Geological Map of Cracked Mountain

Author: Martin Harris

Contact: mharris@eoas.ubc.ca

GIS files

The digital shapefiles *CrackedM_Basement_unit_polygons.shp, CrackedM_ Unit_polygons_defined.shp,* and *CrackedM_Contacts_polylines_ confidence.shp* are products of combining geological maps files from a few sources, namely:

1. Open File 603: *of_603_MapUnits.shp* AND *of_603_Contacts.shp*
2. Yuliana Proenza Meng Project: MMVC_MapUnits_OF503_NAD83.shp

As well as visual inspection of GSC published maps:

1. Open file 482: Geology of Pemberton Map Area (92J) – Woodsworth, G, 1977

CrackedM_Basement_unit_polygons.shp reflect the prior mapping of MMVC bedrock lithologies as well as my personal mapping done over the summers of 2019-2020. The unit polygons have been attributed a "Map_Unit" as one of Read (1979) lithologies: Mgd, or uTR-csb. Additionally, non-Cracked Mountain volcanics are included in this layer including small polygons of Read (1979) Ps-6i and Ps-3i.

CrackedM_ Unit_polygons_defined.shp reflect the prior mapping of MMVC bedrock lithologies as well as my personal mapping done over the summers of 2019-2020. Read (1979) originally attributed all Cracked Mountain volcanics as 'Ps-10' (Mosaic Assemblage), but my new maps provide detailed reclassification of the volcanic units. As such, each unit polygon has a new "Map_unit" attribute as one of: CMbpB, CMjL, CMpH, CMpL, CMlTa, CMlTb, or CMlTc.

CrackedM_Contacts_polylines_ confidence.shp reflect the confidence of unit contacts from prior mapping files listed above and from my own personal investigation of unit contacts throughput the Cracked Mountain. Unit contacts are attributed a 'Confidence' of either: Known, Approximate, Inferred, or Limit of Map.

Additional polyline and point data are represented in the following files:*Extensional_Cracks_and_Fractures.shp, Dikes_2019.shp, Dikes_2020.shp, Glacial_striations.shp, and Tuff_bedding.shp*

These data represent extra structural and surficial data for Cracked Mountain, recorded in the field over the 2019 and 2020 summers.

A full list of references used in the generation of this map are found below:

Read, P.., 1979, Meager Creek Geothermal Area: , p. 1 Sheet, doi:10.4095/129507.

Read, P., 1990, Mt Meager Complex, Garibaldi Belt, Southwestern BC.: Geoscience Canada, v. 17, p. 167–170.

Wilson, A.M., and Russell, J.K., 2018, Quaternary glaciovolcanism in the Canadian Cascade volcanic arc—Paleoenvironmental implications: Field Volcanology: A Tribute to the Distinguished Career of Don Swanson. Geological Society of America, v. 538, doi:10.1130/2018.2538(06).

Woodsworth, G., 1977, Geology of Pemberton (92J) Map Area: Geological Survey of Canada, p. 1 sheet.