

Geology by S. Israel (2001-2002), P. van der Heyden (1989-1991),
H.W. Tipper (1954-1957)

Geological compilation by S. Israel

Digital cartography by N.L. Hastings and M. Ceh, Geological Survey of Canada

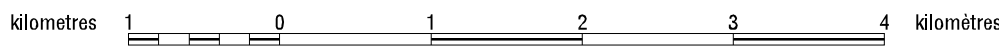
Contribution of Bella Coola Targeted Geoscience Initiative, Cordilleran
Energy and Minerals Project Number Y15

Any revisions or additional geological information known to the user
would be welcomed by the Geological Survey of Canada

OPEN FILE 5389

GEOLOGY ATNARKO (93C/05) BRITISH COLUMBIA

Scale 1:50 000/Echelle 1:50 000



Universal Transverse Mercator Projection
North American Datum 1983
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Projection transversale universelle de Mercator
Système de référence géodésique nord-américain, 1983
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Digital base map from data compiled by Geomatics Canada
modified by Geological Survey of Canada

Mean magnetic declination 2006, 19° 59' E, decreasing 15.0' annually.
Readings vary from 20° 05' E in the northwest to 19° 53' E
in the southeast corner of the map

Elevations in feet above mean sea level

Contour interval 100 feet

93 D09	93 D12	93 D11
93 D08	93 D05 OF5389	93 D06
93 D01	93 D04 OF5388	93 D03

NATIONAL TOPONYMIC SYSTEM REFERENCE AND INDEX
TO ALBUQUERQUE GEOLOGICAL SURVEY OF CANADA MAPS

LEGEND

STRATIFIED ROCKS

QUATERNARY
Qal Recent alluvium, fill

NEOGENE
MIOCENE
Mcv Vesicular and amygdaloidal basalt, fine-grained to porphyritic; black, brown and grey olivine basalt; breccia, tuff, columnar jointing common
Mcs Poorly consolidated conglomerate, breccia, fine-grained siltstone; angular clasts of vesicular olivine basalt and plutonic rocks in fine grained sandy matrix; buff weathering siltstone

UPPER CRETACEOUS
POWELL CREEK FORMATION
uKpc Green, purple, maroon and grey, subaerial andesitic agglomerate and breccia, lapilli tuff, rare flows; minor intercalated calcareous siltstone and sandstone

LOWER CRETACEOUS
?APTIAN-ALBIAN
SALLOOMT ASSEMBLAGE (U/Pb ca. 112 Ma)
IKs Amygdaloidal basalt +/- hornblende-augite-plagioclase andesite porphyry; local reworked volcanic breccias; rare columnar jointing; lesser andesitic to rhyolitic lapilli tuff, maroon to green to white, fine- to medium-grained feldspathic sandstone, locally cross-stratified and calcareous, with shale rip-up clasts; siltstone; dark mudstone to argillite

MIDDLE TO UPPER JURASSIC
CALLOWAN-OXFORDIAN
HOTNAROK VOLCANICS
muJhv Green and maroon dacite and andesite flows; flow-banded rhyolite, crystal-rich tuffs and volcanic breccias with plagioclase phenocrysts; minor shale and siltstone; can be mistaken for IKM

LOWER TO UPPER JURASSIC
ELJg Middle to upper amphibolite facies undifferentiated orthogneiss and migmatitic gneisses; black fine-grained amphibolite with stromatolite, tonalite leucosomes; could be in part metamorphosed equivalents of TJA and LJSF

?TRIASSIC TO LOWER JURASSIC
ATNARKO ASSEMBLAGE
?TJA Upper greenschist facies dark green, fine-grained basaltic meta-volcanic rocks interlayered with fine-grained metasedimentary rocks, rare interbeds of meta-rhyolite within meta-volcanic rocks; strongly foliated and internally folded

INTRUSIVE ROCKS

LATE CRETACEOUS TO EOCENE
LKEp Undifferentiated granitic plutons; hornblende-biotite tonalite to granite; fine- to medium-grained, equigranular

LATE CRETACEOUS
FOUNDER PLUTONIC SUITE (U/Pb ca. 63-68 Ma)
LKF ±Pyroxene-hornblende-biotite quartz diorite to granodiorite; medium- to coarse-grained, equigranular to locally inequigranular with potassium feldspar megacrysts; homogeneous; distinct salt-and-pepper fresh appearance with conspicuous sphene

EARLY CRETACEOUS
EKgd (U/Pb ca. 114-103 Ma); Undifferentiated granodiorite to quartz-diorite and tonalite, locally garnet bearing; medium- to coarse-grained, strongly foliated to gneissic textures developed locally

EKF FIRVALLE PLUTONIC SUITE (U/Pb ca. 132-141 Ma)
Hornblende-biotite diorite and granodiorite to granite; medium- to coarse-grained; light pink to light green colour from incipient chlorite alteration; strongly foliated to gneissic textures

LATE JURASSIC
STICK PASS PLUTONIC SUITE (U/Pb ca. 148-156 Ma)
LJSP Hornblende-biotite quartz monzodiorite to granite; medium- to coarse-grained, equigranular to inequigranular; abundant epidote veining; mylonitic to gneissic textures developed locally

SYMBOLS

Geological contact (defined, approximate, assumed)
Fault (defined, approximate, assumed; shaded under Qal and water)
Fault, compressional, defined, approximate, assumed (teeth on upthrust side)
Shear zone (inclined)
Fold axis
Bedding (tops unknown inclined)
Foliation (inclined, vertical)
Stretching lineation
Lineation (undivided)
Dike (inclined)
Fault
Field Station location where not indicated by other symbol (foliation, etc.)
Fossil locality with ID number
K-Ar age determination locality with ID number
U-Pb age determination locality with ID number
MINFILE occurrence with ID number
Park Boundary

GEOCHRONOLOGY					
MAP #	FIELD #	AGE (Ma)	MINERAL	METHOD	REFERENCE
1	V95-30-1	112.2 ± 0.6	Zircon	U-Pb	1
2	V95-79	117.1 ± 0.3	Zircon	U-Pb	2
3	V95-72	126.8 ± 0.3	Zircon	U-Pb	1
4	V95-72	95.4 ± 0.2	Biotite	K-Ar	1
5	V95-70	114.9 ± 0.3	Zircon	U-Pb	1
6	V95-42	ca. 132.4	Zircon	U-Pb	1

MINFILE*				
MAP #	MINFILE	NAME	STATUS	COMMODITY
1	093C/012	TEL	Showing	Molybdenum

* Data from British Columbia Geological Survey Branch MINFILE Mineral Inventory
van der Heyden, P. 2004. Uranium-lead and potassium-argon ages from eastern Bella Coola and adjacent parts of Atnarko Lake and Mount Washington map areas, west-central British Columbia. Geological Survey of Canada, Current Research 2004-42, 14 pp.
* van der Heyden, P. Unpublished data.

PALEONTOLOGY*					
MAP #	GSC #	FIELD #	COLLECTOR	DATE	FOSSILS
1	79739	F-An-100-TD	H.W. Tipper	1957	Phoronopsis sp. indet., cf. Lophos sp. indet., Hederia? ex aff. packed; bivalves indet.
2*	28316	F56-1-TD	H.W. Tipper	1956	trilobites indet., bivalves indet.
3*	28317	FTG-27-TD	H.W. Tipper	1956	bivalve fragments; bellerophon fragments
4	C-156334	HBB-V95-29	P. van der Heyden	1989	Gryphodonta(?) sp., Phoronopsis sp., Myophorella sp. aff. packardii; Anisograptus sp. aff. plumosus; Myophorella sp., Astarte sp., Lucania sp., bellerophon(?) indet., echinoderm fragments
5	C-156337	HBB-V95-84	P. van der Heyden	1989	corals, indet., bellerophon(?) indet.

* compiled by J.W. Haggart
* unpublished G.S.C. Paleontological Report numbers
* precise location unknown

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