British Columbia Geological Survey

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NTS 104B/9,10,15,16; 104G/1,2

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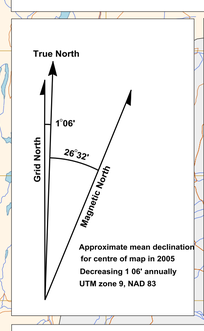
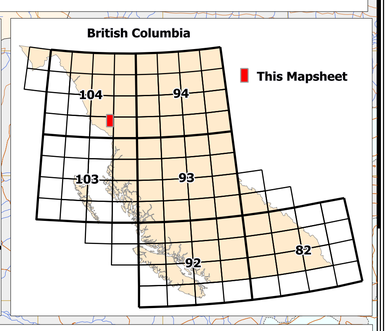
Compilation and Cartography by Tim Hewett and Sen-Huy Tan

Kilometers: 1 0 1 2 3 4

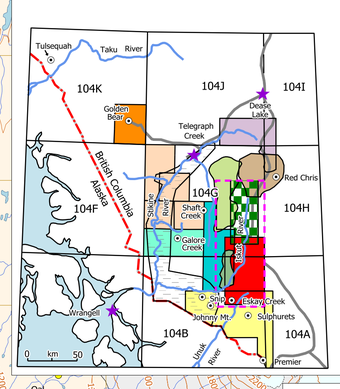
Scale 1:50,000

Fieldwork carried out in 2004
Map published July, 2005



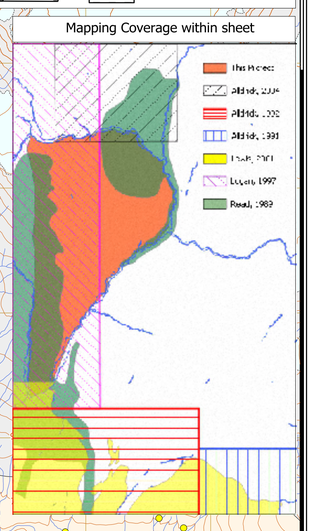


PUBLISHED MAPS



- Mine or Developed prospect
- This Mapping Project 2004-2005
- Alldrick et al. (2004)
- 2003-2005 TGI Project
- Evenchick and Thorkelson (2004)
- Ash et al. (1997)
- Logan et al. (1997)
- Logan and Koyanagi (1994, 1989)
- Bradford and Brown (1993)
- Stikine Project - Geoscience Maps 1993-3 to 1993-6
- Souther (1992)
- Alldrick et al. (1987, 1988, 1989, 1990, 1991, 1992)
- Read et al. (1989)
- Read (1983, 1984)
- 104J Gabrielese (1980)
- 104G Souther (1972)
- 104K Souther (1971)
- 104F Souther (1959)
- Kerr (1948)

Mapping Coverage within sheet



LEGEND

INTRUSIVE ROCKS

CENOZOIC

Eocene (Hyder)

- Eqp — Rhyolite; dikes, sills and stocks; white, quartz-phyric to aphanitic

MESOZOIC

Middle Jurassic (Three Sisters)

- MJd — Diorite
- MJMd — Diorite; fine grained, weakly foliated Melville Pluton and associated stocks (172 Ma)
- MJgb — Gabbro; (age uncertain) correlated with Nickel Mountain intrusions
- MJpx — Pyroxenite

Early Jurassic (Texas Creek)

- EJf — Felsite dikes and stocks
- EJp — Granodiorite: fine-grained, hornblende porphyritic, K-feldspar megacrystic. "Premier Porphyry" texture
- EJgd — Granodiorite; medium to coarse grained; hornblende porphyritic; K-feldspar megacrystic
- EJmz — Plagioclase (+/- K-feldspar) porphyritic hypabyssal monzonite (193 Ma)

Late Triassic

- LTsy — Syenite

PALEOZOIC

Devono-Mississippian

- LD-EMg — Granite
- LD-EMd — Diorite

STRATIFIED ROCKS

CENOZOIC

Quaternary (Pleistocene to Holocene)

- Qt — Talus; landslide debris fan (Holocene)
- Qal — Alluvium (Pleistocene)

Pliocene to Holocene

STIKINE VOLCANIC BELT

- PHk — Crater lake (Holocene). No lithologies preserved
- PHb — Basalt flows; massive, local pillows, cinder layers

Eocene

ENDAKO GROUP

- Esd — Pebble conglomerate, white and green tuffaceous sandstone, black coaly mudstone; wood fragments

MESOZOIC

Middle to Upper Jurassic

BOWSER LAKE GROUP

- muJs — Siltstone, sandstone, mudstone; rare chert pebble conglomerate
- muJcg — Chert pebble conglomerate with sandstone, wacke or grit matrix

Toarcian to Bajocian

Upper HAZELTON GROUP

Eskay Facies

- lmJEb — Basalt; pillow basalt, pillow breccia, massive basalt flows, hyaloclastite. Basaltic sills and dikes, peprite. Minor intercalated mudstone horizons including basal "Contact Mudstone" (ore host)
- lmJEr — Rhyolite; flow-banded, flow lobes, breccias, hyaloclastite, perlite, spherulites. Multiple flow-dome complexes. (Eskay Rhyolite; Footwall Rhyolite)
- lmJEd — Dacite; fragmental tuff and amygdaloidal flow (Mount Dilworth Formation; Footwall Volcanic Unit; Datum Dacite)

Downpour Creek facies

- lmJDC — Undivided sedimentary and volcanic rocks
- lmJDCsl — Dark grey to black mudstone and siltstone with thin beds of silty limestone, sandstone, and rare pebble conglomerate. Minor rhyolite and basalt flows, sills and/or dikes
- lmJDCr — Rhyolite; white, aphanitic; black matrix breccia
- lmJDCb — Basalt, pillow basalt

Iskut River facies

- lmJIRm — Carbonaceous mudstone; black, lustrous, phyllitic
- lmJIRvs — Dacite breccia; coarsely clastic to finely comminuted with rare exotic limestone clasts and olistoliths. Minor siltstone interbeds
- lmJIRsl — Black siltstone, mudstone, sandstone
- lmJIRsd — Sandstone, siltstone, mudstone, and dacitic volcaniclastic beds; dacite debris-flow breccias
- lmJIRcg — Felsic volcanic conglomerate to volcanic breccia, minor sandstone intervals
- lmJIRr — Rhyolite breccia. Sharply angular aphantic rhyolite clasts in sandy (hyaloclastite?) groundmass. White, grey, black colour-mottling

Sixpack Range facies

- lmJSP — Undivided. Interbedded sandstone, mudstone, basalt
- lmJSPb — Basalt. Massive, aphanitic to fine-grained, equigranular to locally glomeroporphyritic. Multiple massive subaerial flows, up to 10 metres thick, exposed over a 200 m cliff face
- lmJSPsd — Sandstone. Well bedded with graded beds; incorporates minor pebble conglomerate
- lmJSPcg — Polymictic conglomerate and subordinate sedimentary breccia
- lmJSPbx — Talus breccia to sedimentary breccia, ranging from monolithologic to somewhat polymictic

Forgold facies

- lmJFb — Basalt. Massive basalt flows, pillow basalt and pillow breccia. Rare flow-banded basalt flows and columnar-jointed basalt.
- lmJFfccv — Rhyolite (Four Corners Complex). Massive rhyolite flows with interbedded siliceous, pyritic black mudstone.
- lmJFfccd — Subvolcanic dikes (Four Corners Complex); felsic (rhyolite and lesser dacite) and mafic (basalt and diabase).

Pillow Basalt Ridge facies

- lmJPR — Undivided. Mostly basalt and pillow basalt with uncertain stratigraphic position relative to the Middle Unit.
- lmJPRsl — Upper sedimentary unit. Dark grey siltstone and lesser sandstone with pillow basalt interbeds near base.
- lmJPRub — Upper pillow basalt unit. Pillowed and massive basalt flows. Minor mudstone and rare rhyolite lenses and dikes. Includes siliceous mudstone (lmJPRm)
- lmJPRm — Siliceous mudstone with tuffaceous siltstone laminations
- lJPRmu — Middle Unit. Siliceous mudstone and tuffaceous siltstone with interbedded to flow-banded rhyolite and massive brecciated rhyolite (lJPRr)
- lJPRr — Rhyolite. Massive to flow-banded; and brecciated flows (peperite)
- lJPRlb — Lower pillow basalt unit: pillowed basalt flows

Lower Jurassic - Sinemurian to Toarcian

Lower HAZELTON GROUP

- lJf — Dacite; Felsic flows and pyroclastic rocks; flow-banded to fragmental textures; local welded ash flows (Mount Dilworth Formation)
- lJb — Basalt; pillow basalt, fire-fountain deposits; mafic tuffs
- LJsl — Thin-bedded grey to black siltstone, calcareous siltstone, sandstone, sedimentary breccia
- lJr — Rhyolite on Logan Ridge. Resistant rhyolite flows; massive to brecciated flow-banded, spheroidal
- lJp — Andesite; plagioclase porphyritic plugs and flows
- lJcg — Maroon-weathering volcanic conglomerate and breccia; epiclastic; polymictic. Lesser andesite to dacite flows. Rare basalt flows (lJb). Rare dikes and pods of plagioclase porphyritic andesite (lJp). Rare limestone (lJls). (Betty Creek Formation)
- lJsd — Sandstone; lesser wacke, siltstone, mudstone, conglomerate
- lJv — Andesite to dacite flows, massive; lesser maroon-weathering volcanic conglomerate and breccia.

Lower Jurassic - Hettangian to Sinemurian

- lJsJ — Basal sedimentary unit. Undifferentiated clastic sedimentary rocks; includes sandstone, siltstone, mudstone, granule to pebble conglomerate; local clast-supported granitoid pebble to boulder conglomerate. (upper Jack Formation)
- lJcgJ — Basal conglomerate marking unconformity. Granitoid cobbles to boulders. (Jack Formation in part).

STRATIFIED ROCKS

MESOZOIC (continued)

Upper Triassic

STUHINI GROUP

Sulphurets Area

- uTb4 — Basalt; dark grey massive plagioclase porphyritic flows and coarse bladded plagioclase and pyroxine porphyry dikes
- uTsJ — Clastic sedimentary rocks. (lower Jack Formation)
- uTd2 — Dacite. Felsic fragmental unit; lapilli, ash and crystal tuff.
- uTi3 — Intermediate volcanic rocks; andesite flows and breccias
- uTb3 — Mafic volcanic fragmental. Lapilli to block tuff. Augite phenocrysts, highly vesicular. Dark olive weathering. May include mafic volcanic flows and dikes, sedimentary rocks, and volcanic conglomerate
- uTs3 — Dark grey siltstone, carbonaceous, calcereous mudstone, muddy and silty limestone; fossiliferous

Lehto Area

- uTvcg2 — Mafic volcanic conglomerate with minor interbedded mudstone. Mafic fragmental with tiny augite and feldspar phenocrysts. Dark olive weathering.
- uTi2 — Intermediate volcanic rocks; andesite flows and breccias
- uTsd2 — Sandstone. Dominantly volcanic sandstone with lesser mudstone and conglomerate. Conglomerate shows angular to rounded, pebble to cobble sized clasts.

Downpour Area

- uT — Undivided.
- uTb4 — Basalt; dark grey massive plagioclase porphyritic flows and coarse bladed plagioclase and pyroxene porphyry dikes
- uTsv2 — Sedimentary and volcanic rocks. Well-bedded augite-plagioclase-bearing volcanic sandstone, mudstone; lesser volcanic breccia
- uTvs — Volcanic and sedimentary rocks: predominantly coarse green to maroon augite-plagioclase porphyritic volcanic breccia
- uTs2 — Dark grey siltstone, carbonaceous, calcareous mudstone, muddy and silty limestone; fossiliferous
- uTc3 — Limestone; white, slab (olistolith) within volcaniclastic strata
- uTb2 — Mafic volcanic fragmental. Lapilli to block tuff. Augite phenocrysts, highly vesicular. Dark olive weathering. May include mafic volcanic flows and dikes, sedimentary rocks and volcanic conglomerate

Northmore Icefield Area

- uTc3 — Limestone; white, massive to bedded, may be fossiliferous, slabs (olistoliths) within volcaniclastic strata
- uTb1 — Mafic volcanic fragmental. Lapilli to block tuff. Augite phenocrysts, highly vesicular. Dark olive weathering. May include mafic volcanic flows and dikes (uTb), sedimentary rocks (uTvs) and
- uTc2 — Limestone; white, bedded, may be fossiliferoud (corals), grades laterally into fossiliferous siltstone (belemnites, pelecypods)
- uTsd1 — Sandstone. Dominantly volcanic sandstone with lesser mudstone and conglomerate. Conglomerate shows angular to rounded, pebble to cobble sized clasts.
- uTr — Rhyolite. Black, flow banded, flow layered, pyritic; locally resembles black ribbon chert
- uTc1 — Limestone; massive, white, slabs (olistoliths) within volcaniclastic units
- uTi1 — Andesite; flows and breccias, massive to bedded volcanic conglomerate
- uTsn — Lower volcanics and sandstone; epiclastic conglomerate
- uTds — Volcanic siltstone, medium green, well-bedded dacitic to andesitic siltstone
- uTd1 — Dacite; massive, aphyric, flows to well-bedded tuff and volcanic conglomerate

Southmore Icefield Area

- uT — Undivided.
- uTvcg1 — Mafic volcanic conglomerate with minor interbedded mudstone. Mafic fragmental with tiny augite and feldspar phenocrysts. Dark olive weathering.
- uTb1 — Mafic volcanic fragmental. Lapilli to block tuff. Augite phenocrysts, highly vesicular. Dark olive weathering. May include mafic volcanic flows and dikes, sedimentary rocks and volcanic conglomerate
- uTsd1 — Sandstone. Dominantly volcanic sandstone with lesser mudstone and conglomerate. Conglomerate shows angular to rounded, pebble to cobble sized clasts.
- uTr — Rhyolite. Black, flow banded, flow layered, pyritic; locally resembles black ribbon chert.
- uTc1 — Limestone; massive, white, recrystallised; slabs within volcaniclastic units
- uTsn — Lower volcanics and sandstone; epiclastic conglomerate

Matthew Glacier Area

- uTb1 — Mafic volcanic fragmental. Lapilli to block tuff. Augite phenocrysts, highly vesicular. Dark olive weathering. May include mafic volcanic flows and dikes, sedimentary rocks and volcanic conglomerate
- uTs1 — Dark grey siltstone, carbonaceous, calcareous mudstone, muddy and silty limestone; fossiliferous
- uTsv1 — Sedimentary and volcanic rocks. Well-bedded augite-plagioclase-bearing volcanic sandstone, mudstone; lesser volcanic breccia
- uTsn — Lower volcanics and sandstone; epiclastic conglomerate
- uTsl — Black and brown siltstone; orange sandstone
- muTsl — Black siltstone, carbonaceous, calcareous mudstone, muddy and silty limestone; minor chert

PALEOZOIC

STIKINE ASSEMBLAGE

Permian

- P — Undivided
- Pc3 — Limestone slabs within volcaniclastic rocks
- Pv — Volcanic rocks. Basalt, andesite, rhyolite; variably chloritised, strongly foliated
- Psl — Phyllite, siliceous siltstone, minor chert and wacke
- Pc2 — Limestone slabs within clastic rocks
- Pc1 — Limestone olistolith within Iskut River facies dacite breccia

Carboniferous

- Csl — Grey to light green phyllitic siltstone, graphitic argillite, siliceous phyllite/tuff and thin lenses of dark brown limestone, fetid dolomitic limestone, and minor interbeds of maroon and green tuff and cherty siltstone

Devono-Mississippian

- DM — Undivided. Basalt and andesite; hyaloclastite, pillowed and flow breccia rocks. Minor foliated clastic sedimentary rocks, including siltstone, sandstone, chert, tuff, and recrystalized limestone. Massive grey bioclastic limestone with silty dolomitic layers.

SYMBOLS

- Contours at 100m intervals
- River
- Lake
- Glacier; Icefield
- Road
- Airstrip
- Townsite
- Minesite
- Field Station
- Mineral Occurence
- RGS sample site
- Hotspring
- Geological contact - assumed
- Geological contact - approximate
- Geological contact - defined
- Thrust Fault - defined
- Thrust Fault - approximate
- Normal Fault - assumed
- Normal Fault - approximate
- Normal Fault - defined
- Strike-Slip Fault - defined
- Strike-Slip Fault - approximate
- Cleavage, axial
- Dike
- Dike - vertical
- Lineation - unspecified
- Lineation - 2nd generation
- Lineation - crenulation
- Bedding
- Bedding - vertical
- Foliation - 1st generation
- Foliation - 1st generation - vertical
- Foliation - 2nd generation
- Foliation - 2nd generation - vertical
- Shear band
- Shear band - vertical
- Igneous flow banding
- Foliation - unspecified
- Foliation unspecified vertical
- Bedding tops known
- Bedding tops known - overturned
- Vein - early
- Brittle shear/fault plane
- Iskut River shear zone

MINERAL OCCURRENCES

MAP #	NAME	MINFILE #	STATUS	COMMODITIES	EASTING	NORTHING
1	Ice		Showing	Cu Au Ag	401535	6336200
2	Snoball	104G 143	Showing	Au Ag Cu Pb Zn As	409950	6336100
3	Little Les	104G 079	Prospect	Cu Ag Au	400720	6331860
4	Biskut	104G 146	Showing	Au Ag Cu Pb Zn As	403381	6331472
5	Bis		Prospect	Cu As Mo Ag Au	402915	6331215
6	Arctic 8		Showing		399065	6331145
7	Downstream		Showing	As Sb Hg	400485	6330215
8	Arctic Grid				401400	6330165
9	Bench	104B 010	Showing	Ag Hg Zn Cu Mo Pb Au As Sb	409490	6330105
10	East		Showing	As Au	402900	6330095
11	KC		Showing	Cu Au Ag	397140	6329780
12	Lucifer	104G 145	Prospect	Cu Au As Ba Cd Mo Pb Zn	407979	6329387
13	Iskut River	104G 104	Showing	Limestone	415586	6324280
14	RDN Camp				398770	6323970
15	Main Zone		Prospect	Ag Au Zn Cu Pb	399355	6323810
16	Baseline	104G 144	Showing	Au	399180	6323665
17	Gem		Prospect	Ag Au	399565	6322980
18	Sinter		Prospect	Ba Zn Cu As Ag Hg Pb	409560	6322175
19	Logan Ridge		Showing		406030	6319780
20	Waterfall	104G 144	Showing		400115	6319230
21	Wedge	104G 144	Prospect	Au Ag Zn Cu Pb	399975	6319070
22	Southmore		Showing	Hg Ag Mo Zn As Cu Pb Sb	413310	6318760
23	Jungle	104G 144	Prospect	Au As Ag Pb	401420	6317365
24	Gossan Creek		Prospect	Zn Cu Pb Ag Au	400910	6317240
25	Steen Vein		Showing	Ag Au Pb Zn	400290	6316195
26	Marcasite Gossan	104G 144	Prospect	Ag Mo Hg As Sb	400135	6314780
27	South Gossan		Showing		399935	6313870
28	RTB		Showing	Zn Pb Cu Ag Au Sb As Hg	400710	6311425
29	Boundary	104G 144	Prospect	Au Ag Cu Zn Pb As Hg	400040	6310950
30	Forgold	104B 378	Prospect	Cu Pb Zn Ag Au	399429	6309294
31	Twin East		Showing		405840	6308160
32	Twin West		Showing		405120	6308015
33	Four Corners		Showing	Pb Ag	401000	6307715
34	Sunkist		Showing	As Zn	406950	6305900
35	Malachite Peak		Showing	Cu	403620	6304260
36	PBR North		Showing	Zn Ag Ba	403150	6300650
37	Mohole		Showing		401956	6297577
38	Forrest	104B 380	Prospect	Au Ag Cu Pb Zn	397104	6292464
39	Iskut-Palmiere		Showing	Au As	403565	6287490
40	Eskay Creek 21A	104B 008	Deposit	Ag Au	411436	6278844
41	Eskay Creek 22		Showing	Ag Au	410754	6278120
42	Icefield	104B 120	Showing	Cu	427600	6275250
43	Orpiment		Showing	As, alunite	430638	6274700
44	GNC	104B 391	Prospect	Zn Cu Ag	408669	6275123
45	Copper King	104B 007	Showing	Cu Fe Au	404050	6274750
46	Bonsai	104B 383	Showing	Au Ag	404844	6274187
47	Bruce Glacier	104B 072	Prospect	Au Ag Zn Pb Cu	416508	6273939
48	Mama Susu North	104B 374	Showing	Ag Cu Pb Zn Sb Au	427100	6273750
49	Mama Susu South	104B 371	Showing	Au Ag Cu Pb Zn Sb	427200	6273000
50	Barb Lake	104B 085	Showing	Cu	406000	6273000
51	Lulu	104B 376	Prospect	Au Ag Sb Zn	408706	6272895

COMPILATION SOURCES AND OTHER REFERENCES

Alldrick, D.J., Nelson, J.L. and Barresi, T. (2005): Tracking the Eskay Rift through northern British Columbia - Geology and Mineral Occurrences of the upper Iskut River area; Geological Fieldwork 2004, B.C. Ministry of Energy and Mines, Paper 2005-1, p.1-30.

Alldrick, D.J., Stewart, M.L., Nelson, J.L. and Simpson, K.A. (2004a): Geology of the More Creek - Kinaskan Lake area, northwestern British Columbia; British Columbia Ministry of Energy and Mines, Open File Map 2004-2, Scale 1:50 000.

Alldrick, D.J., Stewart, M.L., Nelson, J.L. and Simpson, K.A. (2004b): Tracking the Eskay Rift through northern British Columbia - geology and Mineral occurrences of the Upper Iskut River area; British Columbia Ministry of Energy and Mines, Geological Fieldwork 2003, Paper 2004-1, p.1-18.

Alldrick, D.J. (2000): Exploration significance of the Iskut River Fault; British Columbia Ministry of Energy and Mines, Geological Fieldwork 1999, Paper 2000-1, p.237-248.

Alldrick, D.J. and Britton J.M. (1992): Unuk River Area Geology, BC Ministry of Energy, Mines and Petroleum Resources, Open File Map 1992-22, Scale 1:20 000, 5 sheets.

Alldrick, D.J., and Britton, J.M. (1991): Suphurets Area Geology, BC Ministry of Energy, Mines and Petroleum Resources, Open File Map 1991-21, Scale 1:20,000, 5 sheets.

Barresi, T., Nelson, J.L., Alldrick, D.J. and Dostal, J. (2005): Pillow Basalt Ridge Facies - detailed mapping of Eskay Creek equivalent stratigraphy (Iskut River NTS 104B/9, 10, 15, 16); British Columbia Ministry of Energy and Mines, Geological Fieldwork 2004, this volume.

Lewis, P.D., Toma, A., Tosdal, R.M., editors (2001): Metallogenesis of the Iskut River Area, Northwestern British Columbia: Mineral Deposit Research Unit, University of British Columbia, Special Publication Number 1.

Logan, J.M., Drobe, J.R., Koyanagi, V.M. and Elsby, D.C. (1997): Geology of the Forest Kerr - Mess Creek Area, Northwestern British Columbia (104B/10,15 & 104G/2 & 7W), British Columbia Ministry of Employment and Investment, Geoscience Map 1997-3, scale 1:100 000

Logan, J.M., Drobe, J.R. and McClelland, W.C. (2000): Geology of the Forest Kerr - Mess Creek Area, Northwestern British Columbia (104B/10,15 & 104G/2 & 7W); British Columbia Ministry of Energy and Mines, Bulletin 104, 164p.

Operation Stikine (1957): Stikine River area, British Columbia (104A, B, G, H, I, J). Map 9-1957.

Read, P.B., Brown, R.L., Psutka, J.F., Moore, J.M., Journeay, M., Lane, L.S. and Orchard, M.J. (1989): Geology, More and Forest Kerr Creeks (parts of 104B/10,15,16 & 104G/1, 2), Northwestern British Columbia; Geological Survey of Canada, Open File 2094.

Souther, J.G., 1972: Telegraph Creek map-area, British Columbia; Geological Survey of Canada, Paper 71-44.

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This map may be obtained from Crown Publications Inc., Victoria, B.C. and can be viewed on this website: http://www.em.gov.bc.ca/mining/geolsurv/bedrock/mapsonline