



LEGEND

- QUATERNARY**
- Qal Recent alluvium, fill
- NEOGENE**
- MIOCENE**
- CHILCOTIN GROUP**
- 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 flow; minor intercalated calcareous siltstone and sandstone
- LOWER CRETACEOUS**
- ?APTIAN ALBIAN**
- SALLOOMY 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; black mudstone to argillite
- MIDDLE TO UPPER JURASSIC**
- CALLOVIAN-OXFORDIAN**
- MOUNTARNO VOLCANICS**
- muJhv Green and maroon dikes and andesite flows; flow-banded rhyolite, crystal-litic tuffs and volcanic breccias with plagioclase phenocrysts; minor shale and siltstone; can be mistaken for IKhs
- 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 LKSP
- ?TRIASSIC TO LOWER JURASSIC**
- ?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
- LATE CRETACEOUS TO EOCENE**
- LKEp**
- Undifferentiated granitic plutons; hornblende-biotite tonalite to granite; fine- to medium-grained, equigranular
- LATE CRETACEOUS**
- FOURNIER 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
- FIRVALE PLUTONIC SUITE (U/Pb ca. 132-141 Ma)**
- EKF 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 (top unknown inclined)
- Foliation (inclined, vertical)
- Stretching lineation
- Lineation (unclined)
- Dyke (inclined)
- Fault
- Field Station location where not indicated by other symbol (foliation, etc.)
- Fossil locality with ID number
- Kr-Ar age determination locality with ID number
- U-Pb age determination locality with ID number
- MINFILE occurrence with ID number
- Park Boundary

GEOCHRONOLOGY						MINFILE*				
MAP #	FIELD #	AGE (Ma)	MINERAL	METHOD	REFERENCE	MAP #	MINFILE#	NAME	STATUS	COMMODITY
1	V90-30-1	112.2 ± 0.6	Zircon	U-Pb	1	1	093C_012	TEL	Showing	Molybdenum
2	V90-79	117.1 ± 0.3	Zircon	U-Pb	2					
3	V89-72	120.8 ± 0.5	Zircon	U-Pb	1					
4	V89-72	98.4 ± 0.2	Biotite	K-Ar	1					
5	V89-70	114.9 ± 0.3	Zircon	U-Pb	1					
6	V89-42	ca. 132.4	Zircon	U-Pb	1					

* Data from British Columbia Geological Survey Branch MINFILE Mineral Inventory

PALEONTOLOGY*									
MAP #	GSC #	FIELD #	COLLECTOR	DATE	FOSSILS	AGE	IDENTIFIER	REPORT #**	
1	79739	F-Ae-100-TD	H.W. Tipper	1957	Phoronopsis sp. indet.; of Lophos sp. indet.; Haidara? ex aff. packardii; bivalves indet.	Probably Bathonian to Early Oxfordian	J.A. Jenethy	Km-10-1987-JA	
2	28316	F36-1-TD	H.W. Tipper	1956	Hexacorals indet.; bryozoan? bivalves fragments	Late Triassic?	E.T. Tozer	Tr-10-1956/57-ETT	
3	28317	FTG-27-TD	H.W. Tipper	1956	Bivalve fragments; belemnite fragments	Late Triassic?	E.T. Tozer	Tr-10-1956/57-ETT	
4	C-156338	HHB-V89-29	P. van der Heyden	1989	Cyprina(?) sp.; Pecten(?) sp.; Myophorella sp. aff. packardii; Anostegia sp. aff. plummaria; Myophorella sp.; Astarte sp.; Lucina sp.; belemnites(?) indet.; echinoderm fragments	Probably Callianian; perhaps early or Middle Oxfordian	T.P. Poulsen	J5-1992-TPP	
5	C-156337	HHB-V89-84	P. van der Heyden	1989	corals, indet.; belemnites(?) indet.	Middle or Late Jurassic	T.P. Poulsen	J5-1992-TPP	

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



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. Osh, Geological Survey of Canada

Contribution of Bella Coole 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

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GEOLOGY
ATNARKO (93C/05)
BRITISH COLUMBIA

Scale 1:50 000/Echelle 1/50 000

Universal Transverse Mercator Projection
North American Datum 1983
© Her Majesty the Queen in Right of Canada 2006

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	93 D06
93 D01	93 D14	93 D03
	OF5389	OF5388

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