

**BC**  
Ministry of  
Energy, Mines and  
Petroleum Resources

GEOLOGICAL SURVEY BRANCH

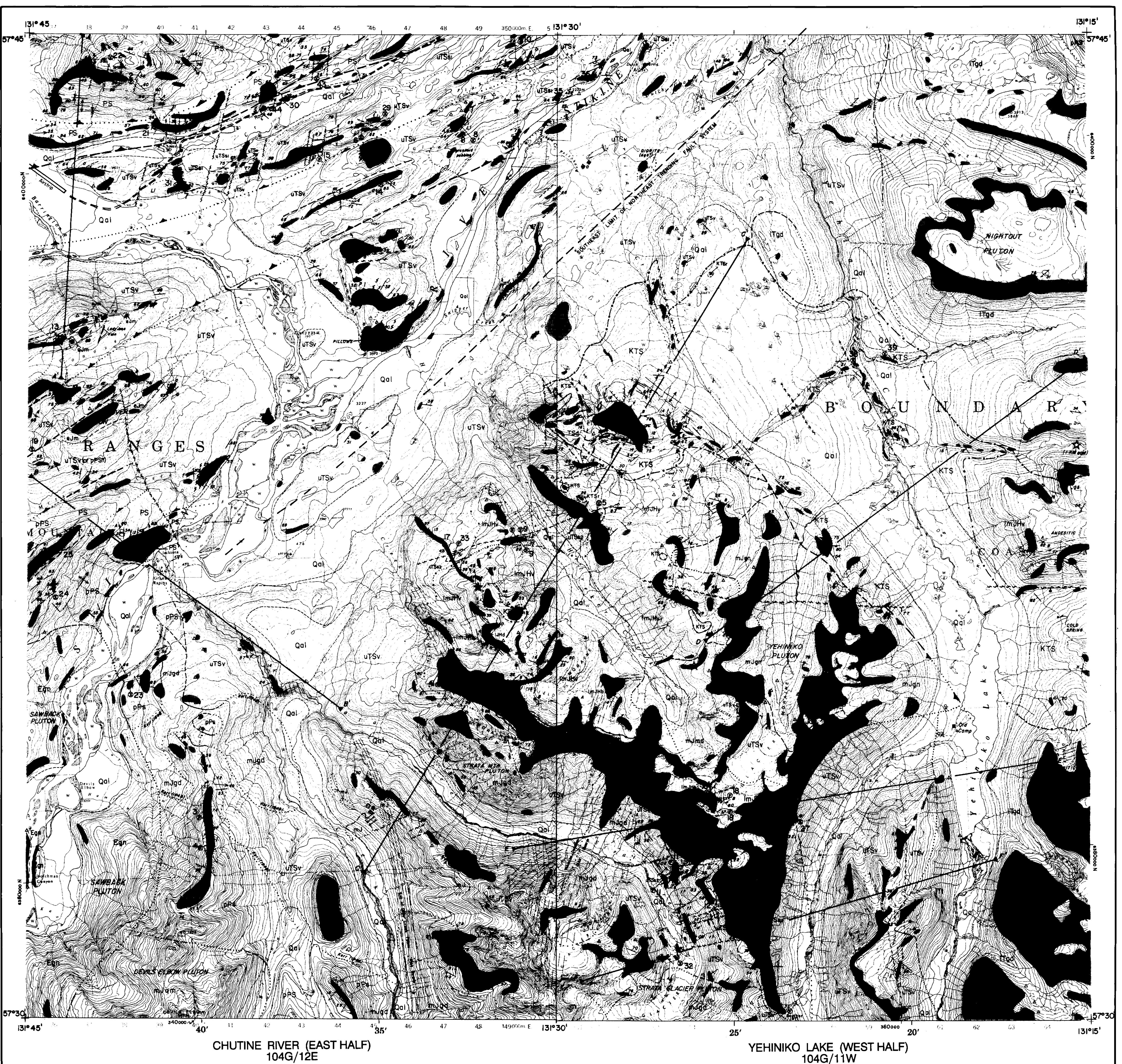
OPEN FILE 1990-1 (SHEET 1 OF 2)

## GEOLOGY OF THE STIKINE RIVER - YEHINIKO LAKE AREA, NORTHWESTERN B.C.

NTS 104G/11W, 12E

DEREK A. BROWN, CHARLES J. GREIG AND MICHAEL H. GUNNING

SCALE 1:50 000



STRATIFIED ROCKS	
Quaternary	Qal: Alluvium, unconsolidated glacioluvial deposits
Tertiary - Eocene (?)	SLOKO GROUP: Pinkish white, locally welded, dacite and rhyolite; minor olive-green andesite flows and breccia; tephrite
	TSd: Dark brown weathering, columnar jointed, plagioclase-phyric trachyandesite and tuff; flows and breccia
	TSb: Dark brown weathering, columnar jointed, plagioclase-phyric trachyandesite and tuff; flows and breccia
Upper Cretaceous (?) to Paleocene (or Eocene ?)	BROTHERS PEAK FORMATION: Poorly indurated, brick-red, brown and grey polymictic conglomerate, lesser sandstone, wacke, siltstone, rare shale; rare coaly plant stems, leaves and tree fragments
	KTS: Granular-dominated cobble conglomerate
	gmc: Thin but prominent, locally welded, white rhyolite to rhyodacite ash to lapilli tuff (1 m thick, thickness exaggerated on map), containing fresh biotite flakes in a day-glo yellow matrix
	t: Rhylolite to rhyodacite flows, tuff; quartz-eyre dacite tuff; minor basalt and andesite flows and breccia
	r: Rhylolite to rhyodacite flows, tuff; quartz-eyre dacite tuff; minor basalt and andesite flows and breccia

Note: These rocks were correlated on a lithologic basis with the Brothers Peak Formation (Maastrichtian-Paleocene; A.R. Sweet, personal communication, 1989). The preliminary Epoch 10 unit was not included because it is younger than the uppermost section that has not occurred, then either Brothers Peak deposition or the Eocene as indicated by Elsaecker (1974) or a younger cycle of erosion and deposition has occurred. If the latter is true, then the rocks may be correlative with the Tazlina Canyon formation\* of Read (1984).

### LOWER TO MIDDLE (?) JURASSIC

HAZELTON GROUP	ImJtb: Thick clivous basalts flows, carbonata-cemented pillow breccia; rare bioclastic limestone lenses (< 2 m thick); inferred Balooan
UHs	Liny sandstone, feldspathic wacke, arenite, fossiliferous - belemnites, terebratulid bivalve, rare Wayda, small bivalves; Tottic
UHd	Flow-banded, recrystallized and flow-folded; buff to rusty, flow-banded aphanitic gabbro; possibly Pliensbachian
ImJhv	Maroon, purple, massive, brick-red and green dacite to basaltic andesite pyroxene-plagioclase porphyritic, and amygdaloidal flows, crystal lithic tuff-breccia and lapilli tuff; local tuffaceous grit

Note: Anderson et al. (1990) have proposed a revised nomenclature for the Hazelton Group in the Stewart and Tatlay River areas. Preliminary correlations between units used in this map and those of Anderson's area is as follows: unit ImJtb with Salmon River Formation, Dakay Creek facies; unit UHs with Salmon River formation, "tower member"; and unit UHd with Mount Dilworth formation.

### UPPER TRIASSIC

STUHINI GROUP	uts: Sedimentary rocks; (s) = undifferentiated
UPPER NORAN	utsa: West Yehiniko Creek and Helveret Creek areas: thin to thick-bedded, buff, light grey-green, fine-grained, angular, subangular, subrounded and fusiform shale with abundant Monette subcircular; L2 = discontinuous limestone lenses (up to 30 m thick); minor pale grey chert
UPPER CARBON-LOWER NORAN	utsai: Stikine River - Sphalerite Creek area: grey arenitic wacke with limestone lenses; black arenite - graphic shales, black arenite rare; pyroclastic-bearing polymictic conglomerate/breccia; L1 = discontinuous limestone lenses; LBX = limestone sedimentary breccia
UTSV	Volcanic rocks; undifferentiated
b	Mafic volcanic rocks: augite-pyroxenitic basalt to basaltic andesite flows and breccia; pyroxene-rich crystal lithic lapilli tuff; volcanic wacke, dark green to olive-green, medium-grained, massive; minor pyroxene

Plated: plagioclase-porphyritic basalt or basaltic andesite, locally plowed

a: Intermediate volcanic rocks: massive, green andesite flow-basalt containing 10-20% equant plagioclase phenocrysts; red-brown to purple plagioclase-rich volcanic breccia; pyroclastic breccia; massive, green to olive aphyric andesite

rt: Reddish brown, medium-grained, massive, angular, commonly containing carbonate clasts, plagioclase-porphyritic and lesser pyroxene crystals

f: Felsic volcanic rocks: rhyolite/dacite; subaqueous felsic/lilacious ash tuff, laminated, pale to dark green, commonly "sharpstone"; silicic breccia; pumice; pale to dark green, siliceous angular fragments; local welded bombs

TRIASSIC OR OLDER

m: Foliated to massive mafic metavolcanic rocks, amphibolite (extrapolated north from the Scud River area; see Brown and Gunning, 1989)

### PERMIAN OR OLDER

STIKINE ASSEMBLAGE

#### LOWER PERMIAN

PS: Foliated to folded and faulted, locally foliated, gray limestones with minor siliceous layers, lenses or nodules; (mt) = maroon and green plagioclase crystal lithic tuff, tuffaceous mudstone

#### PRE-PERMIAN

pPS: Rusty weathering, pyritic metapelites, meta-schists, well-bedded to laminated sericitic slate; talc tuff, variegated chert, but calcareous silicite; (t) = discontinuous limestone, probably Carboniferous age

### INTRUSIVE ROCKS

#### TERTIARY AND OLDER DIKES

A: Andesite (A), basalt (B), felsite (F), rhyolite (R)

#### EOCENE

##### SAWBACK PLUTON

Egn: Well-jointed, medium-grained (hornblende) biotite granite

#### MIDDLE JURASSIC

##### YEHINIKO PLUTON

mjgn: Pink, medium-grained hornblende biotite granite, minor quartz monzonite; (mjn) = quartz monzonite

##### DOKDAK INTRUSION

mj: Foliated to massive to sparse monzonite stocks; sparsely associated pink plagioclase lithic, trachytic, (quartz) syenite, (quartz) monzonite dikes, typically biotite-hornblende-plagioclase porphyritic

##### STRATA GLACIER PLUTON + STRATA MOUNTAIN PLUTON

mjgd: Foliated to massive biotite-hornblende granodiorite; (mjg) = quartz monzonite

#### EARLY JURASSIC (?)

##### CONOVER PLUTON

ujm: Texturally heterogeneous, seriate to crowded plagioclase-porphyritic, locally trachytic, hornblende monzonite to monzodiorite; groundmass of fine to medium grained euhedral to subhedral hornblende and potassium feldspar

#### LATE TRIASSIC (?) - PRE-MIDDLE JURASSIC

##### YEHINIKO DIORITE

Jd: Hornblende diorite, leucodiorite, tonalite, locally foliated or gneissic

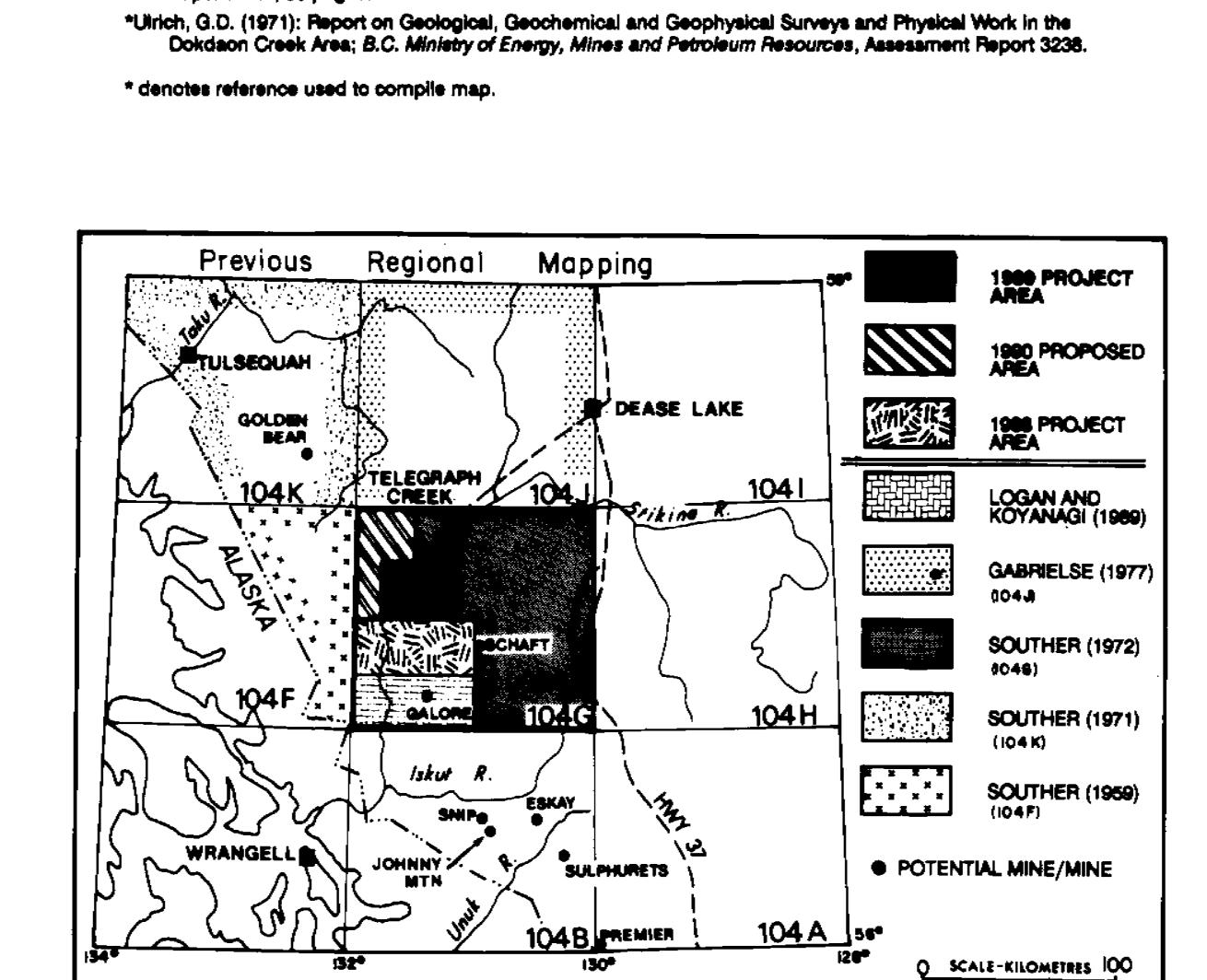
#### MIDDLE TO LATE TRIASSIC

##### NIGHTOUT PLUTON

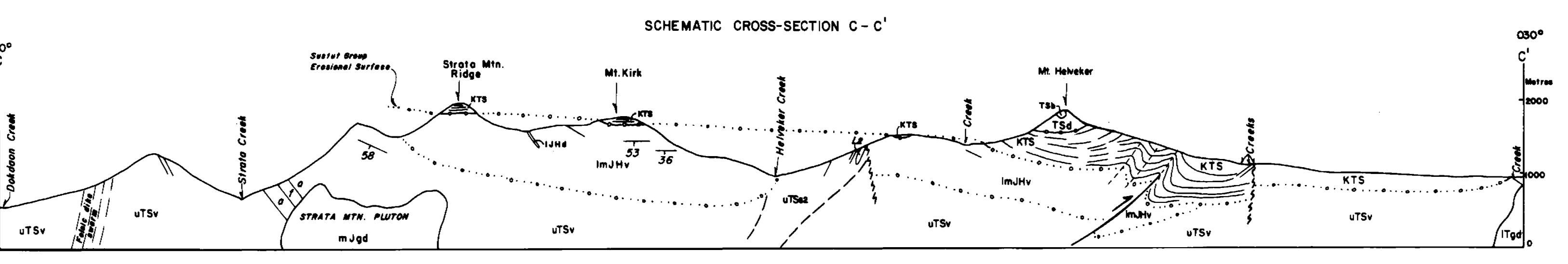
Itgd: Foliated to massive biotite-hornblende granodiorite, quartz monzonite, monzodiorite, diorite; typically contains megacrystic potassio-potassium feldspar; (mt) = unfoliated (biotite-hornblende tonalite)

#### NOTE:

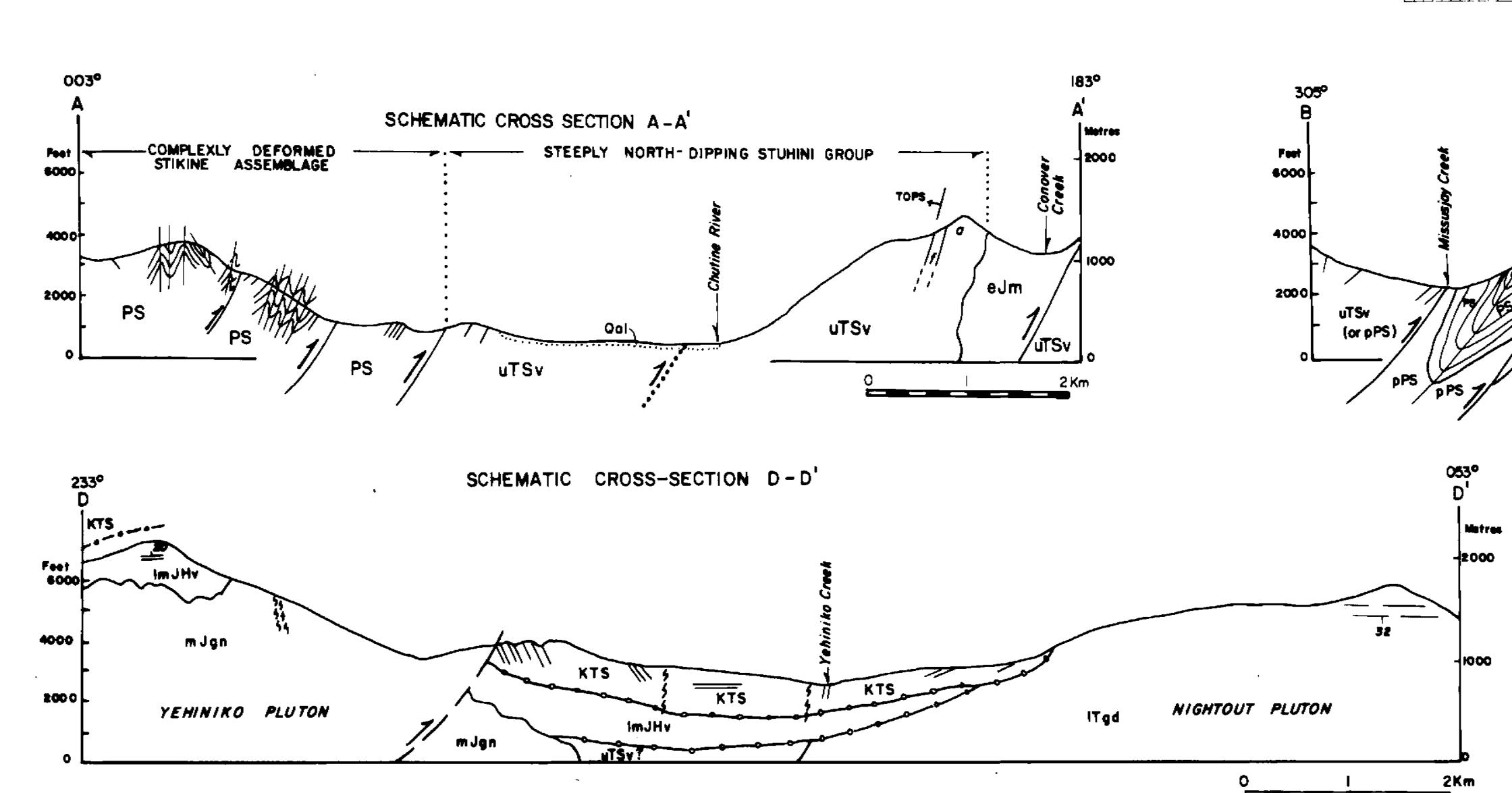
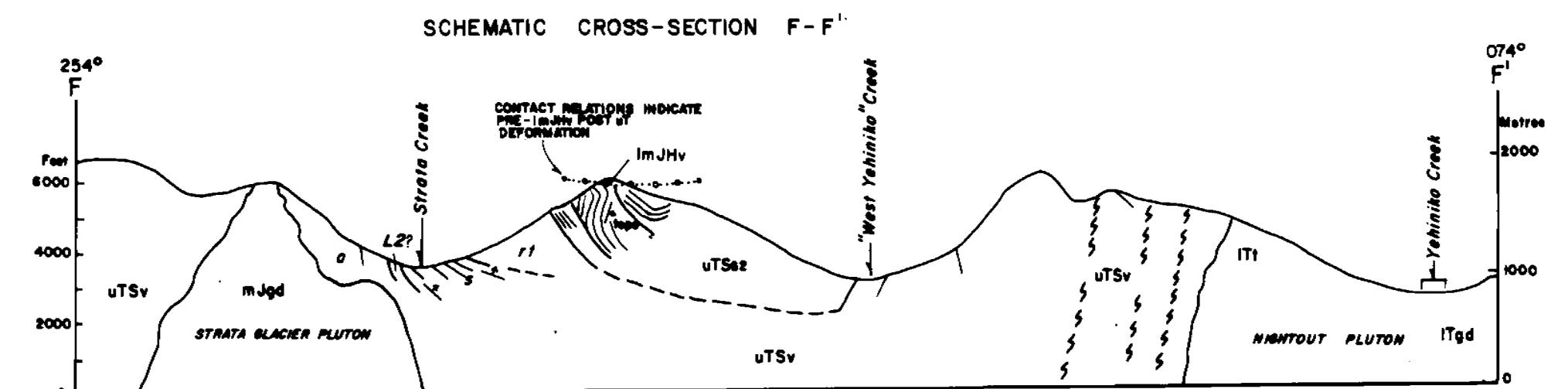
Detailed descriptions of the map units can be found in Brown and Greig (1990a).



SCHEMATIC CROSS-SECTION C - C'



SCHEMATIC CROSS-SECTION F - F'





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## GEOCHEMISTRY OF THE STIKINE RIVER - YEHINIKO LAKE AREA, NORTHWESTERN B.C.

NTS 104G/11W, 12E

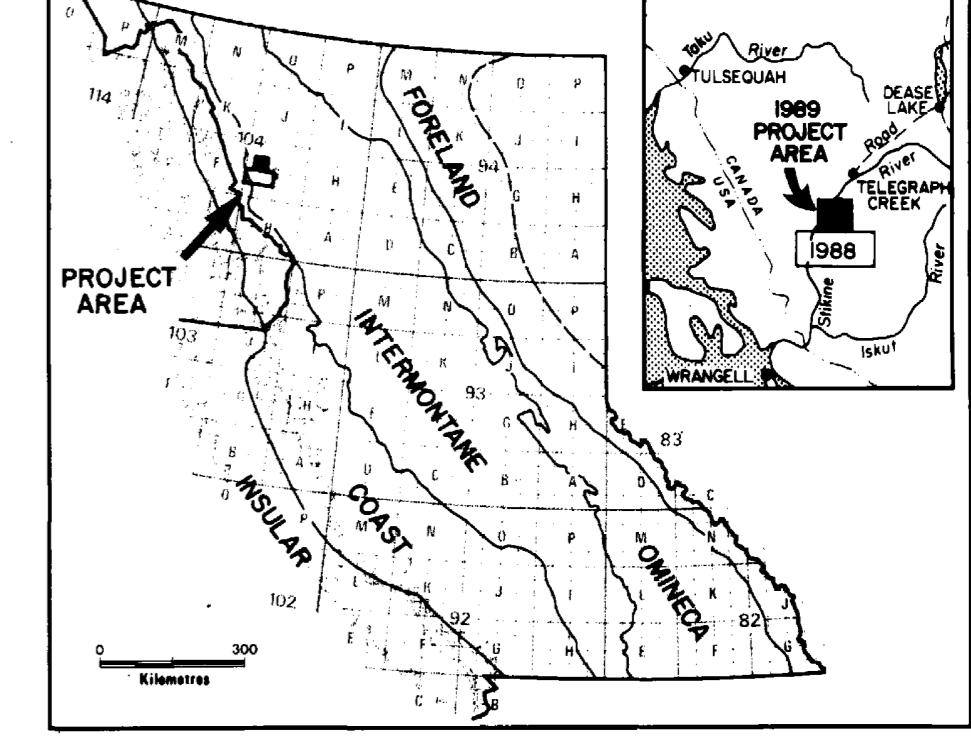
DEREK A. BROWN, CHARLES J. GREIG AND MICHAEL H. GUNNING

SCALE 1:100 000

0 1 2 3 4 5 6 7 8 9 10 km



Lithogeochemical sample location  
1988 RGS stream sediment sample location  
New mineral occurrence  
MINFILE occurrence  
Gossan or limonite-altered zone  
Current claim blocks (December 1, 1989)  
Fossil collection site (circle = fossil age known)  
K-Ar age-date sample location  
K-Ar age-date (pending) sample location  
Simplified geologic contacts from Open File 1990-1 (Sheet 1)



REGIONAL STREAM SEDIMENT SAMPLE PERCENTILES FOR SELECTED ROCK UNITS  
IN THE ISKUT, SUMDUM, TELEGRAPH CREEK AND TULSEQUAH MAP AREAS (104B, F, G AND K)

ROCK UNIT	PERCENTILE	Cu	Au	Ag	Pb	Zn	Ni	Co	Mo	Sn	W	F	U	As	Sb	Hg	Ba
STIKINE	75%	76	15	0.2	11	92	36	17	3	3	420	3.4	18	1	30	1100	
(n=327)	95%	125	72	0.5	27	152	92	25	6	13	5	620	13.2	83	4.5	110	1484
STUHINI	75%	88	14	0.3	14	120	41	20	3	4	3	380	3.1	21	1.6	90	1100
(n=583)	95%	137	10	0.6	32	227	91	30	6	8	5	530	8.2	64	4.6	220	1614
HAZELTON	75%	55	9	0.3	14	160	106	19	3	3	410	2.9	22	1.6	130	1200	
(n=538)	95%	109	63	0.5	35	352	141	27	8	5	4	570	5.1	95	5.4	300	1700
SUSTUT/SLOKO	75%	40	5	0.1	9	95	36	16	1	3	2	270	3.9	3	0.4	25	891
(n=28)	95%	94	20	0.2	14	106	59	20	2	5	2	320	5.4	6	0.6	35	1150
INTRUSIONS	75%	54	11	0.2	13	80	21	14	3	3	430	10.8	6	0.5	25	1200	
(n=610)	95%	149	65	0.5	41	146	55	24	9	6	8	630	2.2	34	1.4	95	1700

### FOSSIL COLLECTIONS

MAP FIELD NO.	GSC UTM (ZONE 09)	DESCRIPTION OF FAUNA	AGE	REF.
<b>STIKINE ASSEMBLAGE</b>				
1	GR98-398	nothing determined	indeterminate	3
2	MGU98-44	corals, fusulines	prob. early Penn.	5
3	MGU98-40	1589527	340524	6381897
4	MGU98-142	1600655	340555	6380920
<b>STUHINI GROUP</b>				
5	GR98-168	160014	351657	6389853
6	GR98-170	160016	351614	6389732
7	GR98-178	160018	345671	6400983
8	GR98-200	160019	346039	6389843
9	GR98-216	160026	346333	6400672
10	GR98-217	160027	346333	6400672
11	GR98-218	160028	346320	6400672
12	GR98-219	160029	346320	6400672
13	GR98-223	160034	346344	6389843
14	GR98-227	160036	345979	6394921
15	GR98-228	160038	344216	6400424
16	GR98-229	160039	344201	6400372
17	GR98-230	160040	344201	6400372
<b>HAZELTON GROUP</b>				
18	GR98-231	160041	349662	6401010
19	GR98-232	160042	353320	6379515
20	GR98-233	160043	353302	6379515
21	GR98-234	160044	353302	6379515
22	GR98-235	160045	353302	6379515
23	GR98-236	160046	353427	6379515
24	GR98-237	160047	354705	6379515
25	GR98-238	160048	354705	6379515
26	GR98-239	160049	354726	6379515
27	GR98-240	160050	354726	6379515
28	GR98-241	160051	354767	6379515
29	GR98-242	160052	354767	6379515
30	GR98-243	160053	354767	6379515
31	GR98-244	160054	354767	6379515
32	GR98-245	160055	354767	6379515
33	GR98-246	160056	354767	6379515
34	GR98-247	160057	354767	6379515
35	GR98-248	160058	354767	6379515
36	GR98-249	160059	354767	6379515
37	GR98-250	160060	354767	6379515
38	GR98-251	160061	354767	6379515
39	GR98-252	160062	354767	6379515
40	GR98-253	160063	354767	6379515
41	GR98-254	160064	354767	6379515
42	GR98-255	160065	354767	6379515
43	GR98-256	160066	354767	6379515
44	GR98-257	160067	354767	6379515
45	GR98-258	160068	354767	6379515
46	GR98-259	160069	354767	6379515
47	GR98-260	160070	354767	6379515
48	GR98-261	160071	354767	6379515
49	GR98-262	160072	354767	6379515
50	GR98-263	160073	354767	6379515
51	GR98-264	160074	354767	6379515
52	GR98-265	160075	354767	6379515
53	GR98-266	160076	354767	6379515
54	GR98-267	160077	354767	6379515
55	GR98-268	160078	354767	6379515
56	GR98-269	160079	354767	6379515
57	GR98-270	160080	354767	6379515
58	GR98-271	160081	354767	6379515
59	GR98-272	160082	354767	6379515
60	GR98-273	160083	354767	6379515
61	GR98-274	160084	354767	6379515
62	GR98-275	160085	354767	6379515
63	GR98-276	160086	354767	6379515
64	GR98-277	160087	354767	6379515
65	GR98-278	160088	354767	6379515
66	GR98-279	160089	354767	6379515
67	GR98-280	160090	354767	6379515
68	GR98-281	160091	354767	6379515
69	GR98-282	160092	354767	6379515
70	GR98-283	160093	354767	6379515
71	GR98-284	160094	354767	6379515
72	GR98-285	160095	354767	6379515
73	GR98-286	160096	354767	6379515
74	GR98-287	160097	354767	6379515
75	GR98-288	160098	354767	6379515
76	GR98-289	160099	354767	6379515
77	GR98-290	160100	354767	6379515
78	GR98-291	160101	354767	6379515
79	GR98-292	1		