



Ministry of
Energy, Mines and
Petroleum Resources
GEOLOGICAL SURVEY BRANCH
OPEN FILE MAP 1989-28 Sheet 1 of 2

GEOLOGY OF THE BRONSON CREEK AREA

NTS 104B/10W,11E

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SCALE 1:25,000

LEGEND

LAYERED ROCKS

- CEANOZOIC**
- QUATERNARY**
- Qal UNCONSOLIDATED GLACIAL TILL AND POORLY SORTED ALLUVIUM
- TERTIARY**
- Tb BASALT FLOW
- MESOZOIC**
- JURASSIC**
- 1mJv INTERMEDIATE VOLCANIC FLOWS AND BRECCIAS
 - 1mJva HORNBLENDE PLAGIOCLASE ANDESITE PORPHYRY FLOWS AND BRECCIAS
 - 1mJvp POTASSIUM FELDSPAR DACITE PORPHYRY FLOWS
- 11s** ORANGE-WEATHERING CLASTIC SEDIMENTS
- iJsc CONGLOMERATES
 - iJsq SILTSTONES, SANDSTONES
- JURASSIC OR TRIASSIC**
- uTp MAFIC PLAGIOCLASE AND CLINOPHROXENE-PHYRIC FLOWS AND VOLCANICLASTIC ROCKS; CAN OCCUR INTERBEDDED WITH UNIT UTv
 - uTpf FLOWS
 - uTpb BRECCIAS
 - uTpt TUFFS, VOLCANIC SANDSTONES
- uTv PLAGIOCLASE DACITE PORPHYRY; CAN OCCUR INTERBEDDED WITH UNIT UTP
 - uTvf FLOWS
 - uTvfz CRISTAL TUFFS AND ASH FLOWS;
 - uTvfb BRECCIAS;
- MESOZOIC OR PALEOZOIC**
- TRIASSIC OR OLDER**
- Ts BEDDED SANDSTONE, SILTSTONE, SHALE AND PEBBLY SANDSTONE; OCCASIONAL BEDS OF CONGLOMERATE AND BRECCIA
 - Tsg INTERBEDDED FELDSPATHIC WACKE AND SILTSTONE
 - Tss SHALE INTERBEDDED WITH SANDSTONE AND SILTSTONE
 - Tsa ARENITE
 - Tsl SMALL LENSES OF LIMESTONE, OFTEN FRAGMENTAL
- Tsm PHYLITE, ARGILLITE AND SCHIST; VARIABLY METAMORPHOSED SANDSTONE, SILTSTONE, SHALE AND PEBBLY SANDSTONES WHICH APPEAR TO BE COMPOSITIONALLY EQUIVALENT TO UNIT Ts
 - Tsmg GREYWACKE
 - Tsmr ARENITE
 - Tsmc CONGLOMERATE AND BRECCIA
 - Tsmf SILTSTONE

INTRUSIVE ROCKS

- CEANOZOIC**
- TERTIARY**
- Tdb ALKALI BASALT DYKES, TYPICALLY LESS THAN 2 METRES ACROSS
- MESOZOIC**
- JURASSIC**
- Jd HORNBLENDE DIORITE
- Js POTASSIUM FELDSPAR PORPHYRY STOCKS, DYKES AND SILLS
 - Jsb RED BLUFF STOCK
 - Jsc BRONSON CREEK STOCK
 - Jqp FELSIC DYKES WITH RARE QUARTZ PHENOCRYSTS
- Jg** PLAGIOCLASE HYPABSSAL GRANITE PORPHYRY STOCKS, DYKES AND SILLS
- JgIn INEL STOCK
 - JgM JOHNNY MOUNTAIN STOCK
- TRIASSIC**
- Td DIORITE/GABBRO DYKES AND SILLS, TYPICALLY FINE-GRAINED AND HOSTED BY UNIT Ts

SYMBOLS

- Geological boundaries (defined, approximate).....
- Unconformity (assumed).....
- Bedding (inclined, vertical).....
- Bedding with tops observed (inclined).....
- Schistosity, gneissosity, foliation (inclined, vertical).....
- Joint (inclined, vertical).....
- Dyke (inclined, vertical).....
- Vein (inclined, vertical).....
- Fault or shear zone attitude.....
- High angle fault (defined, approximate, solid circle indicates downthrown side; arrows indicate relative movement).....
- Fossil locality.....
- Limit of Quaternary alluvium and till deposits.....
- Isolated outcrop, approximate outcrop distribution.....
- Gossan or altered zone.....
- Adit.....
- Mineralogical abbreviations (aspy - arsenopyrite, ba - barite, cp - chalcopyrite, fa - iron carbonate, gal - galena, mt - magnetite, po - pyrrhotite, qtz - quartz, ser - sericite, sp - sphalerite, ts - tetrahedrite)
- Station locality.....
- Helicopter pad.....

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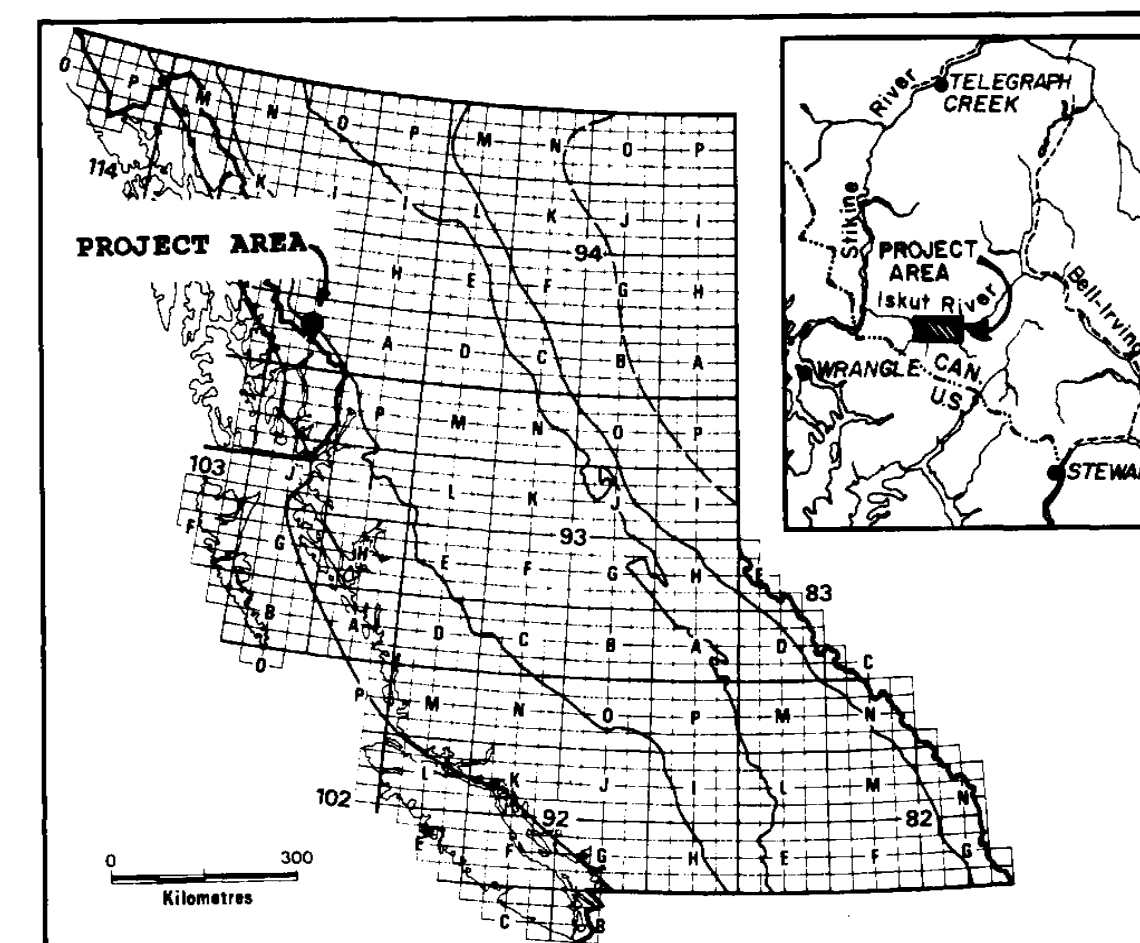
SELECTED MINERAL OCCURRENCES FROM THE BRONSON CREEK AREA

NAME	SIGNIFICANT MINERALS	ASSOCIATED MINERALS	ALTERATION FEATURES	STRUCTURAL FEATURES	DEPOSIT TYPE
BRONSON	Au, Ag, chalcopryrite, Cu, Pb, sphalerite, galena, Zn	magnetite, pyrite, calcite, quartz	chlorite, biotite, limonite	shear zone @ 100, 50 N	MESOTHERMAL SHEAR-VEIN
KHYBER PASS (GOSSAN)	Au, Ag, chalcopryrite, Cu, Pb, sphalerite, galena, Zn	pyrite, magnetite, calcite, quartz	chlorite, limonite	trend @ 95-110	
HANDEL & RIDGE	Au, Ag, chalcopryrite, Zn, Pb, sphalerite, galena, Cu	pyrite, arsenopyrite, quartz, calcite	pyrite, minor carbonate, limonite	shear vein @ 125, 60 S	TRANSITIONAL SHEAR-VEIN
INEL	Au, Ag, chalcopryrite, gold, Zn, Cu, galena, sphalerite, Pb	pyrite	K-feldspar, silicification, pyrite, carbonate	shears and veins @ 90, dip S	VEIN, PORPHYRY
REG	Au, Ag, gold, electrum, Cu, Pb, chalcopryrite, sphalerite, galena, tetrahedrite, pyrrargyrite, enargite, bornite, polydenite, stephanite	pyrite, arsenopyrite, quartz, carbonate	K-feldspar, chlorite, biotite	veins trend 070, 70N	MESOTHERMAL VEIN
SKY SPRAY	Au, Ag, sphalerite, Pb, Zn, galena	magnetite, arsenopyrite, limonite	pervasive chlorite, limonite	veins @ 102, 90 and 120, 75 NE	MESOTHERMAL VEIN
SNIP	Au, Ag, gold, tetrahedrite, sphalerite, galena, chalcopryrite, hesseite, cosalite, telluro bismuthinite	pyrrhotite, pyrite, arsenopyrite, molybdenum, quartz, carbonate, biotite	green biotite (annite) pyrite, K-feldspar	shear @ 120, 50 SW	MESOTHERMAL SHEAR-VEIN
WARATAH	Au, Ag, chalcopryrite, bornite, chalcocite, native copper	magnetite, pyrite, arsenopyrite, quartz, chlorite	chlorite, epidote, carbonate	veins @ 130, dip NE and SW	MESOTHERMAL VEIN

FOSSIL COLLECTION DATA FOR THE BRONSON CREEK AREA

MAP NO.	FIELD NUMBER	GSC NUMBER	UTM EASTING	UTM NORTHING	MAP UNIT	MACROFAUNA	MICROFAUNA*	AGE
1.	MHG87-7.6.1	NA	371750	6283200	Ts1	none	barren	indeterminate
2.	DV187209	NA	372890	6276730	Ts1	large crinoids	barren	not submitted
3.	DV187151	NA	372550	6276870	Ts2	none	barren	indeterminate
4.	MHG87-3.6.1	C-154208	376280	6281310	Ts1	barren	Episporidella	Late Triassic, middle/late Norian
5.	MHG87-3.1.3	NA	378040	6280550	Ts2	bivalve	barren	in progress
6.	MHG87-3.1.3	NA	378250	6282150	Ts1	none	barren	indeterminate
7.	DV187172	C-154205	384530	6279300	Ts1	none	barren	no younger than Triassic
8.	DV187136	NA	379150	6279090	1Jsc	crinoids, corals	barren	in progress
9.	8AP-50-9	C-101262	378500	6280250	1Jsc	Neylia, Trigonella, Cryphaea, corals, pelecypods**	barren	lower Jurassic, probably Toarcian

* Conodonts identified by M. Orchard of the Geological Survey of Canada.
** Macrofossils for sample 9 identified by M.W. Tipper of the Geological Survey of Canada.



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The assistance of the various mining companies operating in the Bronson Creek area was critical to the completion of the project. Chris Graf of Active Minerals Ltd. generously provided much needed advice and data in the initial stages of the project. The project was first proposed by Tom Schroeter of the British Columbia Geological Survey. Discussions with Ted Grove of E.W. Grove Consultants Ltd. were most informative. Numerous other geologists shared their knowledge with me, including Ron Nichols, Mike Moore and Steve Kenwood of Cominco Ltd., David Dupré of Kewatin Engineering Inc., Steve Todoruk of Panicon Developments Ltd., Dave Yeager of Skyline Gold Corporation and Mike Burson, Geological Consultant. Cominco Ltd. generously provided a site with power for our camp in 1987. In 1988 we were fortunate to be able to stay in Kewatin Engineering Inc.'s camp.

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TABLE 4. MINIFILE OCCURRENCES

MINIFILE NUMBER	PROPERTY NAME	STATUS	COMMODITIES
004	BONANZA	prospect	Ag, Zn, Pb, Au, Cu
071	RA	showing	Au, Ag, Pb, Zn, Cu, As
107	RED BLUFF (L. 2857)	showing	Au, Ag, Pb, Zn, Cu, As
111	STONEHOUSE (REG)	producer	Au, Ag, Cu, Pb, Zn
135	LAKE RIDGE WEST	showing	Au, Ag, Pb, Zn, Cu
138	KRYER PASS	prospect	Ag, Pb, Zn, Au, Cu
145	WARATAH 6	prospect	Au, Ag, Cu, Zn, Pb, Mo
202	HANDEL	showing	Ag, Zn, Pb, Au, As, Cu
205	WOLVERINE	showing	Ag, Pb, Au, Cu, As
208	GOLDEN SPRAY	showing	Au, Ag, Pb, Zn, As
245	HEMLO WEST 15	showing	Au, Ag, Pb, Zn, As
250	SNIP	showing	Cu, Au, Ag
256	BIG BOWL (INEL)	prospect	Zn, Pb, Au, Ag, Cu
256	WOLVERINE (INEL)	prospect	Zn, Pb, Au, Ag, Cu
257	EAST RIDGE (INEL)	prospect	Cu, Pb, Zn, Ag, Au
258	INEL RIDGE (INEL)	prospect	Cu, Pb, Zn, Ag, Au
259	SUPERIOR (INEL)	prospect	Au, Ag, Cu, Zn, Pb
260	MCFADDEN (REG)	prospect	Zn, Ag, Au, Pb, Zn
261	TWO BARREL (REG)	prospect	Ag, Pb, Zn, Au
262	CI (REG)	showing	Au, Ag, Pb, Zn, Cu
263	CS (REG)	showing	Au, Ag, Pb, Zn, Cu
264	CS (REG)	prospect	Au, Ag, Pb, Zn, Cu
265	CFRAN	showing	Au, Ag, Pb, Zn, Au
268	HANGOVER TRENCH	showing	Cu, Au
269	BURNIE 1	showing	Ag, Au
270	GRAND	showing	Au, Ag, Cu
271	BURNIE 2	showing	Pb, Ag, Au, Cu, Zn
272	GIM (ZONE 1)	showing	Cu, Fe, Ag, Pb, Zn
293	GIM (ZONE 2)	showing	Au, Ag, Bi, As
295	GOLD	showing	Au, Ag, Cu, Zn, Pb
296	GOLDEN ARROW	showing	Au, Ag, Cu, Zn, Pb
298	ROOT (WARATAH)	showing	Au
299	CHOPIN	showing	Au, Cu
299	RIDGE (CHOPIN)	showing	Au, Ag
300	BROWN	showing	Au, Ag, Cu, Zn, Pb
306	NORTH CREEK	showing	Au, Ag, Zn, Pb, As
310	BILLY GOAT BOWL (STU)	showing	Au, Ag, Zn, Pb, Cu, As
311	CENTRAL STU	showing	Au, Cu, Ag, As
313	MAGNETITE (STU)	showing	Cu, Au, Ag, Zn, Pb, As
314	SECOND BASIN NORTH	showing	Ag, Au, Cu, Pb, Zn
315	SECOND BASIN SOUTH	showing	Au, Ag, Zn, Pb, Cu
320	MUNATAK (INEL)	showing	Au, Ag, Zn, Pb, Cu
321	BIG ROCK (INEL)	prospect	Au, Ag, Zn, Pb, Cu
322	NOONLIGHT (INEL)	prospect	Au, Ag, Zn, Pb, Cu
331	JAN 8	showing	Ag, Cu, Zn, Mo

TABLE 3. REGIONAL GEOCHEMICAL SALT AND WATER SAMPLE ANALYSES

SAMPLE NUMBER	Zn	Cu	Pb	Ni	Co	Ag	Mn	Fe	Mo	W	Na	Ca	LOI
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%
1097	312	239	60	36	1.3	740	5.25	7	15000	3	1	15000	3
1098	780	225	193	93	30	4.0	1900	6.25	4	3	3	1100	4.5
1099	180	107	87	40	4.1	5	860	2.0	1.2	2	2	1000	3.5
1100	139	106	26	56	19	0.2	945	4.35	3	4	3	1100	5.3
1101	120	110	10	10	1.2	860	2.0	1.2	1500	3	3	1200	7.6
1102	480	81	47	31	14	0.5	660	4.10	2	3	3	1200	5.6
1103	128	88	62	24	16	0.7	1200	4.40	3	2	4	1100	8.0
1104	146	182	10	10	1.2	860	2.0	1.2	1500	3	3	1200	7.6
1111	137	106	23	68	22	0.7	855	4.15	4	3	2	1100	8.0
1112	152	110	13	27	2.6	3.2	4.20	1.10	4	3	3	1000	1.6
1123	170	31	16	21	11	0.1	670	2.65	8	3	3	1000	1.6
1124	106	55	12	42	45	0.2	605	3.70	3	4	1	620	2.6
1125	106	55	12	42	45	0.2	605	3.70	3	4	1	620	2.6
1126	166	95	21	48	22	0.3	980	4.65	4	4	1	1000	5.0
1131	182	113	24	22	1.1	1400	3.90	2	2	2	2	1300	4.4
1153	98	410	13	14	18	0.7	300	5.05	80	18	1	1100	1.0
1154	22	160	19	21	2.8	1.0	1150	4.60	3	4	1	1300	2.0
1155	207	149	62	21	29	1.0	1250	4.90	5	4	1	1300	2.0
1156	870	270	200	54	36	2.0	1800	5.60	6	2	4	1400	7.6
1157	95	60	15	10	1.0	1150	4.60	3	2	1	1100	2.0	
1159	238	117	54	40	22	1.1	1400	3.90	2	3	3	1600	1.2
1177	92	15	8	10	7.2	0.2	860	2.0	1.2	2	2	1000	3.5
3010	460	108	75	54	19	1.0	1150	4.60	3	2	1	1100	2.0
3102	138	51	27	18	15	0.3	885	1.10	2	3	1	1300	2.0
3103	400	117	68	17	16	0.3	1050	4.40	3	2	1	1300	6.4
3197	14	19	0.1	1.0	1.0	0.1	1.0	1.0	2	1	1	1000	1.0
3110	280	147	50	6	10	0.6	1100	3.10	3	3	3	1400	2.7

WATER

SAMPLE NUMBER	As	Bd	Bg	Br	Cd	Co	Cu	Cr	Fe	Mn	Mo	Ni	Pb	Se	U	V	Zn
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1097	140	0.5	10	287	310	420	2.6	7.4	1.0	0.02	40	7.1	1.0	1.0	1.0	1.0	1.0
1098	190	0.7	20	273	520	560	2.9	69	2.2	0.02	42	7.4	1.0	1.0	1.0	1.0	1.0
1099	34	1.0	19	17	1.6	0.2	118	2.0	0.02	7.4	7.1	1.0	1.0	1.0	1.0	1.0	1.0
1102	58	2.3	20	1065	1400	560	3.0	164	1.9	0.02	44	7.1	1.0	1.0	1.0	1.0	1.0
1103	34	1.0	19	17	1.6	0.2	118	2.0	0.02	7.4	7.1	1.0	1.0	1.0	1.0	1.0	1.0
1104	32	1.3	45	51	12	400	1.4	116	2.8	0.02	44	7.1	1.0	1.0	1.0	1.0	1.0
1105	105	1.0	10	15	1.0	0.9	1.0	2.0	0.15	36	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1111	33	3.0	40	15	540	0.9	1.0	2.0	0.15	36	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1112	33	3.0	40	15	540	0.9	1.0	2.0	0.15	36	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1123	11	0.5	10	15	1.0	0.9	1.0	2.0	0.15	36	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1124	5	0.5	10	15	1.0	0.9	1.0	2.0	0.15	36	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1125	5	0.5	10	15	1.0	0.9	1.0	2.0	0.15	36	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1126	30	2.0	25	7	500	0.4	91	2.5	0.02	38	7.8	1.0	1.0	1.0	1.0	1.0	1.0
1153	18	1.0	10	60	650	1.6	60	2.4	0.02	28	7.5	1.0	1.0	1.0	1.0	1.0	1.0
1154	31	0.7	40	308	550	700	1.3	43	2.8	0.08	28	7.8	1.0	1.0	1.0	1.0	1.0
1155	34	1.5	10	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
1156	120	2.0	20	475	560	5.0	113	2.6	0.06	36	7.2	1.0	1.0	1.0	1.0	1.0	1.0
1157	27	1.0	10	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
1159	54	0.7	20	220	240	630	1.3	66	3.0	0.27	52	8.1	1.0	1.0	1.0	1.0	1.0
1177	30	0.2	110	3	280	0.2	62	7.7	1.20	50	7.1	1.0	1.0	1.0	1.0	1.0	1.0
3100	310	4.8	40	31	26	1.0	4.0	122	2.6	0.04	32	7.0	1.0	1.0	1.0	1.0	1.0
3102	11	0.4	5	4	620	0.4	122	2.6	0.04	32	7.0	1.0	1.0	1.0	1.0	1.0	1.0
3103	25	0.8	30	45	30	410	1.52	3.4	0.04	38	7.7	1.0	1.0	1.0	1.0	1.0	1.0
3197	2	0.1	1	19	160	0.1	29	4.4	0.06	20	6.6	1.0	1.0	1.0	1.0	1.0	1.0
3110	17	0.4	10	68	360	1.1	60	3.2	0.15	30	7.0	1.0	1.0	1.0	1.0	1.0	1.0

REGIONAL SEDIMENT AND WATER GEOCHEMICAL RECOGNISANCE DATA

1987 Regional Geochemical Survey
1048 - Iskut River
British Columbia Regional Geochemical Survey RGS-18.
128 Geological Reconnaissance Open File 1048
National Geochemical Reconnaissance 1:250 000 Map series NGR-110

Sample collection was carried out during the summer of 1987. Stream sediment samples ideally comprise 2 - 4 kg of sand size and finer inorganic material. In this study, 150 ml of sediment was collected from the stream. Large Kraft paper sample bags were used to ensure sufficient aeration of the sediment. The sediment was placed in plastic bottles flushed out with water from the stream prior to collection of the sample. To aid in the following, highly visible aluminum tags (5 by 10 cm) bearing a unique RGS sample number were used to mark every sample site. For further information concerning analytical techniques and statistical analysis of the data please refer to the original maps and report.

ANALYTICAL TECHNIQUES

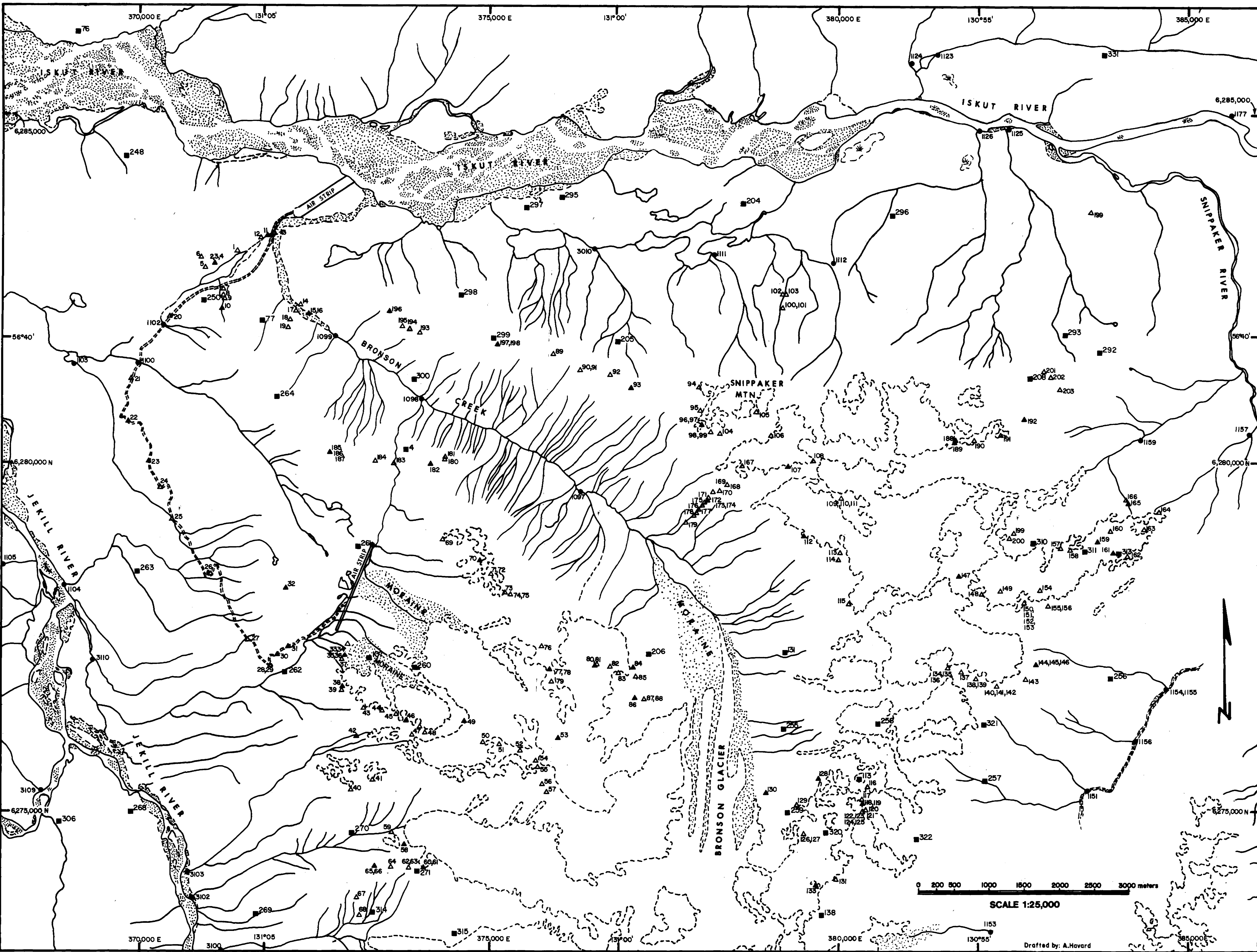
SAMPLE PREPARATION:
Grab samples are pulverized to approximately minus 200 mesh using tungsten carbide equipment.

TRACE ELEMENT ANALYSES: Ag, Cu, Pb, Zn, Mo, As, Sb
Samples (usually 0.5 grams) are digested in Teflon beakers using a mixed acid attack which includes HNO₃ and HF. The acid solution of the residue is then diluted to a specific volume and the elements measured using atomic absorption spectrophotometry. The detection limit for As (AsH₃ or SbH₃) is evolved, passed through a heated quartz tube in the light path of an atomic absorption spectrophotometer. Background corrections were made for Pb, As and Sb.

TRACE ELEMENT ANALYSES: Au
Samples submitted in 1987, numbered 1 to 179, were analyzed at the British Columbia Geological Survey Laboratory, a standard (0.5 AT or 1 AT) fire assay technique was used to generate a Au/Ag bead. The bead is dissolved in acid and atomic absorption spectrophotometry used to measure gold down to <20 ppm. All other gold analyses were performed by Ames Analytical Laboratory, Vancouver, British Columbia. A 20 gram sample is concentrated into a 2 gram bead by the classical fire assay method. The bead is dissolved by aqua regia and gold determined by gravimetric adsorption spectroscopy.

MAJOR OXIDE ANALYSES: SiO₂, Al₂O₃, Fe₂O₃, MgO, CaO, Na₂O, K₂O, TiO₂, P₂O₅
Samples made into glass discs and then analyzed by XRF. Samples high in sulphides are analysed using a different flux than that used for regular silicate samples.

MAJOR OXIDE ANALYSES: LOI, CO₂, SO₃, FeO
Loss on ignition is determined from a 0.5 gram sample weighed in a tared crucible and heated for 2 hours. Loss on ignition is determined volumetrically and titrimetrically respectively. The FeO content of the sample is determined from a 1 gram sample heated in a covered crucible with H₂SO₄ and HF. The dissolved iron is then titrated. The iron reported by XRF is used to determine total iron. A correction is subtracted from the iron (FeO) from total iron given a ferric iron value. This method is not applicable to samples containing iron sulphides.



Ministry of Energy, Mines and Petroleum Resources
GEOLOGICAL SURVEY BRANCH
OPEN FILE MAP 1989-28 SHEET 2 of 2
GEOCHEMISTRY AND MINERAL OCCURRENCES OF THE BRONSON CREEK AREA
NTS 104B/10W,11E
DAVID V. LEFEBURE and MICHAEL H. GUNNING

LEGEND

- Lithochemical sample location (major oxides, trace elements) A
- 1988 Regional Geochemical Survey sample location (stream sediment) B
- MINIFILE occurrence C

TABLE 1. TRACE ELEMENT ANALYSES OF GRAB SAMPLES

SAMPLE NUMBER	Au	Ag	Cu	Pb	Zn	MAP UNIT	FIELD DESCRIPTION
ppm	ppm	ppm	ppm	ppm	ppm		
1	0.5	0.5	273	24	109	UTP	clinopyroxene andesite
2	0.5	0.5	22	5	8	Js	quartz monzonite
4	0.5	0.5	22	5	8	ALT	quartz monzonite
5	20	1.0	141	264	0.11	Jg	greyswacke
7	710	3.0	0.133	44	165	Jg	feldspar porphyry
8	0	0.5	93	1.0	1.0	Js	quartz syenite(?)
9	38	2.0	0.123	11	61	Js	quartz syenite(?)
10	193	1.0	1.14	11	5	MIN	quartz vein
11	20	0.5	248	3	62	Tst	quartz vein
12	20	0.5	256	3	79	Tst	quartz vein
13	20	0.5	256	3	79	Tst	quartz vein
14	24	0.5	256	3	79	Tst	quartz vein
16	27	0.5	175	10	77	Tst	quartz vein
17	34	0.5	241	9	97	Tst	quartz vein
18	25	0.5	241	9	97	Tst	quartz vein
19	27	0.5	203	15	69	ALT	quartz magnetite airt.
20	20	0.5	490	13	76	UTP	quartz magnetite veinlets
24	20	0.5	141	12	132	Tst</	