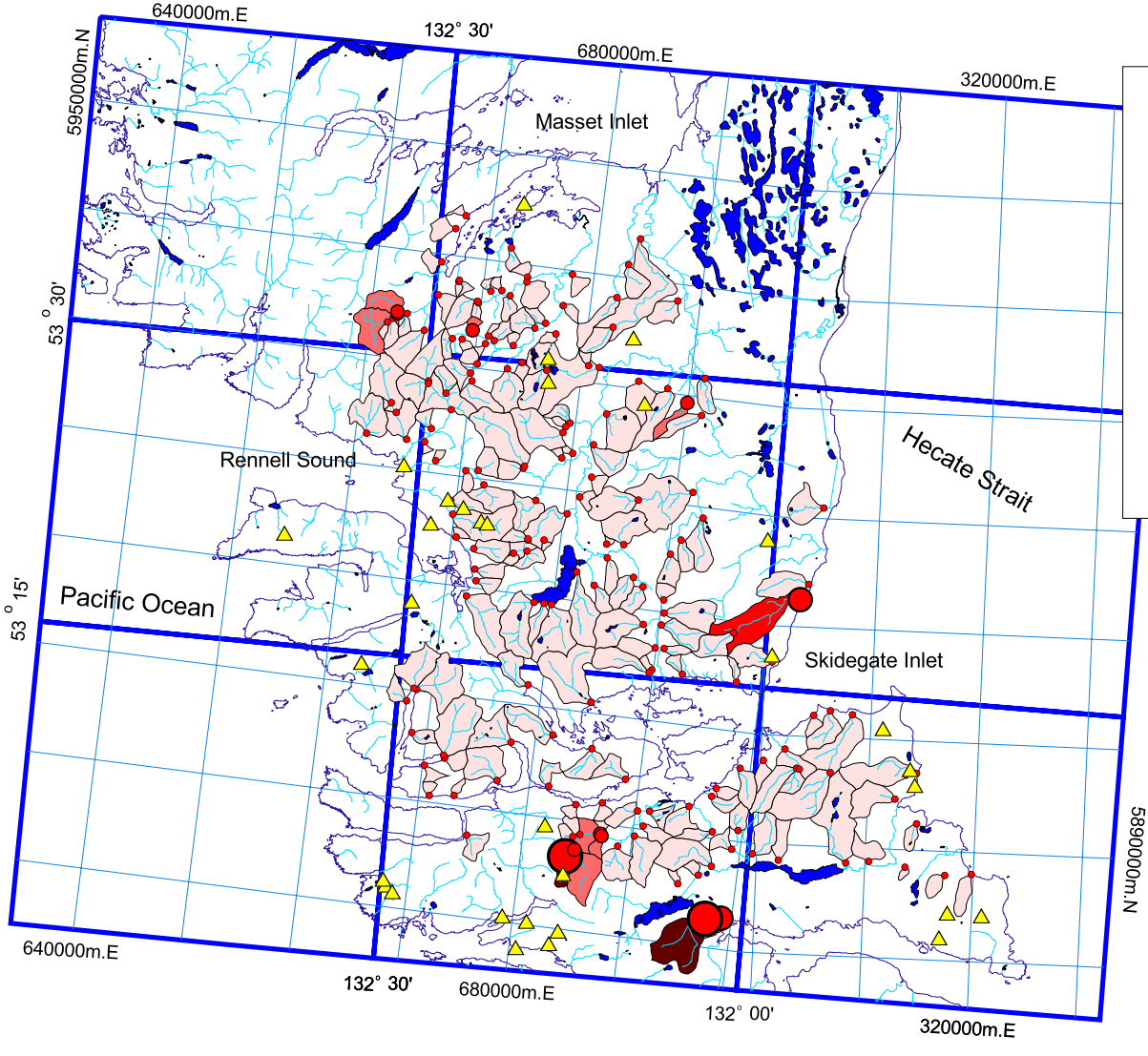
MINFILE Occurrence

Uranium (ppm) by ICPMS

- **1.5 to 2.3**
- **1.0 to 1.4**
- **0.8 to 0.9**
- **0.1 to 0.7**

Map 36

U



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

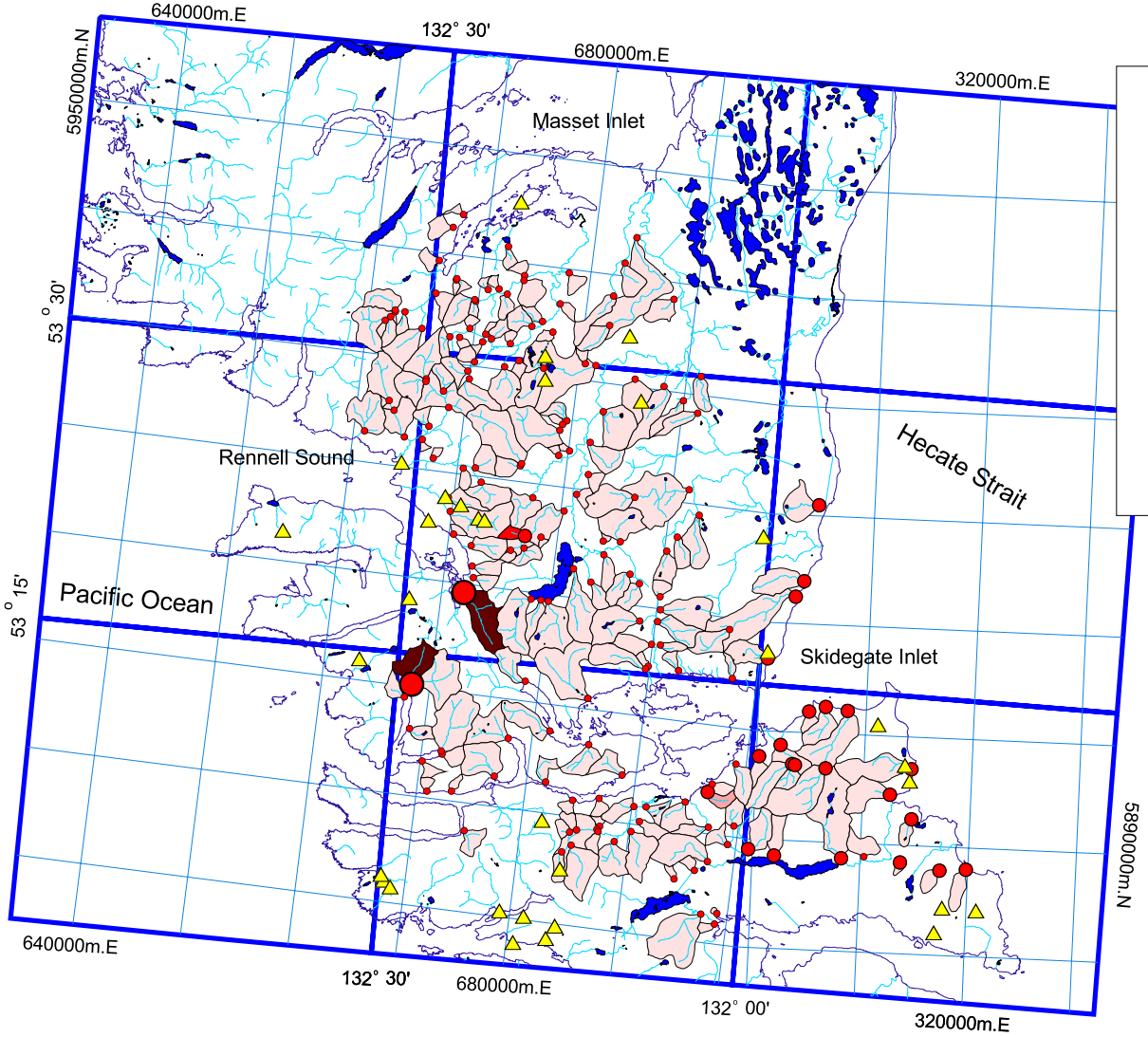
Legend

MINFILE Occurrence

Vanadium (ppm) by ICPMS

- **195 to 227**
- **182 to 194**
- **165 to 181**
- **19 to 164**

Map 37



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Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

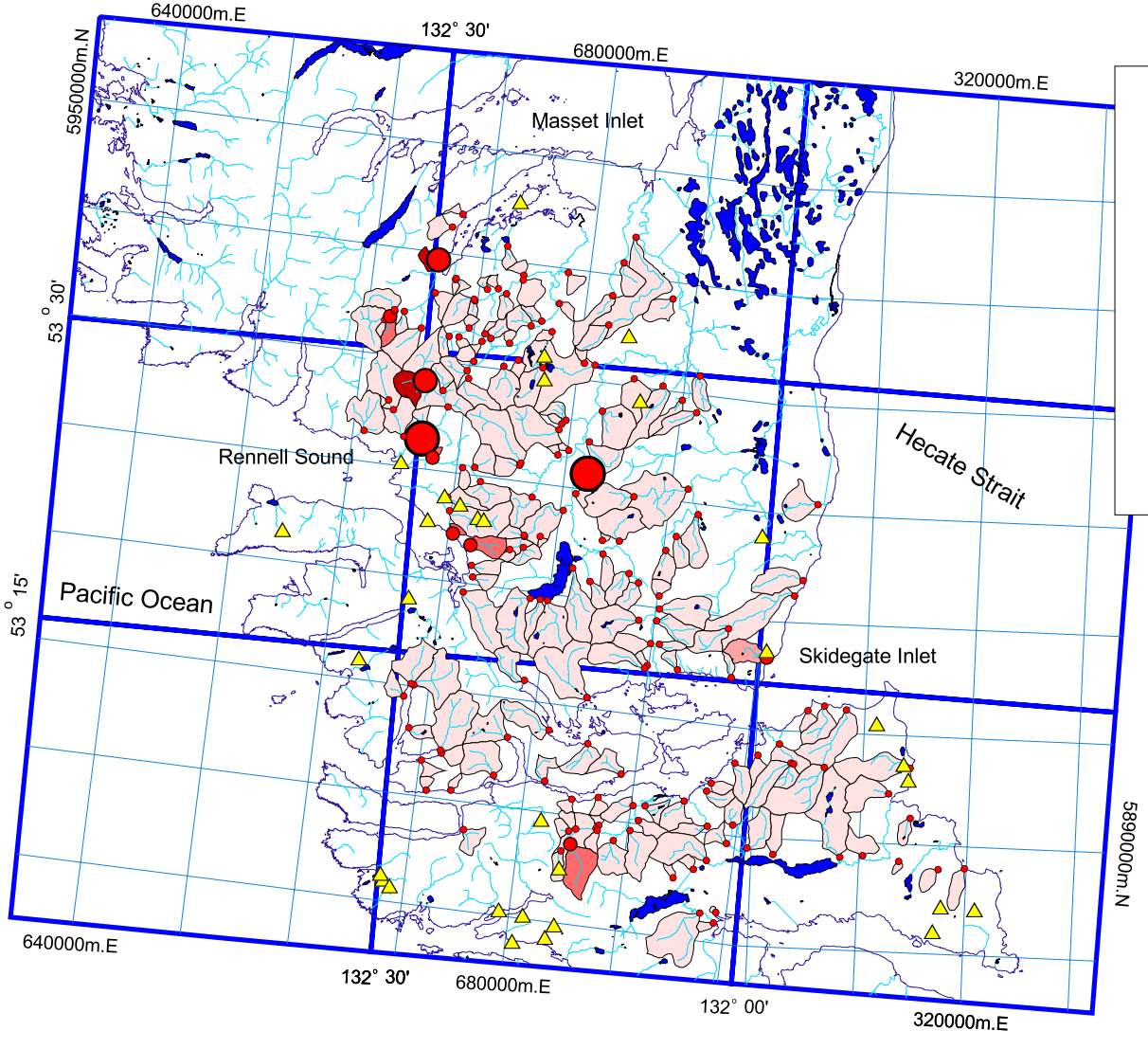
Legend

MINFILE Occurrence

Tungsten (ppm) by ICPMS

0.2 to 0.4
0.1 to 0.2
-0.1 to 0.1

Map 38



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Legend

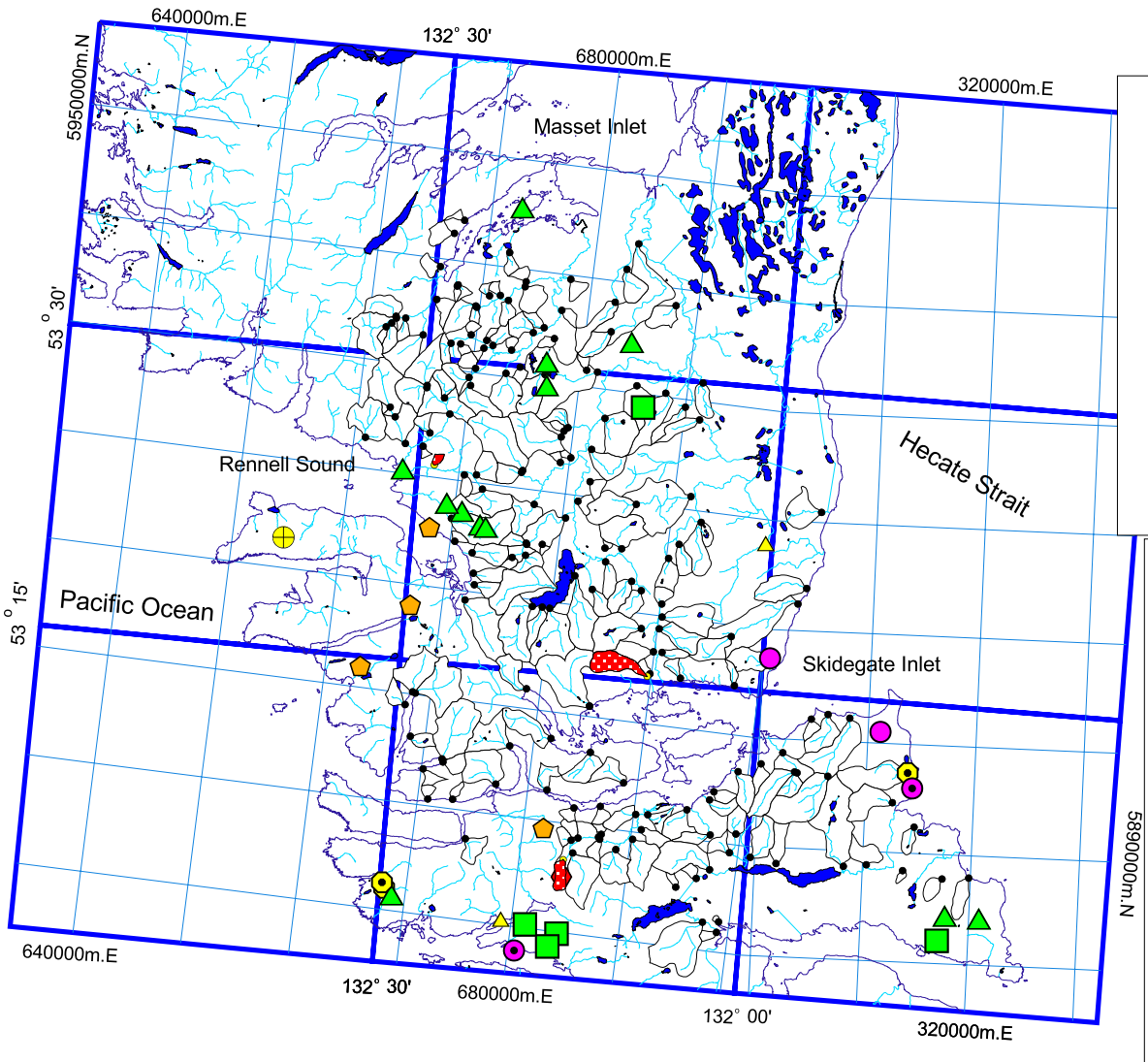
MINFILE Occurrence

zinc (ppm) by ICPMS

- **163.8 to 238.5**
- **143.3 to 163.7**
- **127.1 to 143.2**
- **21.6 to 127.0**

Map 39

Zn



Stream Sediment Geochemistry of parts of the Queen Charlotte Islands

GeoFile 2003-19

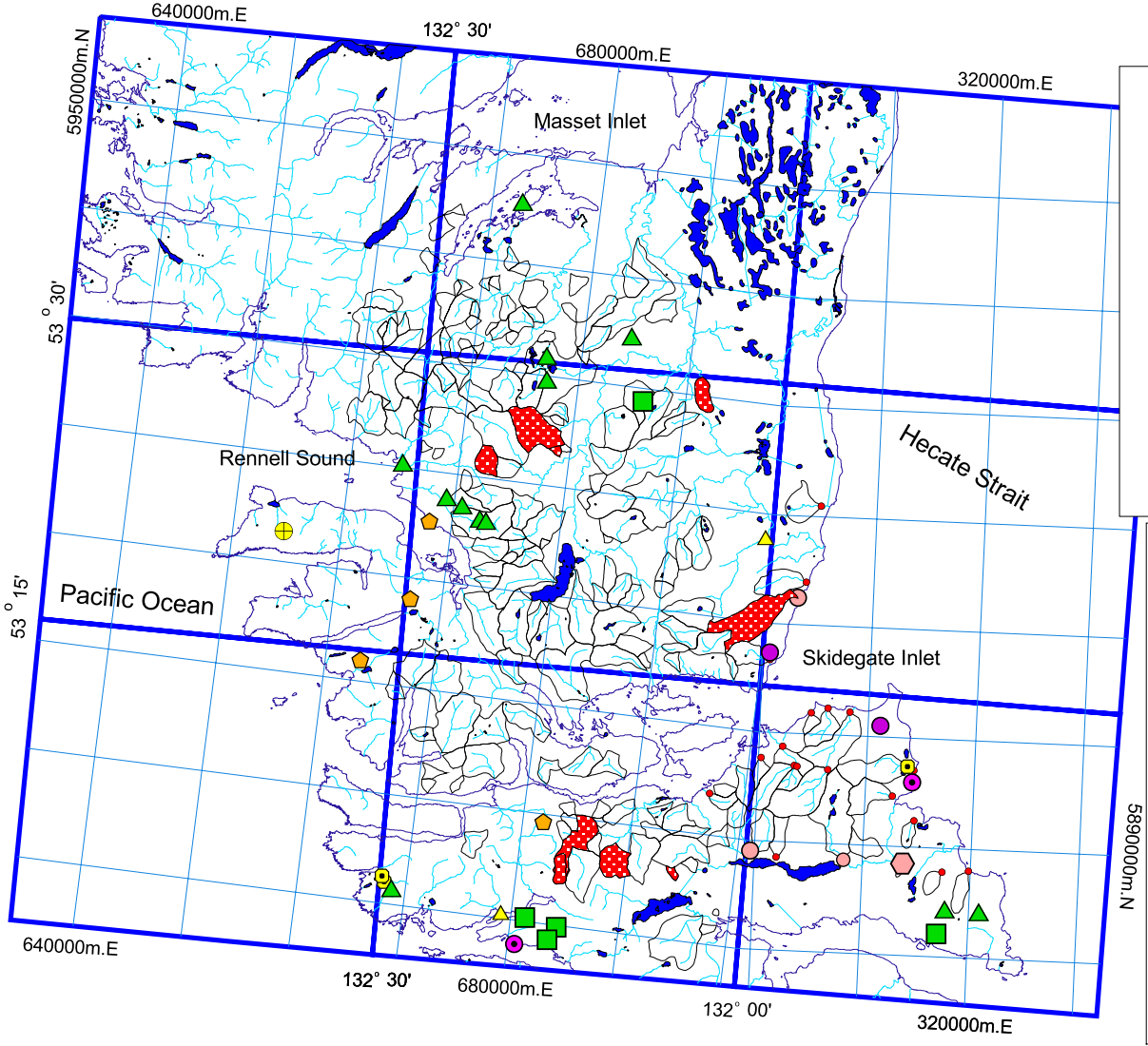
NTS 103F/1,7,8,9,10;103G4/5

Albers Equal Area Conic
NAD 83

0 5 10 15 Kilometers

Mineralization Style

- Occurrence not classified
- Kuroko type (Cu-Pb-Zn) VMS
- Epithermal - not classified
- Hot Spring Au-Ag
- Eithermal Low S Au-Ag
- As-Pb-Zn+/-Au vein
- Cu+/-Ag quartz vein
- Copper skarn
- VMS - not classified
- VMS Signature
  Ag >= 70 ppb + Cu >= 29 ppm +
  Pb >= 8.6 ppm + Zn >= 109 ppm



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GeoFile 2003-19

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Mineralization Style

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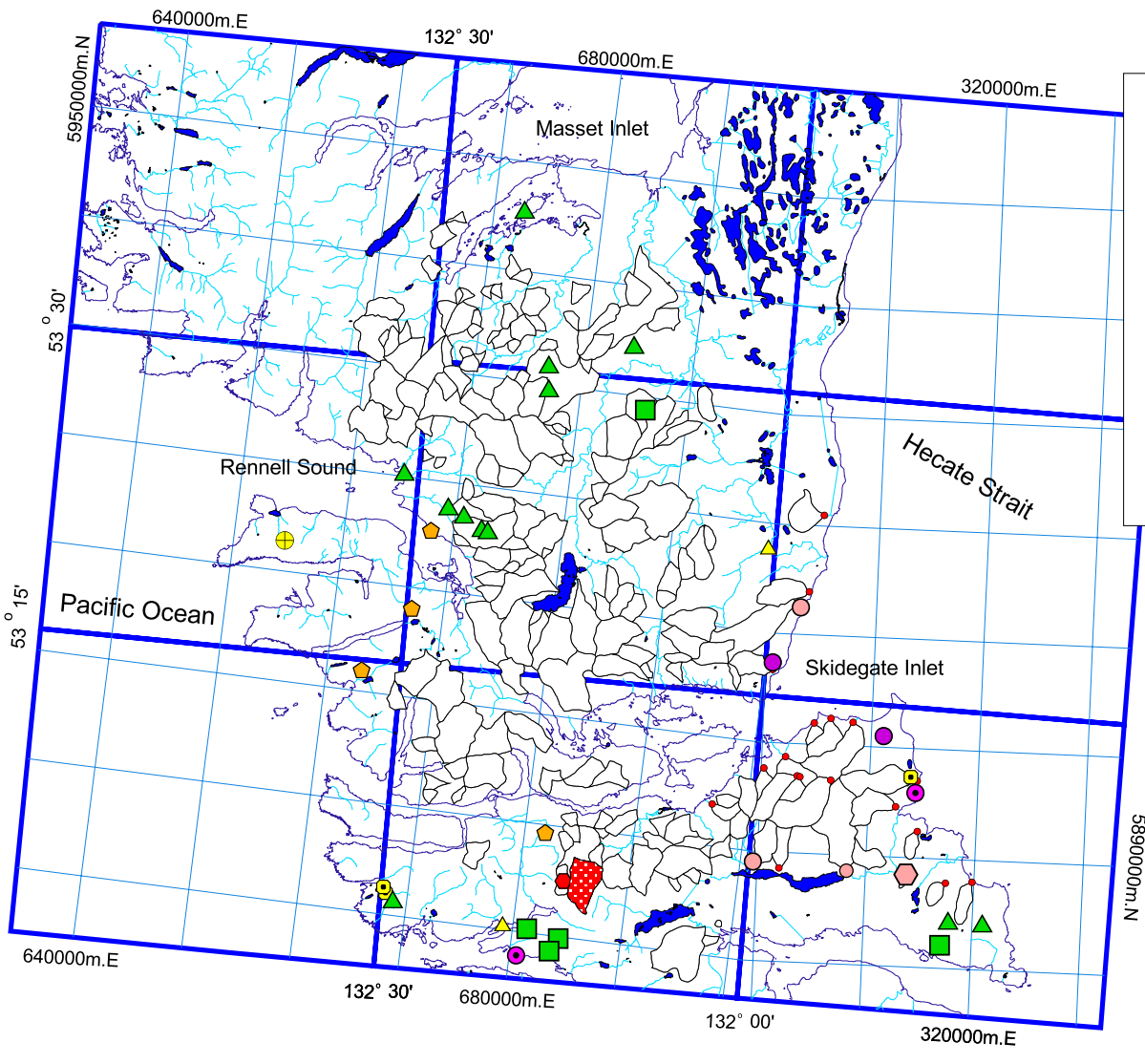
- Kuroko type (Cu-Pb-Zn) VMS
- Epithermal - not classified
- Hot Spring Au-Ag
- Eithermal Low S Au-Ag
- As-Pb-Zn+/-Au vein
- Cu+/-Ag quartz vein
- Copper skarn
- VMS - not classified
- Epithermal Signature
  Ag >= 70 ppb + Hg >= 440 ppb + Sb >= 200 ppb



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Mineralization Style

- Occurrence not classified
- Kuroko type (Cu-Pb-Zn) VMS
- Epithermal - not classified
- Hot Spring Au-Ag
- Eithermal Low S Au-Ag
- As-Pb-Zn+/-Au vein
- Cu+/-Ag quartz vein
- Copper skarn
- VMS - not classified
- Porphyry Signature
  Au >= 2 ppb + Cu >= 29 ppm + Mo >= 2 ppm