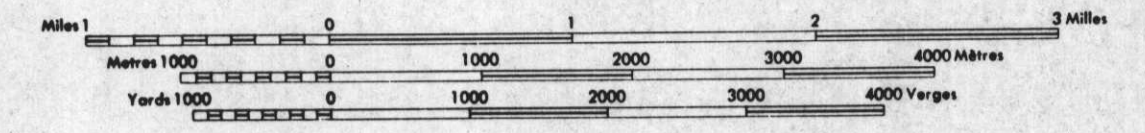


**GEOLOGY AND GEOCHEMISTRY OF
THE DISCOVERY CREEK MAP AREA**

NTS 93N14E

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K.J. MOUNTJOY AND M.E. MACLEAN

Scale 1:50,000



SHEET 1 OF 1

LEGEND
LAYERED ROCKS

- MESOZOIC TO CENOZOIC**
Cretaceous to Tertiary?
KTv maroon, orthoclase and quartz-bearing tuff with plagioclase-porphyrific volcanic fragments
USLIKA FORMATION
KTU conglomerate, sandstone, siltstone, mudstone, minor coal
- MESOZOIC**
Toarcian
IJS arkose, greywacke, sandstone, siltstone, minor conglomerate
- Upper Triassic**
TAKLA GROUP
TAKLA FELSIC Unit (Possibly Jurassic)
TrJTt heterolithic lapilli tuff, agglomerate, conglomerate, amygdaloidal augite porphyry flow, crystal ash tuffs (plagioclase-augite); clasts of plagioclase-rich volcanics, monzonite intrusives, maroon augite porphyry and cherty tuffaceous sediments
- PLUGHAT MOUNTAIN formation**
uTRPM predominantly green augite ± plagioclase-porphyrific basalt flows and fragments, maroon basalt, pillow basalt, amygdaloidal olivine porphyritic basalt, heterolithic lapilli tuff, volcanic sandstone and siltstone, limestone
- WILLY GEORGE sequence**
uTRWG augite-plagioclase lapilli tuff, crystal tuff, sedimentary breccia, arkose/wacke, argillite, siltstone

- PALEOZOIC**
Pennsylvanian to Permian
NINA CREEK GROUP
PILLOW RIDGE formation
PPPRu upper part: pillow basalt ± variolites, minor diabase-gabbro sills
PPPRl lower part: diabase-gabbro sill complex with chert rafts
- MOUNT HOWELL formation**
PPMHu upper part: green and red ribbon chert, diabase sills
PPMHI lower part: grey chert and argillite

- Mississippian to Permian**
LAY RANGE ASSEMBLAGE
MAIN sequence
MPLRc green and maroon augite ± plagioclase and augite-zircon porphyritic basalt
MPLRb crystal and lapilli tuff, volcanic sandstone, siltstone, siliceous argillite, chert and quartzite-bearing grit
- COOK CREEK panel:**
MPLRa thin-bedded siliceous siltstone and argillite, sandstone, siliceous tuff and bedded chert

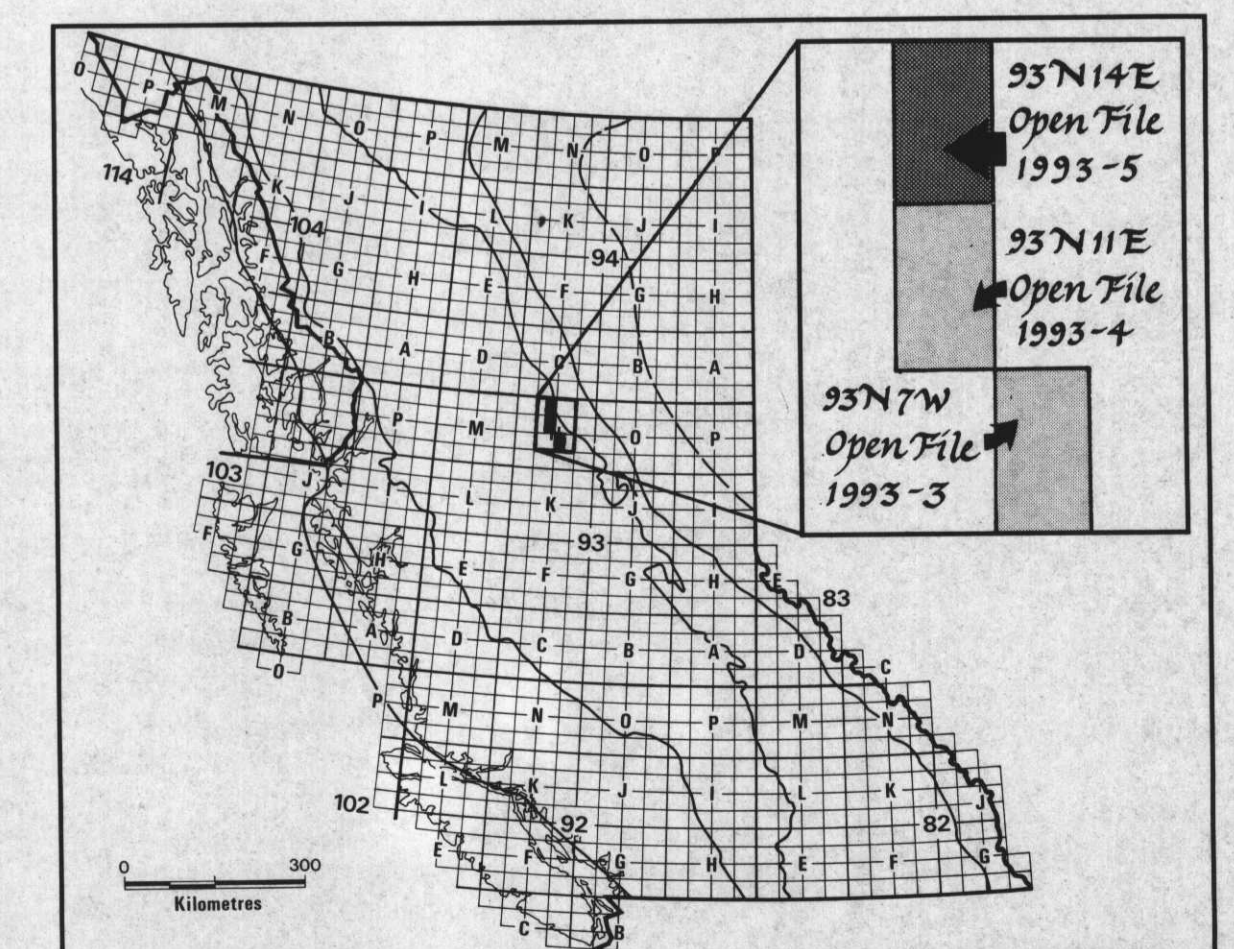
INTRUSIVE ROCKS

- MESOZOIC**
Early Jurassic
HOGEIM intrusive complex
EJH monzonite, quartz monzonite, granodiorite, and diorite
- Late Triassic - Early Jurassic**
LOUNGE LIZARD intrusive complex *
TrJLL very-textured diorite and gabbro, minor large plagioclase porphyritic diorite dykes

SYMBOLS

- Geologic contact (defined, approximate, inferred)
Lithologic contact (defined, approximate, inferred)
Transitional contact
Fault (defined, approximate, inferred)
Strike-slip fault (motion indicated)
Normal fault (ball on hanging wall)
Thrust fault (tick on hanging wall)
Outcrop
Subcrop
Bedding (tops known, unknown, overturned)
Pillow bedding and facing
Foliation
Fold axis
Fault surface with slickenside
Glacial striation
Fossil locality
Mineral occurrence - MINFILE number and name
MINFILE mineral occurrence (not field verified)
Cross section
Trench
Geochemical sample locality
Whole rock geochemical sample locality

LOCATION MAP



MINERAL OCCURRENCES

BIG (MINFILE 093N 094); HAGGIS (MINFILE 093N 185)
Traces of chalcopryrite are disseminated in mildly hornfelsed tuffs of the Willy George sequence (lower Takla Group) and in monzonite sills and dikes that intrude them. Trenches in the Willy George Creek valley expose weak mineralization (Assessment Reports #3140, 3219).

DISCOVERY CREEK COAL (MINFILE 093N 150)
A coal bed one to two metres thick is interbedded with conglomerate and sandstone in a riverbank outcrop on the east side of Discovery Creek. 10 kilometres north of the road bridge. This steeply-dipping exposure lies within a fault-bounded panel of the Discovery Creek fault system. It is tentatively correlated with the Uslika Formation, which outcrops along strike near the northern boundary of the map sheet.

ST12 (MINFILE 093N 178)
Near the eastern margin of the Hogeim intrusive complex, minor chalcopryrite and pyrite occur with epidote stringers and as disseminations in Plughat Mountain pyroxene basalts (Assessment Report #5186).

VALLEY (MINFILE 093N 006)
Traces of chalcopryrite are disseminated in mildly hornfelsed tuffs of the Willy George sequence (lower Takla Group) and in monzonite sills and dikes that intrude them (Assessment Reports #384, 431, 504, 3340, 3879, 4432).

**ANALYTICAL PROCEDURES FOR
ROCK GEOCHEMISTRY**

- GOLD (Au)** Determined by Eco-Tech Laboratories Limited, 10041 East Trans Canada Highway, Kamloops, B.C., V2C 2J3.
Fire Assay/Atomic Absorption A 30 gram aliquot sample is subjected to a fire assay technique to generate a Au/Ag bead. The bead is dissolved in nitric acid and the solution is analysed for gold by flame atomic absorption. Detection limit is 5 ppb.
- BASE METALS (Cu, Pb, Zn, Ag)** Determined by B.C. Geological Survey Branch - Analytical Sciences Laboratory, Victoria, B.C., V8V 1X4.
Atomic Absorption Samples are digested in hot, concentrated nitric-perchloric-hydrofluoric-hydrochloric acids. The acid solution is diluted to a specific volume and the elements are measured by flame atomic absorption. Detection limits: Cu - 5 ppm, Pb - 4 ppm, Zn - 0.5 ppm, Ag - 0.2 ppm.
- ELEMENTS AS, Sb** Determined by B.C. Geological Survey Branch - Analytical Sciences Laboratory, Victoria, B.C., V8V 1X4.
Atomic Absorption/Hydride Generation A 1 gram sample is digested in hot nitric-perchloric-hydrofluoric-hydrochloric acids followed by hydride vapour generation atomic absorption. Detection limits: As - 1 ppm, Sb - 1 ppm.

ROCK GEOCHEMISTRY

SAMPLE NUMBER	MINERAL SHOWING/ SAMPLE DESCRIPTION	UTM		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm
		EAST	NORTH							
92DGM20-1	iron-carbonate altered tuffs with mariposite?	360650	6207350	<5	0.3	47	9	79	53	3
92SFD30-8	hornfelsed lapilli tuff with pyrite	365200	6187050	10	<0.3	82	10	120	<1	<1
92SFD30-4-1	skarn altered volcanics with 5% pyrite	363875	6187175	<5	<0.3	172	8	110	2	<1
92JN21-7	carb altered fault gouge with mariposite? and sulphides	367600	6188150	<5	0.4	43	23	145	18	1
92KB24-4	15cm breccia vein with pyrite	359750	6189450	<5	0.4	117	9	105	1	1

Abbreviations:
carb = carbonate

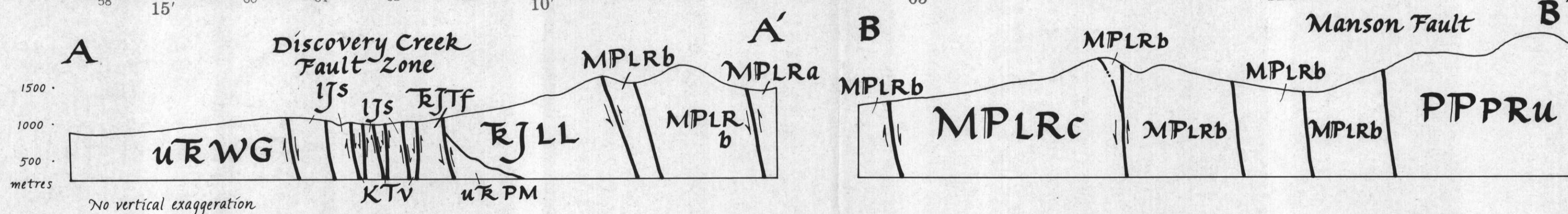
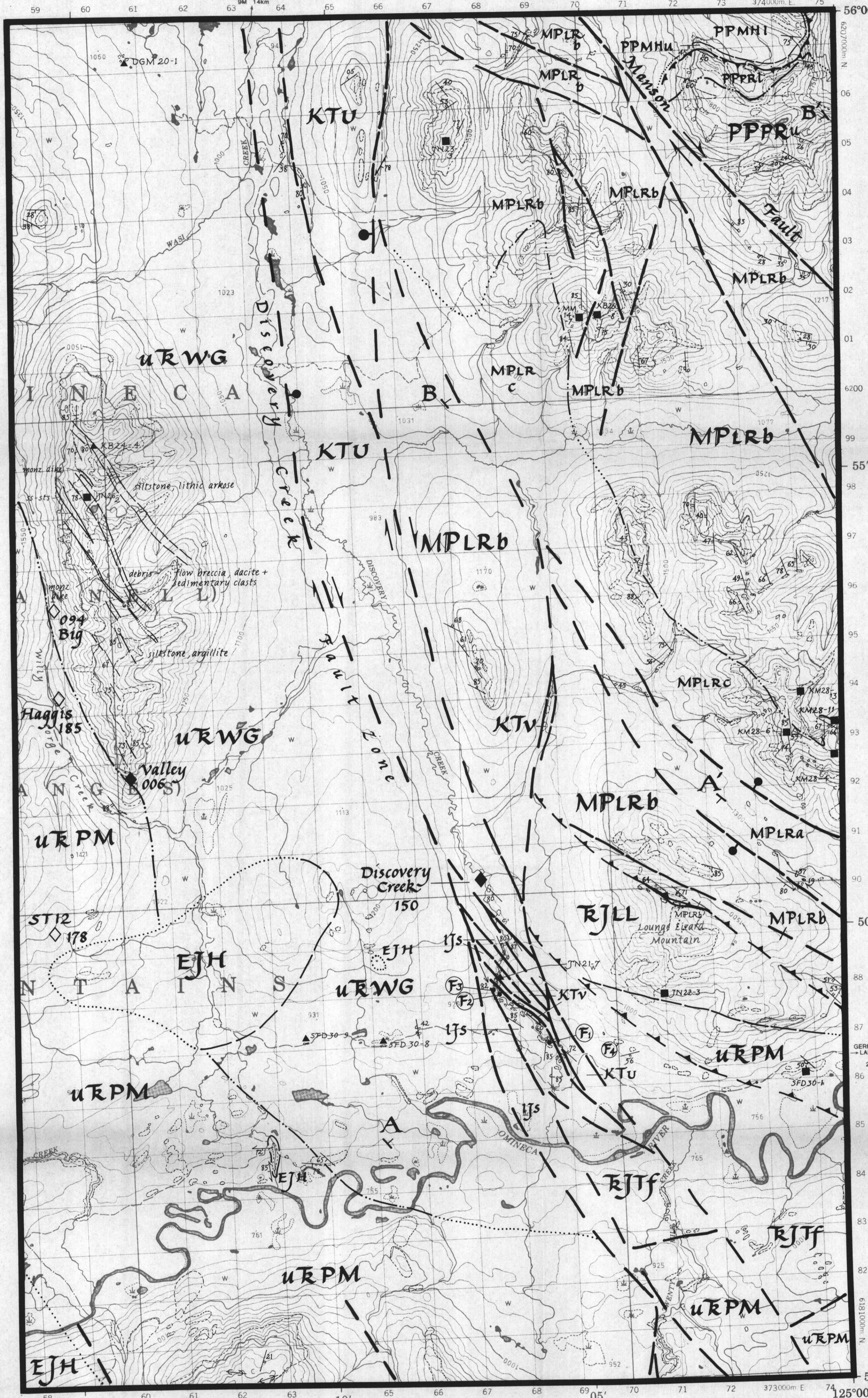
FOSSIL IDENTIFICATION

REPORT J1-1992-GKJ

- Report on Jurassic fossils from the Manson River map area (93N14) and submitted by J. Nelson (BCGS) in September 1992, for identification.
- F₁**
Field No.: 92-JN-24-1 G.S.C. Loc. No.: C-189742
Locality: Discovery Creek, Takla Group. UTM 368600E 618700N.
Identifications: ammonites
Pleydellia n.sp.
Lytoceras sp.
Phymatoceratidae n.gen. et n.sp.
ammonite aptychi
Age & Comments: bivalves
late Late Toarcian
- F₂**
Field No.: 92-JN-21-4 G.S.C. Loc. No.: C-189663
Locality: Discovery Creek, approximately 2.25 km from road crossing. UTM 367600E 6187975N. Takla Group.
Identifications: pelecypods
rhynchonellid brachiopods
belemnite
Age & Comments: The presence of a belemnite with an internal radiating structure suggests an age younger than Middle Toarcian.
- F₃**
Field No.: 92-JN-21-5 G.S.C. Loc. No.: C-189664
Locality: Discovery Creek, approximately 2.25 km from road crossing. UTM 367525E 6188050N. Takla Group.
Identifications: ammonites
Dumortieria n.sp.
Phymatoceratidae n.gen. et n.sp.
Age & Comments: late Late Toarcian
- F₄**
Field No.: 92-JN-22-1 G.S.C. Loc. No.: C-189665
Locality: 750 m northeast of Ron Repko's house. UTM 370000E 6186825N. Takla Group.
Identifications: crinoid columns
not diagnostic
Age & Comments: not diagnostic
- Jakobs, G.K. (1992) Report on Macrofossils submitted from the B.C. Geological Survey Branch, Nation Lakes Project, Geological Survey of Canada, Unpublished Report J1-1992-GKJ.

CANADA

EDITION 1 93 N/14



SCHMATIC CROSS-SECTIONS

ADDITIONAL CONTRIBUTIONS TO MAP

Additional mapping was conducted by Filippo Ferri, Chris Rees, Steve Dudka, and Dan Meldrum of the B.C. Geological Survey Branch.