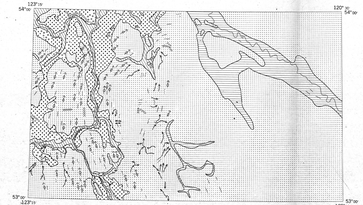


SURFICIAL GEOLOGY

Kilometres 0 20 40 60

Scale 1:1 000 000

BRITISH COLUMBIA SURFICIAL DEPOSITS

PROGLACIAL DEPOSITS

LACUSTRINE DEPOSITS: Varved silt, clay, and sand, locally drumlinized and fluted through minor ice re-advance, fringed by beach deposits. Deposits up to 120 m thick along Nechako, >200 m thick along Blackwater.

Meltwater or outwash channel deposits bounded by cutbanks or terraces

UNDIVIDED GLACIOLACUSTRINE AND GLACIOFLUVIAL DEPOSITS: Sand, silt and clay with local accumulations up to 70 m thick along valley bottoms

GLACIAL DEPOSITS

Undivided glacial till and ground moraine. Areas of low relief include abundant drumlins, rock drumlins, fluting, and esker complexes. Bedrock exposures predominate above 1700 m elevation

Outwash channel cutbank or terrace

Small meltwater or abandoned stream channel indicating direction of flow

Fluting or glacial striation

Drumlin, direction of flow known

Eskers and esker complexes

Kettled and pitted terrain

Note: Glacial deposits and features within NTS 93H are unmapped

Sources of information: -

Geological Survey of Canada

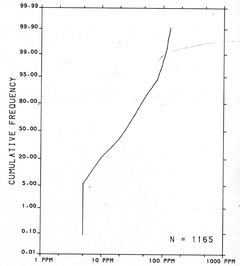
1938: Geology of Willow River Sheet
Map 335 A, West Half
Map 336 A, East Half

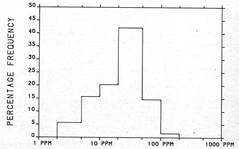
Tipper, H.W.

1971: Glacial Geomorphology and Pleistocene History of Central British Columbia;
Geological Survey of Canada,
Bulletin 196. 89p. (esp. Map 1288A, scale 1:250 000)

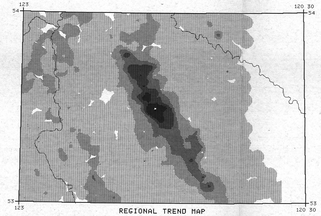
Tipper, H.W., Campbell, R.B., Taylor, G.C. and Stott, D.F.

1979: Parsnip River,
British Columbia;
Geological Survey of Canada,
Map 1424A, scale 1:1 000 000





HISTOGRAM



REGIONAL TREND MAP

0 20 40 60

KILOMETERS- SCALE 1:10000000

Provincial Open File
BC RGS-12-1984 (93G E/2, 93H W/2)

LEGEND

(This legend to be used west of 122°00' only)

Note: This legend is common for Regional Geochemical 72-1984 Open File 1107

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

12 (TILL 44) TILL, GRAVEL, SAND, SILT, ALLUVIUM

TERTIARY

MIOCENE AND PLIOCENE

16 (BSLT 42) OLIVINE BASALT FLOWS, BRECCIA, AND TUFF

15 (SNDS 42) SANDSTONE, SHALE, CONGLOMERATE, DIATOMITE, LIGNITE

OLIGOCENE AND MIOCENE

14 (AND 42) *ENDAKO GROUP*: ANDESITE, BASALT, DACITE

PALEOCENE, EOCENE, OLIGOCENE

13 (COLM 42) CONGLOMERATE, SANDSTONE, SHALE, TUFF, BRECCIA

MESOZOIC - CENOZOIC

UPPER CRETACEOUS AND LOWER TERTIARY

12 (RYLT 41) *OOTSA LAKE GROUP*: RHYOLITE, DACITE, TRACHYTE, SANDSTONE, SHALE, CONGLOMERATE

CRETACEOUS

11 (ANDS 38) ANDESITE, TUFF, BRECCIA, ARGILLITE, ARKOSE, CONGLOMERATE

LOWER CRETACEOUS

10 (CGLM 38) *SKEENA GROUP*: CONGLOMERATE, GREYWACKE, SHALE, COAL, VOLCANIC BRECCIA

JURASSIC

MIDDLE JURASSIC

9 (ANDS 34) *HAZELTON GROUP* (PART) UNDIVIDED: BASALT, ANDESITE, TUFF, BRECCIA, GREYWACKE, MUDSTONE, CONGLOMERATE

LOWER AND MIDDLE JURASSIC

8 (SHLE 36) SHALE, GREYWACKE, CONGLOMERATE

UPPER TRIASSIC AND LOWER JURASSIC

7 (ANDS 32) *TAKLA GROUP*: ANDESITE, BASALT, TUFF, BRECCIA, CONGLOMERATE, GREYWACKE, SHALE, LIMESTONE

TRIASSIC

UPPER TRIASSIC

4 (LIMN 32) LIMESTONE

5 (PLLT 33) BLACK PHYLLITE, SILTSTONE, LIMESTONE, QUARTZITE

PALEOZOIC

PENNSYLVANIAN AND PERMIAN

4 (QUART 23) *CACHE CREEK GROUP*: RIBBON CHERT, BLACK ARGILLITE, LIMESTONE, GREENSTONE

MISSISSIPPIAN AND(?) YOUNGER

3 (BSLT 23) *SLIDE MOUNTAIN GROUP*: BASALT, BRECCIA, TUFF, CHERT, ARGILLITE, SANDSTONE, LIMESTONE, CONGLOMERATE

CAMBRIAN

LOWER CAMBRIAN

2 (LIMN 12) *MURAL FORMATION*: LIMESTONE (INCLUDES *WANTO FORMATION* SILTSTONE, SANDSTONE)

PROTEROZOIC

HADRYNIAN

1 (SNDS 04) *KAZA GROUP*: SANDSTONE, CONGLOMERATE, GRIT, PHYLLITE, SCHIST, AMPHIBOLITE, MARBLE, GNEISS

PLUTONIC ROCKS

TERTIARY

22 (GRDR 42) GRANODIORITE, QUARTZ DIORITE, QUARTZ MONZONITE

LOWER CRETACEOUS

GSTMZ 36) *RAVER* INTRUSIONS: QUARTZ MONZONITE, SYENITE, MONZONITE, GRANODIORITE, DIORITE

UPPER TRIASSIC

3 (GRDR 32) *TAKOMKANE BATHOLITH* AND BODIES OF SIMILAR AGE AND LITHOLOGY: GRANODIORITE, QUARTZ DIORITE, QUARTZ MONZONITE

PERMIAN AND/OR TRIASSIC

6 (SRPN 21) *TREMBLEUR* INTRUSIONS AND SIMILAR BODIES: PERIDOTITE, DUNITE, PYROXENITE, SERPENTINITE

SYMBOLS

GEOLOGICAL BOUNDARY: MAPPED, ASSUMED

FAULT: MAPPED, ASSUMED

THRUST FAULT (TEETH ON HANGINGWALL): MAPPED, ASSUMED

ANTICLINAL AXIS

SYNCLINAL AXIS

STREAM SAMPLE SITE

GEOLOGY AND MINERAL DEPOSITS

Generalized geology after Geological Survey of Canada Map 49-1963, Prince George, British Columbia, 1 inch to 4 miles, H. W. Tipper, 1958 and Geological Survey of Canada Map 1424A, Parsnip River, British Columbia, 1:1 000 000, compilation by H. W. Tipper, R. B. Campbell, G. C. Taylor, and D. F. Stott, 1979, used to determine dominant catchment basin rock type for grouping of geochemical data.

The four-letter mnemonic name indicates rock type and the two-digit number indicates age.

For location of the following specific information for this area refer to British Columbia Ministry of Energy, Mines and Petroleum Resources: Mineral Deposits, refer to Mineral Inventory Map (MIV) 93G (PRINCE GEORGE); Assessment Reports, refer to Assessment Report Index Map (ARI) 93G (PRINCE GEORGE); Bedrock Geological Mapping Reports, refer to Index to Bedrock Geological Mapping, 1982; Mineral and Placer Claim Maps, contact Ministry of Energy, Mines and Petroleum Resources, Titles Branch, for current editions.

Geological Survey of Canada

Resource Geophysics and Geochemistry Division

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

CONTRACTORS

Sample collection by McElhanney Surveying and Engineering Ltd., Vancouver

Sample preparation by Golder Associates, Ottawa

Sediment chemical analysis by Barringer Magenta Ltd., Rexdale, Ontario

Water chemical analyses by Barringer Magenta Laboratories (Alberta) Ltd., Calgary

Copies of map material and listings of field observations and analytical data, from which the material was prepared, may be available at users expense by application to:

K.G. Campbell Corporation
880 Wellington St.
Bay 238
Ottawa, Ontario
K1R 6K7

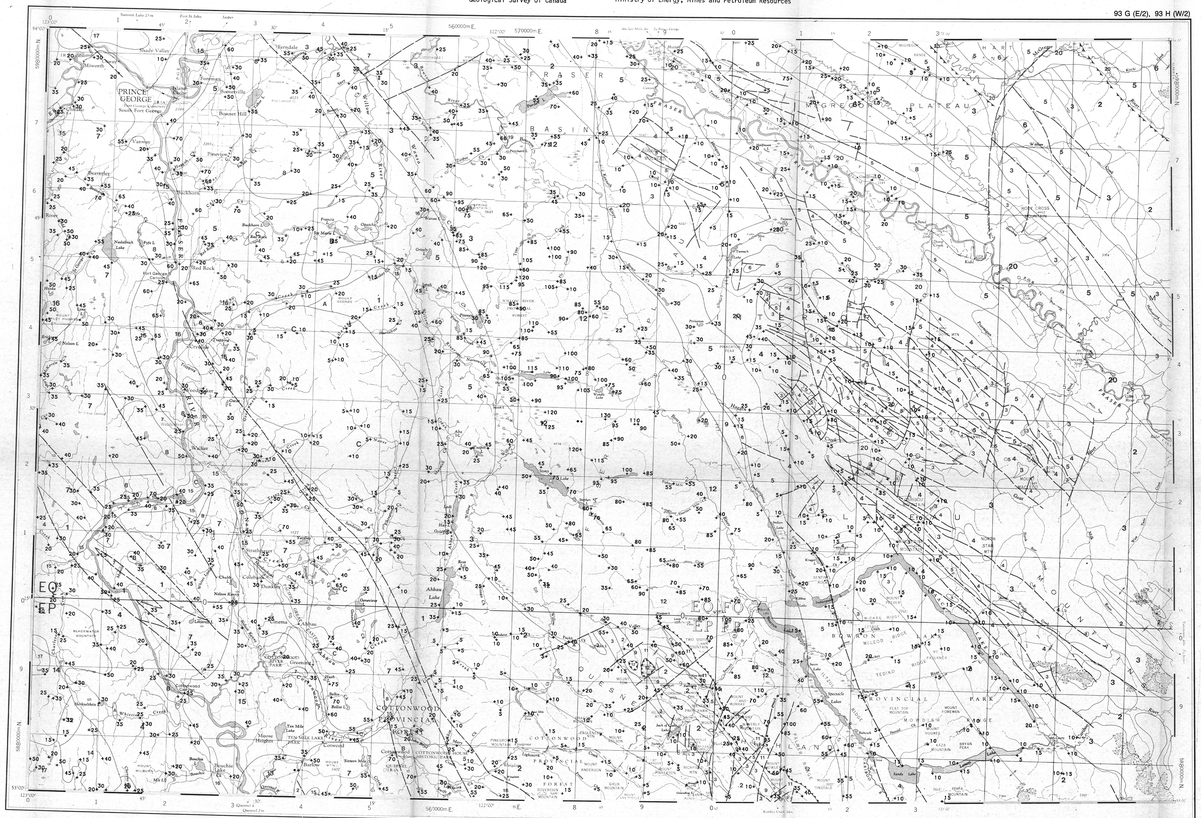
The data are also available in digital form. For further information please contact:

The Director
Computer Science Centre
Department of Energy, Mines and Resources
Ottawa, Ontario
K1A 0E4

Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

93 G (E/2), 93 H (W/2)



93 G (E/2), 93 H (W/2)

INDEX MAP

Elevation in feet above mean sea level

Mean magnetic declination 1985, 27°34' West, decreasing 9.3' annually. Readings vary from 26°41' in the SW corner to 28°27' in the NE corner of the map area

VANADIUM (ppm)

GSC OPEN FILE 1107

REGIONAL GEOCHEMICAL RECONNAISSANCE MAP 72-1984

JOINT CANADA/BRITISH COLUMBIA PROGRAM

STREAM SEDIMENT AND WATER GEOCHEMICAL SURVEY

EAST-CENTRAL BRITISH COLUMBIA

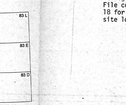
Scale 1:250 000

Kilometres 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection

© Crown Copyrights reserved

Base map assembled by the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1969, 1970



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

VANADIUM (ppm)

GSC OPEN FILE 1107

EAST-CENTRAL BRITISH COLUMBIA

LEGEND

(This legend to be used east of 122°00' only.)

Note: This legend is common for Regional Geochemical 72-1984 Open File 1107

QUATERNARY

PLEISTOCENE AND RECENT

20 (TILL 44) TILL, GRAVEL, SAND, SILT, ALLUVIUM

CRETACEOUS OR TERTIARY

UPPER CRETACEOUS OR PALEOCENE

19 (CGLM 41) *BOWRON RIVER COAL BEDS*: CONGLOMERATE, BRECCIA, SANDSTONE, SHALE, COAL

UPPER JURASSIC AND LOWER CRETACEOUS

18 (SNDS 36) *MINNABERIN FORMATION*: SANDSTONE, SILTY SHALE, SILTSTONE

JURASSIC

LOWER TO UPPER JURASSIC

17 (SHLE 34) *FERNIE GROUP*: SHALE, SILTY SHALE, SILTSTONE

TRIASSIC

UPPER TRIASSIC

16 (PLLT 33) PHYLLITE, ARGILLITE, MINOR LIMESTONE, QUARTZITE

MIDDLE AND UPPER TRIASSIC

15 (LIMN 32) *SPRAY RIVER GROUP, WHITEHORSE FORMATION*: LIMESTONE AND DOLOSTONE

LOWER AND MIDDLE TRIASSIC

14 (SLSN 32) *SULPHUR MOUNTAIN FORMATION*: SILTSTONE AND SILTY LIMESTONE

MISSISSIPPIAN AND PERMIAN

13 (LIMN 23) *PERMIAN GROUP, ISHBEL GROUP, BANFF FORMATION*: LIMESTONE, SANDSTONE, LIMY SHALE, DOLOSTONE, CHERT

MISSISSIPPIAN

LOWER MISSISSIPPIAN AND/OR YOUNGER

12 (BSLT, 21) *SLIDE MOUNTAIN GROUP, ANTLER FORMATION*: PILLOW BASALT, BRECCIA, TUFF, MINOR DIORITE AND GABBRO, CHERT, ARGILLITE, LITHIC SANDSTONE

LOWER MISSISSIPPIAN AND/OR OLDER

11 (CGLM, 21) *GUYET FORMATION, GREENBERRY FORMATION*: CONGLOMERATE, ARGILLITE, LITHIC SANDSTONE, ORNOCEAL LIMESTONE

DEVONIAN

UPPER AND MIDDLE DEVONIAN

10 (LIMN 18) *PALLISER, SOUTHESK, ALEXO, PERDRIX, MOUNT HAWK, FLUME FORMATIONS*: LIMESTONE, SHALE, SANDSTONE, SILTSTONE

LOWER DEVONIAN AND YOUNGER

9 (BSLT 18) *BLACK STUART FORMATION*: BASALT, CHERT, CHERT BRECCIA, DOLOMITE BRECCIA, UPPER UNIT CHERTY ARGILLITE, PHYLLITE, SANDY LIMESTONE

SILURIAN

LOWER SILURIAN

8 (LIMN 18) *SKOKI FORMATION* ALL OR IN PART: DOLOMITE, LIMESTONE, QUARTZITE, SHALE, GREENSTONE FLOWS AND SILLS

ORDOVICIAN

LOWER AND MIDDLE ORDOVICIAN

7 (QUMT, 16) *SKOKI, MONKMAN, CHISHIMA FORMATIONS*: DOLOMITE, LIMESTONE, SANDSTONE, SHALE, QUARTZITE

CAMBRIAN

6 (SHLE 12) *LYNX, DOME CREEK, ARCTOMYS, WATERFALL, HOTA-ADOLPHUS, TATEI-ONETANG, TITKANA FORMATIONS*: SHALE, SILTY LIMESTONE, DOLOMITE, SANDSTONE, SILTSTONE, ARGILLITE, PHYLLITE

LOWER CAMBRIAN AND HADRYNIAN

5 (QARTZ, 11) *MARYO, MURAL, MONKSMITH, YANKS PEAK FORMATIONS*: QUARTZITE, LIMESTONE, SHALE, SILTSTONE, PHYLLITE, DOLOMITE, CONGLOMERATE

HADRYNIAN

4 (SHLE 04) *YANKEE BELLE, CUNNINGHAM FORMATIONS*: SHALE, LIMESTONE, SILTSTONE, DOLOMITE, PHYLLITE

3 (PLLT 04) *MISTY, ISAAC FORMATION*: PHYLLITE, ARGILLITE, SCHIST, SANDSTONE, LIMESTONE, CONGLOMERATE

2 (FPCA, 04) *KAZA GROUP, INCONNU FORMATION, MIDDLE MISTY GROUP*: FELDSPATHIC SANDSTONE, GRANULE CONGLOMERATE, SILTSTONE, ARGILLITE, PHYLLITE, SCHIST, LIMESTONE MARBLE

1 (ARGL 04) *LOWER MISTY GROUP*: ARGILLITE, PHYLLITE, SANDSTONE, LIMESTONE

INTRUSIVE ROCKS

MISSISSIPPIAN OR YOUNGER

A (SRPN 21) SERPENTINITE

SYMBOLS

GEOLOGICAL BOUNDARY: MAPPED, ASSUMED

FAULT (DOT ON DOWNTHROWN SIDE): MAPPED, ASSUMED

THRUST FAULT (TEETH ON HANGINGWALL): MAPPED, ASSUMED

ANTICLINAL AXIS

SYNCLINAL AXIS

STREAM SAMPLE SITE

GEOLOGY AND MINERAL DEPOSITS

Generalized geology after Geological Survey of Canada, Map 1368A to accompany Paper 72-35, Geology of McBride Map Area, British Columbia, by R. G. Campbell, E. W. Mountjoy, and F. G. Young; Geological Survey of Canada Map 1424A, Parsnip River, British Columbia, 1:1 000 000, compilation by H. W. Tipper, R. B. Campbell, G. C. Taylor, and D. F. Stott, 1979; Geological Survey of Canada Map 49-1963, Prince George, accompanying British Columbia Ministry of Energy, Mines and Petroleum Resources Bulletin 47, Geology of the Cariboo River Area, by A. Sutherland Brown, 1963; and Geological Survey of Canada Open File 1105, Geological Reconnaissance, Manson River, British Columbia, by R. G. Woods, 1985; used to determine dominant catchment basin rock type for grouping of geochemical data.

The four-letter mnemonic name indicates rock type and the two-digit number indicates age.

For location of the following specific information for this area refer to British Columbia Ministry of Energy, Mines and Petroleum Resources: Mineral Deposits, refer to Mineral Inventory Map (MIV) 93G (PRINCE GEORGE); Assessment Reports, refer to Assessment Report Index Map (ARI) 93G (PRINCE GEORGE); Bedrock Geological Mapping Reports, refer to Index to Bedrock Geological Mapping, 1982; Mineral and Placer Claim Maps, contact Ministry of Energy, Mines and Petroleum Resources, Titles Branch, for current editions.

This map forms one of a series of maps released by the Geological Survey of Canada, Open File 1107. The Open File consists of maps of various geochemical variables: 18 for stream sediment, 2 for stream water and 1 sample site location

This map has been reprinted from a scanned version of the original map.
Reproduction par numérisation d'une carte sur papier.

VANADIUM (ppm)

GSC OPEN FILE 1107

EAST-CENTRAL BRITISH COLUMBIA