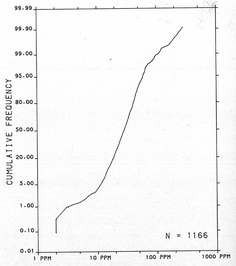
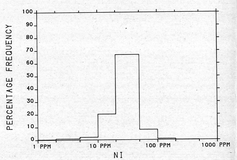
SURFICIAL GEOLOGY

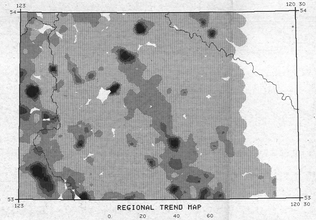
Kilometres 0 20 40 60

Scale 1:1 000 000





HISTOGRAM



REGIONAL TREND MAP

0 20 40 60

KILOMETERS- SCALE 1:1000000

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

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
17 (TLL 44) TILL; GRAVEL, SAND, SILT, ALLUVIUM

TERTIARY
MIOCENE AND PLIOCENE
16 (BSLT 42) OLIVINE BASALT FLOWS, BRECCIA, AND TUFF
15 (GNDS 42) SANDSTONE, SHALE, CONGLOMERATE, DIATOMITE, LIGNITE

OLIGOCENE AND MIOCENE
14 (ANDS 42) ENDAKO GROUP: ANDESITE, BASALT, DACITE

PALEOCENE, EOCENE, OLIGOCENE
13 (EOLW 42) CONGLOMERATE, SANDSTONE, SHALE, TUFF, BRECCIA

MESOZOIC – CENOZOIC
UPPER CRETACEOUS AND LOWER TERTIARY
12 (RTDC 42) CHILCOTIN GROUP: RHYOLITE, DACITE, TRACHYTE, SANDSTONE, SHALE, CONGLOMERATE

CRETACEOUS
11 (ANDS 36) ANDESITE, TUFF, BRECCIA, AGGLOMERATE, ARKOSE, CONGLOMERATE

LOWER CRETACEOUS
10 (KTKC 36) KASTBERG 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 34) SHALE, GREYWACKE, CONGLOMERATE

UPPER TRIASSIC AND LOWER JURASSIC
7 (ANDS 33) TAKLA GROUP: ANDESITE; BASALT, TUFF, BRECCIA, CONGLOMERATE, GREYWACKE, SHALE, LIMESTONE

TRIASSIC
UPPER TRIASSIC
6 (LMSN 33) LIMESTONE
5 (PLLT 33) BLACK PHYLLITE, SILTSTONE, LIMESTONE, QUARTZITE

PALEOZOIC
PENNSYLVANIAN AND PERMIAN
4 (LMSN 29) CACHE CREEK GROUP: RIBBON CHERT, BLACK ARGILLITE, LIMESTONE, GREENSTONE

MISSISSIPPIAN AND(?) YOUNGER
3 (BSLT 29) SLIDE MOUNTAIN GROUP: BASALT, BRECCIA, TUFF, CHERT, ARGILLITE, SANDSTONE, LIMESTONE, CONGLOMERATE

CAMBRIAN
LOWER CAMBRIAN
2 (LMSN 12) MURAL FORMATION: LIMESTONE (INCLUDES MAYO FORMATION SILTSTONE, SANDSTONE)

PROTEROZOIC
HADRYNIAN
1 (GNDS 04) KAZA GROUP: SANDSTONE, CONGLOMERATE, GRIT, PHYLLITE, SCHIST, AMPHIBOLITE, MARBLE, GNEISS

PLUTONIC ROCKS

TERTIARY
Q (GRDR 42) GRANODIORITE, QUARTZ DIORITE, QUARTZ MONZONITE

LOWER CRETACEOUS
C (GTMZ 36) McKEE INTRUSIONS: QUARTZ MONZONITE, SYENITE, MONZONITE, GRANODIORITE, DIORITE

UPPER TRIASSIC
B (GTMZ 33) TAKOMKANE BATHOLITH AND BODIES OF SIMILAR AGE AND LITHOLOGY: GRANODIORITE, QUARTZ DIORITE, QUARTZ MONZONITE

PERMIAN AND/OR TRIASSIC
A (GRPR 31) 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 DEPOTS

Generalized geology after Geological Survey of Canada, Map 49-1960, Prince George, British Columbia, 1:1 000 000, compilation by H. M. Tipper; R. B. Campbell, G. C. Taylor, and D. F. Stott, 1976, 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 (MI) 93G (PRINCE GEORGE); Assessment Reports, refer to Assessment Report Index Map (AR) 93G (PRINCE GEORGE); Mineralized Zones, refer to Minfile 93G (PRINCE GEORGE); Placer Deposits, refer to Placer Potential 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 McIlhanney 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 230
Ottawa, Ontario
K1R 6K7

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

The Director
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Ottawa, Ontario
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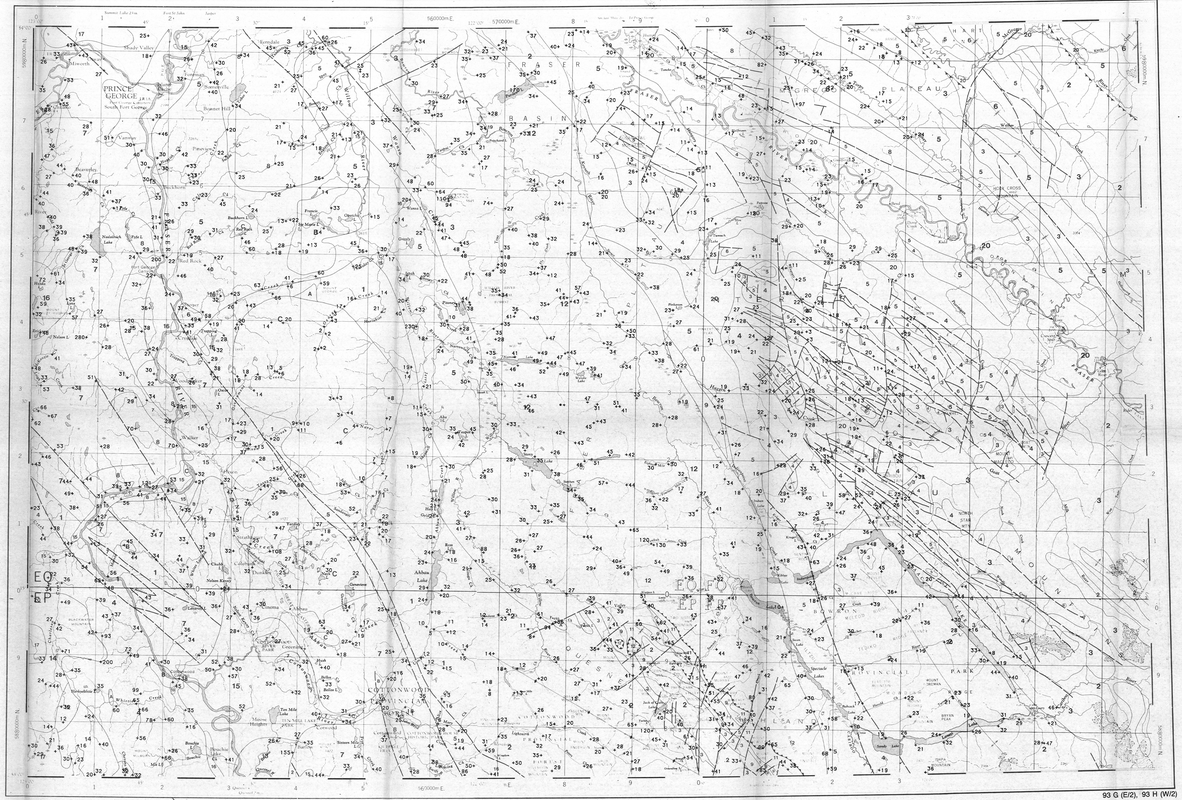
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

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 9.9' annually. Readings vary from 26°41' in the SW corner to 28°27' in the NE corner of the map area

NICKEL (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

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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 REFERENCES AND INDEX TO ADJOINING GEOLOGICAL SURVEYS OF CANADA MAPS

NICKEL (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 (TLL 44) TILL; GRAVEL, SAND, SILT, ALLUVIUM

CRETACEOUS OR TERTIARY
UPPER CRETACEOUS OR PALEOCENE
19 (COLM 41) BOWRON RIVER COAL MEMBER: CONGLOMERATE, BRECCIA, SANDSTONE, SHALE, COAL

UPPER JURASSIC AND LOWER CRETACEOUS
18 (GNDS 35) NIKANASSIN 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 (LMSN 32) SPRAY RIVER GROUP, WHITEHORSE FORMATION: LIMESTONE AND DOLOSTONE

LOWER AND MIDDLE TRIASSIC
14 (SLDN 32) SILIPOY MOUNTAIN FORMATION: SILTSTONE AND SILTY LIMESTONE

MISSISSIPPIAN AND PERMIAN
13 (LMSN 29) ISKUT GROUP, ISKUT GROUP: BAKER FORMATION: LIMESTONE, SANDSTONE, LIMY SHALE, DOLOSTONE, CHERT

MISSISSIPPIAN
LOWER MISSISSIPPIAN AND/OR YOUNGER
12 (BSLT 29) SLIDE MOUNTAIN GROUP, ANTLER FORMATION: PILLOW BASALT, BRECCIA, TUFF, MINOR DIORITE AND GABBRO, CHERT, ARGILLITE, LITHIC SANDSTONE

LOWER MISSISSIPPIAN AND/OR OLDER
11 (CGLM 29) CANOE RIVER GROUP, FLEMMING FORMATION: CONGLOMERATE, ARGILLITE, LITHIC SANDSTONE, CRINOIDAL LIMESTONE

DEVONIAN
UPPER AND MIDDLE DEVONIAN
10 (LMSN 18) PALLISER, DOUTHERE, ALEXO, PEKANIE, MOUNT HAMM, FLUME FORMATIONS: LIMESTONE, SHALE, SANDSTONE, SILTSTONE

LOWER DEVONIAN AND YOUNGER
9 (BSLT 18) SLIDE MOUNTAIN FORMATION: BASALT, CHERT, CHERT BRECCIA, DOLOMITE BRECCIA, UPPER UNIT CHERTY ARGILLITE, PHYLLITE, SANDY LIMESTONE

SILURIAN
LOWER SILURIAN
8 (SLNT 18) ROSS FORMATION ALL OR IN PART: DOLOMITE, LIMESTONE, QUARTZITE, SHALE, GREENSTONE FLOWS AND SILLS

ORDOVICIAN
LOWER AND MIDDLE ORDOVICIAN
7 (LMSN 17) ROSS, ROCKY, SKAGIT, SWANEE FORMATIONS: DOLOMITE, LIMESTONE, SANDSTONE, SHALE, QUARTZITE

CAMBRIAN
6 (SHLE 12) LYNX, DOME CREEK, KROTOMYL, WATERFOLIOL, HOTA-ADOLPHUS, TATSI-CHETANG, TITKANA FORMATIONS: SHALE, SILTY LIMESTONE, DOLOMITE, SANDSTONE, SILTSTONE, ARGILLITE, PHYLLITE

LOWER CAMBRIAN AND HADRYNIAN
5 (QRTZ 11) MURAL, MYRA, MUNAUGHTON, 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) MYETTE GROUP, ISAAC FORMATION: PHYLLITE, ARGILLITE, SCHIST, SANDSTONE, LIMESTONE, CONGLOMERATE

2 (FPQA 04) KAZA GROUP, CHOWIKWIN FORMATION: MIDDLE MYETTE GROUP, FELDSPATHIC SANDSTONE, GRANULE CONGLOMERATE, SILTSTONE, ARGILLITE, PHYLLITE, SCHIST, LIMESTONE MARBLE

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

INTRUSIVE ROCKS

MISSISSIPPIAN OR YOUNGER

A (GRPR 31) 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 DEPOTS

Generalized geology after Geological Survey of Canada, Map 1366A to accompany Paper 72-26, Geology of Cassiar, Yukon Territory and British Columbia, 1:1 000 000, compilation by H. M. Tipper; Geological Survey of Canada, Map 1424A, Parsnip River, British Columbia, 1:1 000 000, compilation by H. M. Tipper, R. B. Campbell, G. C. Taylor, and D. F. Stott, 1979; Figure 2, Geological Map of the Carbon River Area (Operation Dismal), Northeastern British Columbia, by L. C. Struik, 1981; Geological Survey of Canada Open File 781, Bedrock Geology of Barkerville-Cariboo Area, by L. C. Struik, 1981, used to determine dominant catchment basin rock type for grouping of geochemical data.

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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: 10 for stream sediment, 3 for stream water and 1 sample site location

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NICKEL (ppm)
GSC OPEN FILE 1107
EAST-CENTRAL BRITISH COLUMBIA