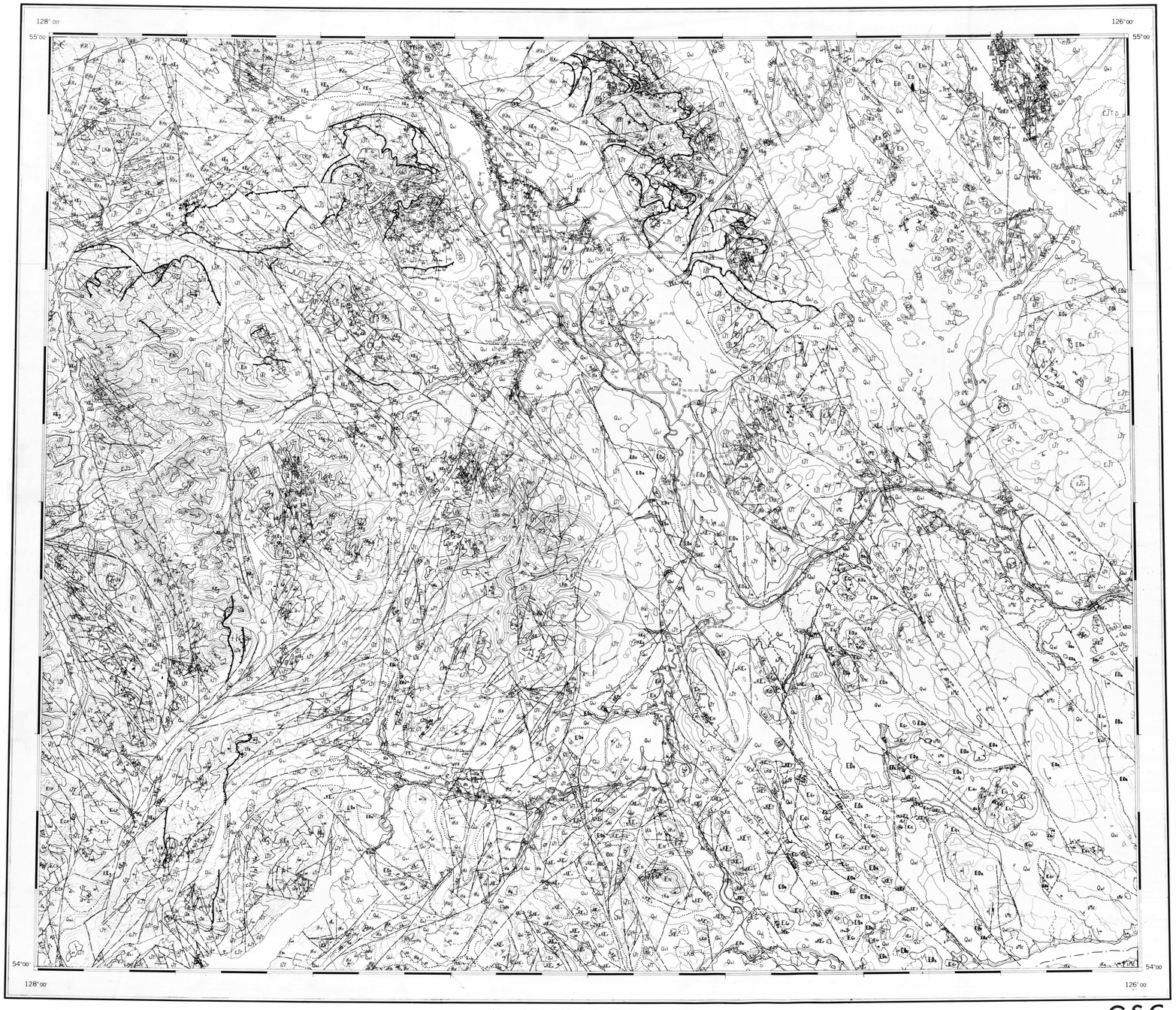

SMITHERS MAP LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

Qal alluvium, till, gravel

TERTIARY

UPPER TERTIARY

JP POPLAR BUTTE VOLCANICS: olivine basalt

ENDAKO GROUP

OLIGOCENE(?) and LOWER MIOCENE

lMc CHINA ROSE BRECCIAS: coarsely bedded glassy basaltic breccia, rare vesicular basalt, waterlain sediments interbedded near base

EOCENE AND(?) OLIGOCENE

EOb BUCK CREEK VOLCANICS: massive, vesicular, or amygdaloidal aphanitic andesite, dacite flows and breccias; minor basalt and sediments

CRETACEOUS AND TERTIARY

OOTSA LAKE GROUP

EOCENE

E_{Ga} E_{Nr} E_{Gv} GOOSLY LAKE VOLCANICS: trachytic flows and sills; E_{Nr} Newman volcanics: dacitic to rhyolitic breccias and flows

MAESTRICHTIAN TO EOCENE

uKEv acidic volcanics undivided; rhyolite and dacite flows, tuffs, and breccias; minor andesite; related felsite and porphyry intrusions

MAESTRICHTIAN TO(?) EOCENE

uKET TIPTOPHILL VOLCANICS: biotite-hornblende andesite and andesitic dacite flows and fragmental rocks

MESOZOIC

SUSTUT GROUP(?)

PALEOCENE AND EOCENE

PEs shale, acid tuff; minor greywacke, coal, conglomerate

MAESTRICHTIAN AND/OR OLDER

uKs greywacke, conglomerate, shale

INTRUSIVE ROCKS

CENOZOIC

TERTIARY

EOCENE

E_G GOOSLY LAKE INTRUSIONS: syenomonzonite and porphyritic gabbro

E_B BABINE INTRUSIONS: biotite-feldspar porphyritic granodiorite or quartz diorite

E_N NANIA INTRUSIONS: quartz monzonite, felsite, in part porphyritic

EOCENE AND OLDER

E_{CP} COAST PLUTONIC COMPLEX: quartz-diorite

MESOZOIC

LATE CRETACEOUS

LKB BULKLEY INTRUSIONS: porphyritic granodiorite and quartz monzonite

LATE CRETACEOUS AND EOCENE

KE_Z undivided: quartz diorite, quartz monzonite and granodiorite, in part porphyritic, many small felsite plutons

JURASSIC

EARLY JURASSIC

EJT TOPLEY INTRUSIONS (undivided): quartz monzonite, quartz diorite, granodiorite, monzonite

EJT_r TOPLEY INTRUSIONS (rhyolite phase): fine-grained pink to cream-coloured rhyolite or felsite

SYMBOLS

Geological boundary (approximate)

Drift boundary

Bedding (horizontal, inclined, vertical, overturned)

Faults and fault lineaments (approximate)

Thrust fault

Anticline

Syncline

MESOZOIC

CRETACEOUS

SKEENA GROUP

ALBIAN AND/OR YOUNGER

lKB lKv lKB: BIAN BORU FORMATION: vari-coloured porphyritic tuff, breccia, and flows; lKv: mainly coarse breccias of andesitic to dacitic composition

MIDDLE ALBIAN (mainly or entirely)

lKR lKv lKR: RED ROSE FORMATION: black to dark grey shale, chert pebble conglomerate; minor micaceous greywacke. lKs: micaceous greywacke, black to dark grey shale; minor conglomerate and coal

HAUTERIVIAN(?) TO ALBIAN(?)

lKRv Rocky Ridge volcanics: dark green to rusty brown augite porphyry flows and breccias, rusty red tuff, and breccia, hornblende andesite, aphanitic basic flows

HAUTERIVIAN TO(?) ALBIAN

lKKs Kitsum Creek sediments: coarse to fine polymictic conglomerate, greywacke, dark grey shale, coal; minor rusty red tuff related to Rocky Ridge volcanics

JURASSIC

BOWSER LAKE GROUP

UPPER OXFORDIAN TO (?) KIMMERIDGIAN

uJv Natalzul volcanics: grey to green basaltic to andesitic tuff, breccia and flows

UPPER OXFORDIAN

uJs Trout Creek Assemblage: greywacke, conglomerate, siltstone, coquinoid limey greywacke or siltstone

UPPER BAJOCIAN TO LOWER OXFORDIAN

muJA ASHMAN FORMATION: dark grey to black shale, quartzose sandstone, greywacke, and chert pebble conglomerate

HAZELTON GROUP

LOWER BAJOCIAN TO LOWER CALLOVIAN

mJs SMITHERS FORMATION: grey-brown greenish-grey to drab grey greywacke, lithic sandstone, siltstone, shale, tuff breccia, grit, glauconitic sandstone; minor conglomerate

MESOZOIC

LOWER PLIENSBACHIAN TO MIDDLE TOARCIAN(?)

lJN NILKITKWA FORMATION: dark grey shale, andesitic to rhyolitic tuff; minor greywacke

MIDDLE TOARCIAN(?)

lJR NILKITKWA FORMATION

RED TUFF MEMBER: red to brick red, fine-grained, tuff and fine breccia.

SINEMURIAN AND(?) LOWER PLIENSBACHIAN

lJT TELKWA FORMATION: variegated red, maroon, grey green breccia, tuff, and flows of basaltic to rhyolitic composition

HETTANGIAN AND/OR SINEMURIAN

lJSs Sterrett Island sediments: fossiliferous grey to dark grey banded shale

TRIASSIC

TAKLA GROUP

KARNIAN AND/OR NORIAN

uRT dark green augite porphyry flows, breccia and tuff, dark grey shale; minor conglomerate

PALEOZOIC

PERMIAN

P_l limestone

PERMIAN AND/OR OLDER

P_s shale, quartzite, limestone; related metamorphic rocks

ABSTRACT

The Smithers map-area is underlain mainly by the Lower and Middle Jurassic essentially volcanic Hazelton Group, by the Middle and Upper Jurassic mainly sedimentary Bowser Lake Group, by the volcanic and sedimentary Lower Cretaceous Skeena Group, and by the Tertiary volcanic Endako and Ootsa Lake Groups. The Early Jurassic Topley Intrusions cut the lower part of the Hazelton Group and a variety of intermediate to acidic plutons of Late Cretaceous to Eocene age intrude most older units throughout the area. Structurally the area is dominated by a multitude of steep normal faults. Few contacts between map-units are unfaulted and these are mainly intrusive or contacts between younger map-units. Folding is common only in the few sedimentary units and is spatially and genetically related to the Eocene thrust faults.

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