

LEGEND  
 Coloured legend blocks indicate map units that appear on this map

**QUATERNARY PLEISTOCENE AND RECENT**

- Qg Rock glacier
- Qgl Ice glacier
- Qd Till, alluvium, colluvium

**MESOZOIC**

**TRIASSIC**

- Tsm SPRAY RIVER GROUP (Tsm-Twh) WHITEHORSE FORMATION: siltstone and sandstone, dolomitic, light grey; mudstone and siltstone, red, green, and brown; limestone and dolomite breccia (in structure section 21)
- Tsm SULPHUR MOUNTAIN FORMATION: siltstone and sandstone, dark grey and brown, thin bedded; mudstone, silt, shale, siltstone, dolomitic

**PERMIAN AND PENNSYLVANIAN**

- PPM ROCKY MOUNTAIN GROUP: sandstone, quartzite, light grey, cherty; massive chert sandstone, dolomitic, dolomite, silt

**MISSISSIPPIAN**

- MR RUNDLE GROUP: undivided
- Mmh MOUNT HEAD FORMATION: dolomite, dense, grey to brown, and argillaceous dolomite; limestone, micritic to medium-grained, grey; dolomite, cherty and silty
- Mtv TURNER VALLEY FORMATION: dolomite, crinoidal, medium- to coarse-grained, light grey; limestone, cherty
- Msh SHUNDA FORMATION: limestone, micritic, light- to dark-grey, in part fenestral, cherty; minor breccia
- Mpk PEKISKO FORMATION: limestone, crinoidal, medium- to coarse-grained, light grey, thin bedded
- Mbl BANFF FORMATION: limestone, micritic, dark grey, thin bedded; shale and calcareous shale, dark brownish grey; crinoidal limestone, cherty. At base, shale, black, fossiliferous; sandstone, brown

**DEVONIAN**

**UPPER DEVONIAN**

- Dps PALLISER FORMATION: sandstone, micritic, with dolomitic tracery and mottling, grey, thick bedded; massive
- Dss SASSENACH FORMATION: sandstone and siltstone, fine grained, medium bedded; limestone, silty and argillaceous; shale, silty, calcareous, dark grey
- Dm Mount Hawk FORMATION: mudstone, calcareous, with limestone nodules, grey to brown; limestone, argillaceous with brachiopods and corals; thin bedded, recessive
- Dp PERDRIX FORMATION: shale, black, calcareous, pyritic, with calcareous nodules; thin beds of limestone, dark grey, argillaceous
- Dri FLUME FORMATION: limestone, fine grained to micritic, cherty, dark grey to brown, in part dolomitic, with ammonites and spongiolites; and MALGME FORMATION: limestone, micritic, argillaceous, dark grey, thin bedded with brachiopods

Note: Dm, Dp, and Dri represent strata deposited basinwards from the Cairn and Southest formations, which represent reef-fringed, carbonate buildups

**CAMBRIAN AND ORDOVICIAN**

- COsp SURVEY PEAK FORMATION: shale, grey, calcareous; interbedded with limestone, micritic, minor chert; basal part shale, calcareous, grey to olive, with minor limestone; fine pebbles conglomerate and siltstone; weathers pale greenish grey

**CAMBRIAN**

**UPPER**

- CLx CAMBRIAN LYXIX FORMATION: dolomite and limestone, finely crystalline to micritic, grey; grading to siltstone, dolomitic, laminated, thick bedded to massive; minor shale, greenish grey

**MIDDLE**

- Car ARCTOMYS FORMATION: shale, purple-red, green and grey; with thin interbeds of siltstone and sandstone, dolomitic, yellow with ripple marks, mud cracks, salt casts; minor dolomite, yellow weathering
- Cpk PIKA FORMATION: limestone, micritic, grey, thin bedded; with partings and mottlings of finely crystalline dolomite; limestone-pebble conglomerate; silt, subordinate shale
- Cbl ELDON FORMATION: limestone, micritic, dolomitic mottling, grey, massive; replaced locally by secondary, coarsely crystalline dolomite
- Csl SNAKE RIVER FORMATION: alternating units of limestone and calcareous shale; limestone, micritic, partings, grey and resistant; shales, calcareous, grey, recessive; with silty shales and siltstones, red and green at the base

**LOWER CAMBRIAN AND/OR HADRYNIAN**

- CGG GOG GROUP: sandstone, quartzite, fine- to coarse-grained, light grey, crossbedded, massive; argillaceous sandstone and silty shale (in structure sections 21, 24, and 22)
- CMu MURAL FORMATION: limestone, micritic, dolomite, finely crystalline, grey, with archaeocyathid fragments, massive, some shale interbeds
- CMn McNAUGHTON FORMATION: sandstone, quartzite, crossbedded, massive; pebble conglomerate and felspathic sandstone at base

**HADRYNIAN**

**WINDERMERE SUPERGROUP**

- PMUc UPPER MIETTE GROUP (PMUc - PMUc) Carbonate unit: dolomite, finely crystalline, light brown to grey, locally with spongiolites and pebbles; massive, grades into PMUc; occurs at more than one stratigraphic level
- PMUu Upper unit: shale, silty, dark grey to black; variable amounts of pebbly sandstone; local paraconglomerate with large dolomite caists at base
- PMUp Pelite unit: shale and pelite, silty, brown to dark grey, finely laminated; minor sandstone and siltstone interbeds
- PMUg MIDDLE MIETTE GROUP: Grl unit: ridge forming grit and sandstone; alternating with shale and siltstone, recessive, dark grey; sandstone and grit generally graded and poorly sorted
- PMUf LOWER MIETTE GROUP: Old Fort Point Formation: slate with siltstone, grey, green, purple; variable amounts of limestone, micritic, pink to light grey; limestone intraformational breccia; minor calcareous sandstone

**PROTEROZOIC**

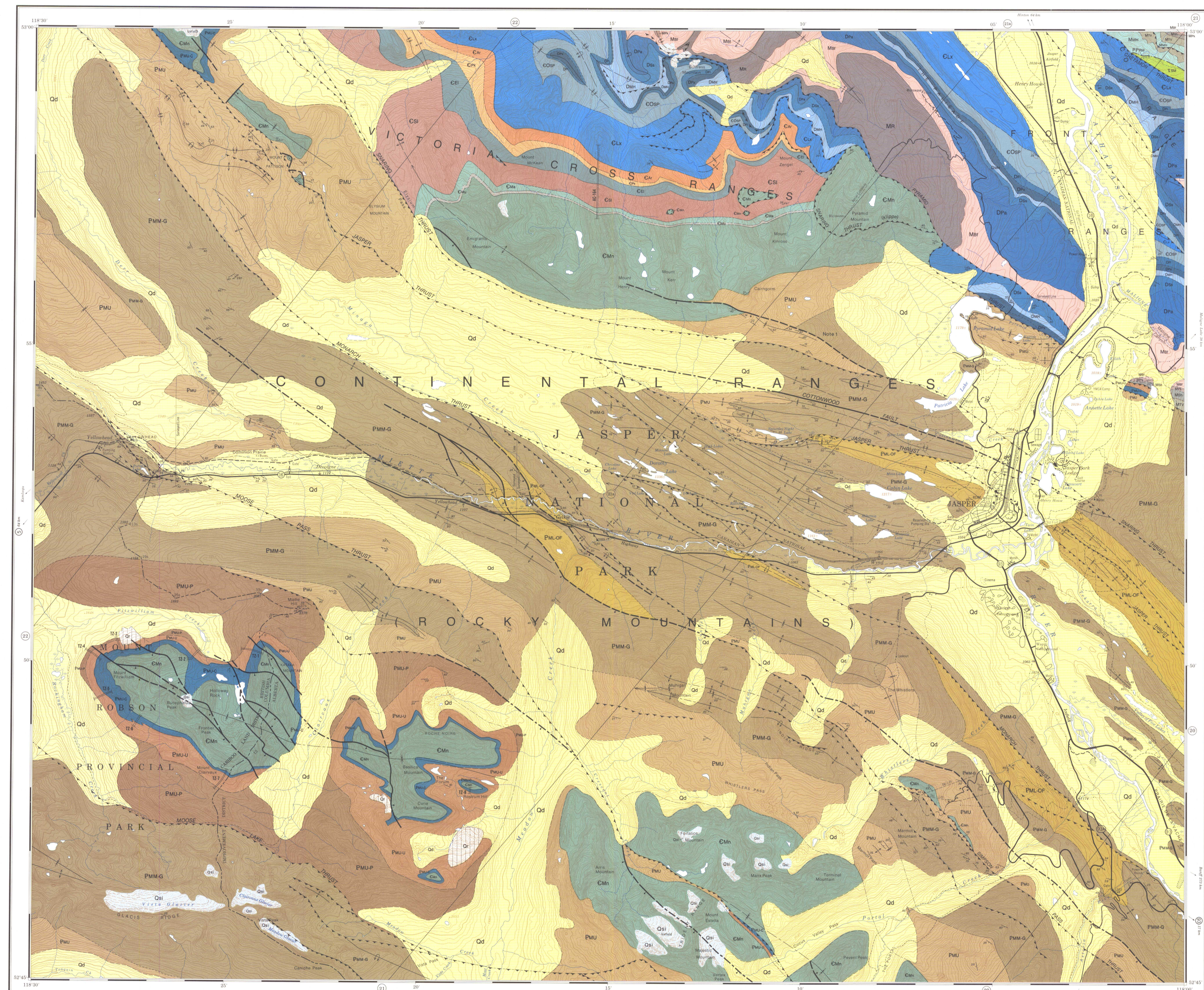
**Geological boundary (defined, approximate, assumed)**  
 Geological boundary (assumed projection under cover of younger deposits)  
 Bedding, tops known (inclined, overturned)  
 Bedding, tops unknown (inclined)  
 Cleavage, (inclined, vertical)  
 Thrust fault (teeth indicate upthrust side; defined, approximate, assumed)  
 Thrust fault (assumed projection under cover of younger deposits)  
 Fault, genetic type unknown (solid circle indicates downthrow side; defined, approximate)  
 Fault (assumed projection under cover of younger deposits)  
 Anticline axis (fold upright, overturned, arrow indicates plunge; defined, approximate)  
 Synclinal axis (fold upright, overturned, arrow indicates plunge; defined, approximate)  
 Axial and synclinal axes (assumed projection under cover of younger deposits)  
 Stratigraphic section, locus of measurement (number refers to internal cataloguing system), AC-studied by J.D. Allen; T2 studied by M. Teitz  
 Line of section

**NOTES**

- The style of folding in the middle Miette Group is shown diagrammatically. Because of their small size, some folds are not shown on the geological map. For a better appreciation of the structure within the Miette Group, see the report by Charlesworth et al., (Alberta Research Council, Bulletin 23, 1967)
- The Miette Group is presumed to thicken westward
- Older Miette Group rocks presumably underlie the Old Fort Point Formation, and its lateral equivalents, above and west of the Simpson Pass Thrust

**SCHEMATIC STRATIGRAPHIC RELATIONSHIPS**

Geological cartography by M.D. Wallace, Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada  
 Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada  
 Base map at the same scale published by the Surveys and Mapping Branch in 1980  
 Copies of the topographical edition of this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0G9  
 Approximate magnetic declination 1984, 22°26.6' East, decreasing 10.7' annually  
 Elevations in metres above sea level  
 Recommended citation:  
 Mountain, E.W. and Price, R.A. 1985. Geology of Jasper, Alberta. Geological Survey of Canada, Map 1611A, scale 1:50 000



Map 1611A  
**GEOLOGY**  
**JASPER**  
 WEST OF SIXTH MERIDIAN  
 ALBERTA  
 Scale 1:50 000

Transverse Mercator Projection  
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