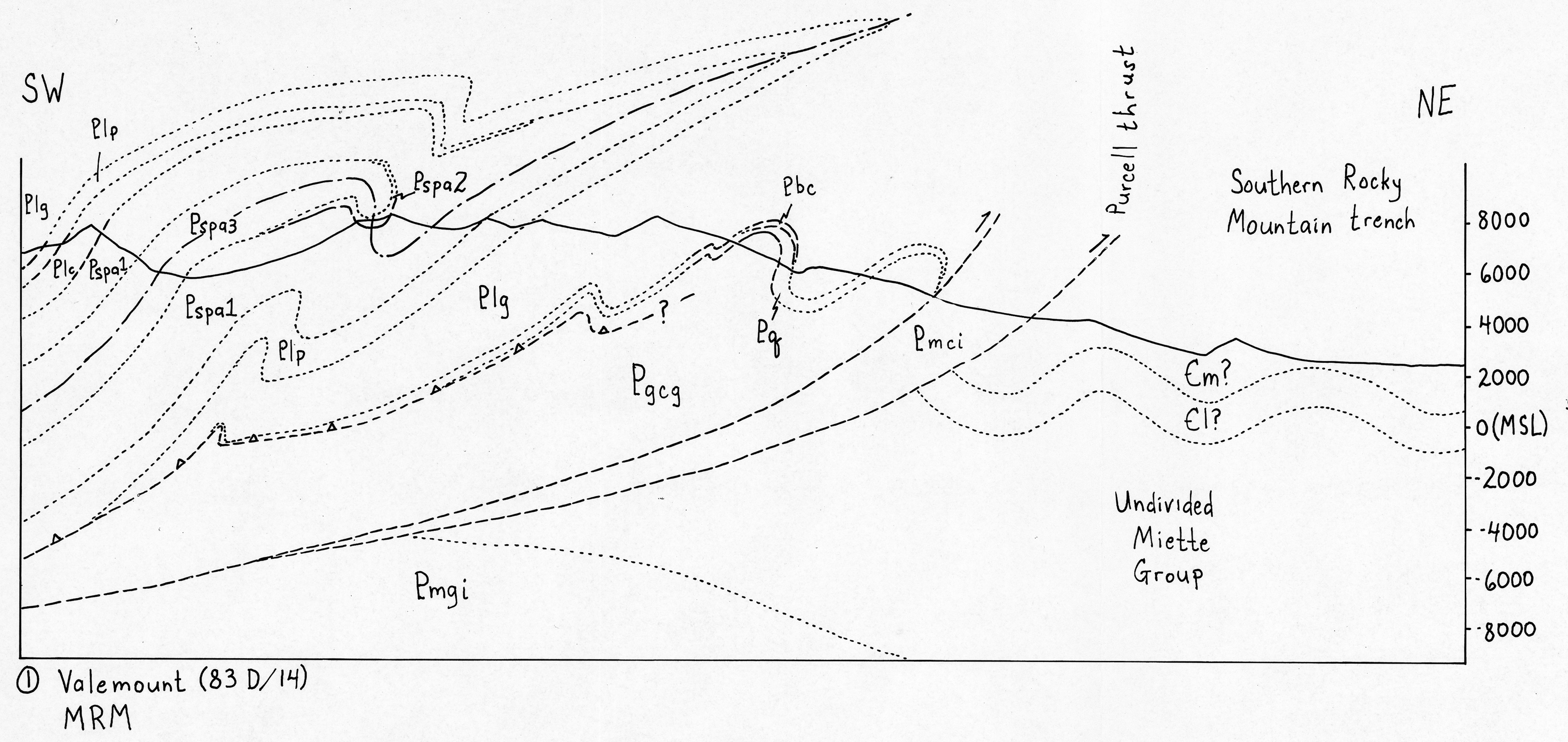
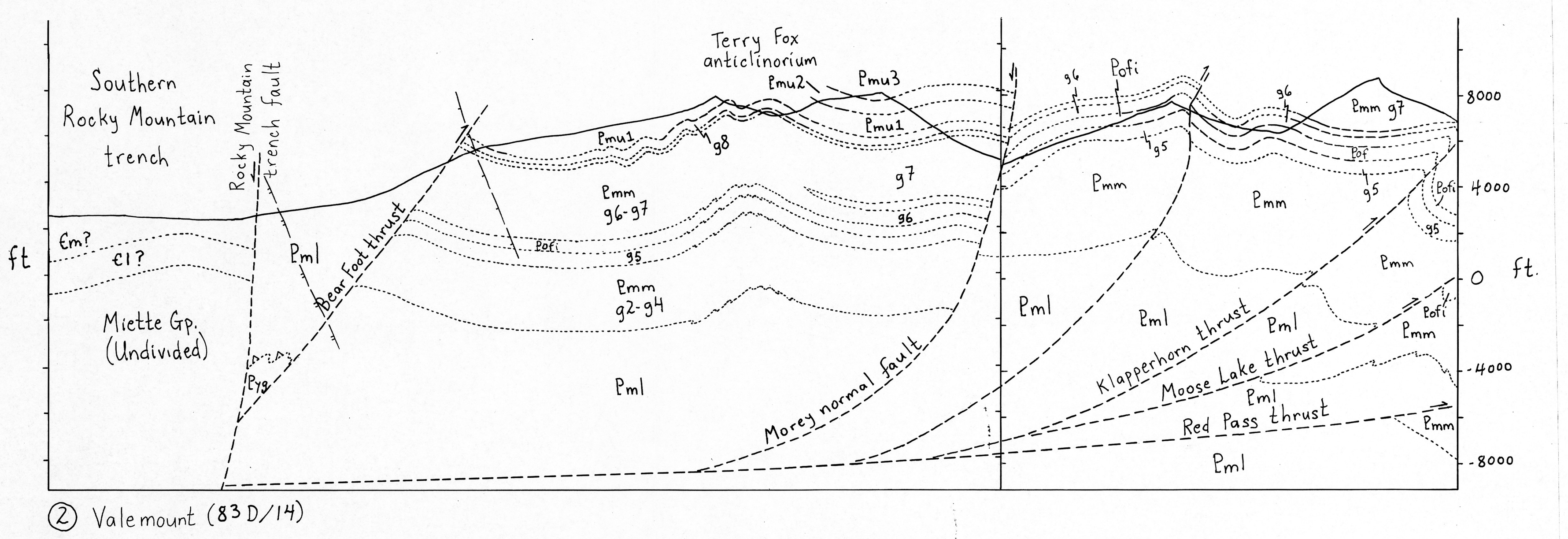
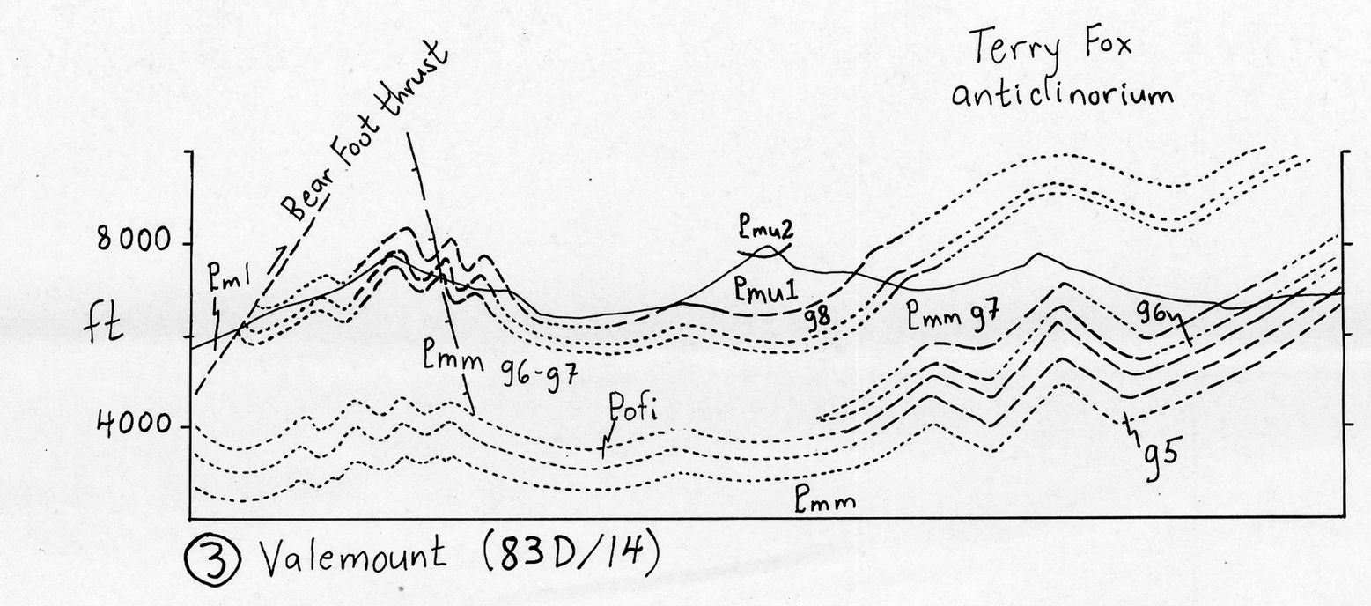
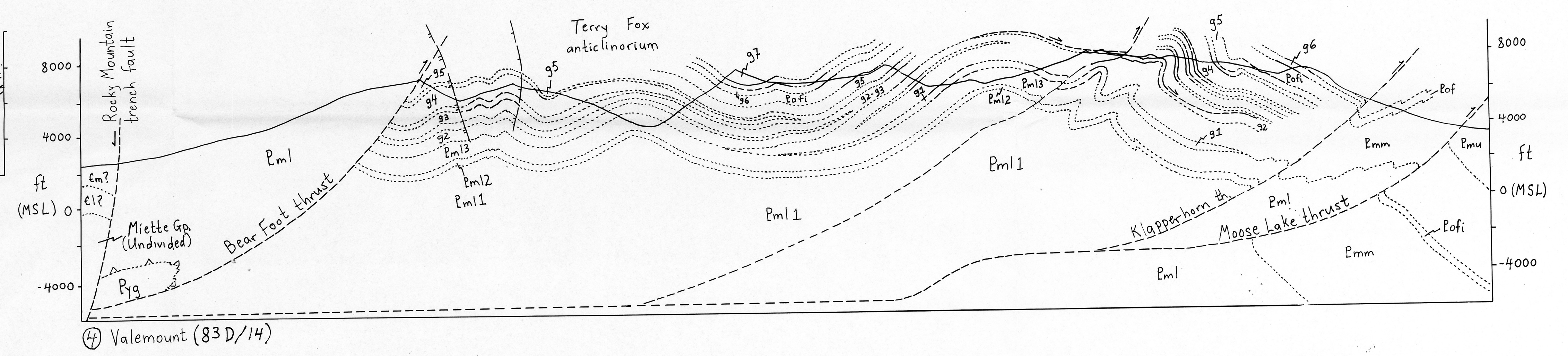








ROCKY MOUNTAINS

QUATERNARY

Qa — Quaternary alluvium

CAMBRIAN

MIDDLE CAMBRIAN?

€m? — Thin bedded silty grey limestone; calcareous phyllite; age unknown

LOWER CAMBRIAN?

€l? — Gog Group? only in cross sections

PROTEROZOIC

UPPER PROTEROZOIC

MIETTE GROUP (Pml1 - Pmu3)

Upper Miette Group

Pmu3 — Phyllite; quartz sandstone, plane and ripple cross-laminated

Pmu2 — Thin bedded black limestone, silty limestone; minor phyllite

Pmu1 — Dark brown to black calcareous phyllite; sandstone; minor calcareous pebble conglomerate debris flow

Pmu — Upper Miette Group; Undivided

Middle Miette Group

Pmm g6-g8 — Massive conglomeratic sandstone (grit); sandstone; minor grey green to grey pelite; intervening grey-green and lesser black pelite map units shaded lighter

Pofc — OLD FORT POINT FORMATION CARBONATE: reddish brown dolomitic and calcareous siltstone interbedded with white limestone; overlain by dark grey to black carbonaceous pelite

Pofp — OLD FORT POINT FORMATION PELITE: bright green to olive green pelite with interbedded siltstone and sandstone

Pofi — OLD FORT POINT FORMATION; Undivided

Pmm g1-g5 — Massive conglomeratic sandstone (grit); sandstone; minor grey green to grey pelite; intervening grey-green and lesser black pelite map units shaded lighter

Pmm — Middle Miette Group; Undivided

Lower Miette Group

Pml3 — Dark grey to black silty phyllite, phyllitic schist; minor quartzite, granule conglomerate

Pml2 — Massive quartzite; feldspathic granule to pebble conglomerate; minor phyllite, phyllitic schist

Pml1 — Dark grey to black silty phyllite; phyllitic schist; schist; minor thin quartzite units

Pml — Lower Miette Group; Undivided

LOWER PROTEROZOIC

Pyg — YELLOWJACKET GNEISS: granodioritic, biotite-rich augen gneiss; tectonic slices of lower Miette schist

CARIBOO MOUNTAINS

QUATERNARY

Qa — Quaternary alluvium

CAMBRIAN

MIDDLE CAMBRIAN?

€m? — Thin bedded silty grey limestone; calcareous phyllite; age unknown

LOWER CAMBRIAN?

€l? — Gog Group? only in cross sections

PROTEROZOIC

UPPER PROTEROZOIC

MICA CREEK SUCCESSION (Pbc - Pspa3)

Pspa3 — SEMIPELITE AMPHIBOLITE UNIT: Rusty psammite, pelitic schist, grit, and minor amphibolite

Pspa2 — SEMIPELITE AMPHIBOLITE UNIT: Matrix-supported pebble to boulder conglomerate with clasts of quartzite, marble, calcsilicate, and granitoid rocks; minor calcareous psammite, marble, and micaceous quartzite

Pspa1 — SEMIPELITE AMPHIBOLITE UNIT: Quartz-biotite-plagioclase psammite, pelitic schist, amphibolitic schist, garnet amphibolite, minor migmatite

Pspa — SEMIPELITE AMPHIBOLITE UNIT; Undivided

Plc — LOWER CARBONATE UNIT: calcareous psammite, calcsilicate, pelite; minor semipelite and amphibolite

Plp — LOWER PELITE UNIT: pelitic schist, semipelite; minor local amphibolite and marble

Plg — LOWER GRIT UNIT: rusty weathering staurolite-kyanite schist, conglomerate, minor psammite, grit and amphibolite

Pbc — Pebble to boulder conglomerate with quartz-rich matrix; clasts of quartzite, amphibolite, calcsilicate, and marble. Unit unconformably overlies quartzite.

Pmci — Mica Creek Succession; Undivided

UPPER PROTEROZOIC?

Pq — Fine grained foliated muscovitic quartzite, quartz pebble conglomerate, orthoquartzite, minor marble; cut by garnet amphibolite dykes.

LOWER PROTEROZOIC

Pgcg — GOLD CREEK GNEISS: granitic to quartz dioritic foliated augen orthogneiss, minor screens and dykes of amphibolitic gneiss, amphibolite, and garnet amphibolite

Geological boundary: (defined; approximate; assumed)
Arbitrary boundary between defined and undefined units

Thrust fault: (defined; approximate; assumed; projection under younger deposits; teeth on hanging wall)
Detachment: (defined, approximate; assumed; projection under younger depoists; teeth on hanging wall)
Normal fault: (defined; approximate; assumed; projection under younger deposits; teeth on hanging wall)
Tear fault: (defined; approximate; assumed; arrows give sense of displacement)

Anticline: (defined; approximate; upright; overturned)
Syncline: (defined; approximate; upright; overturned)
West vergent nappe: (approximate)

Bedding: (inclined; vertical; overturned)
First foliation (S1): (inclined; vertical)
Second foliation (S2): (inclined; vertical)
Third foliation (S3): (inclined; vertical)

Mesoscopic F1 fold: (inclined)
Mesoscopic F2 fold: (inclined)
Intersection lineation: (inclined)
Stretching lineation: (inclined)

Mineral isograds (high grade side on the southwest):
biotite
garnet
staurolite/kyanite

Geochronological data (age in Ma):
U/Pb zircon
U/Pb allanite ... all U 308
U/Pb monazite
K/Ar biotite
K/Ar muscovite
K/Ar hornblende

Facies change
Line of section
Trail

NOTES

1. Geology of the Selwyn Range by M.R. McDonough based on ground and air observations (1985-1987); Geology of the Premier Range by D.C. Murphy based on studies of air photographs and ground and air observations (1989).

2. Bedding-parallel to -subparallel S1 foliation of the Rocky Mountains is equivalent to S1+2 of the Monashee and Cariboo mountains; S2 crenulation cleavage is equivalent to S3 crenulation cleavage of the Monashee and Cariboo mountains; S3 is a D2 conjugate crenulation cleavage except in Terry Fox anticlinorium where it is a late D2 strain slip cleavage (see Simony *et al*., GSA Mem. 153, pp. 445-461,1980; McDonough and Simony, CJES, v.25, pp. 1687-1702, 1988; McDonough, Ph.D. thesis, Univ. of Calgary, Calgary, Alta, 1989).

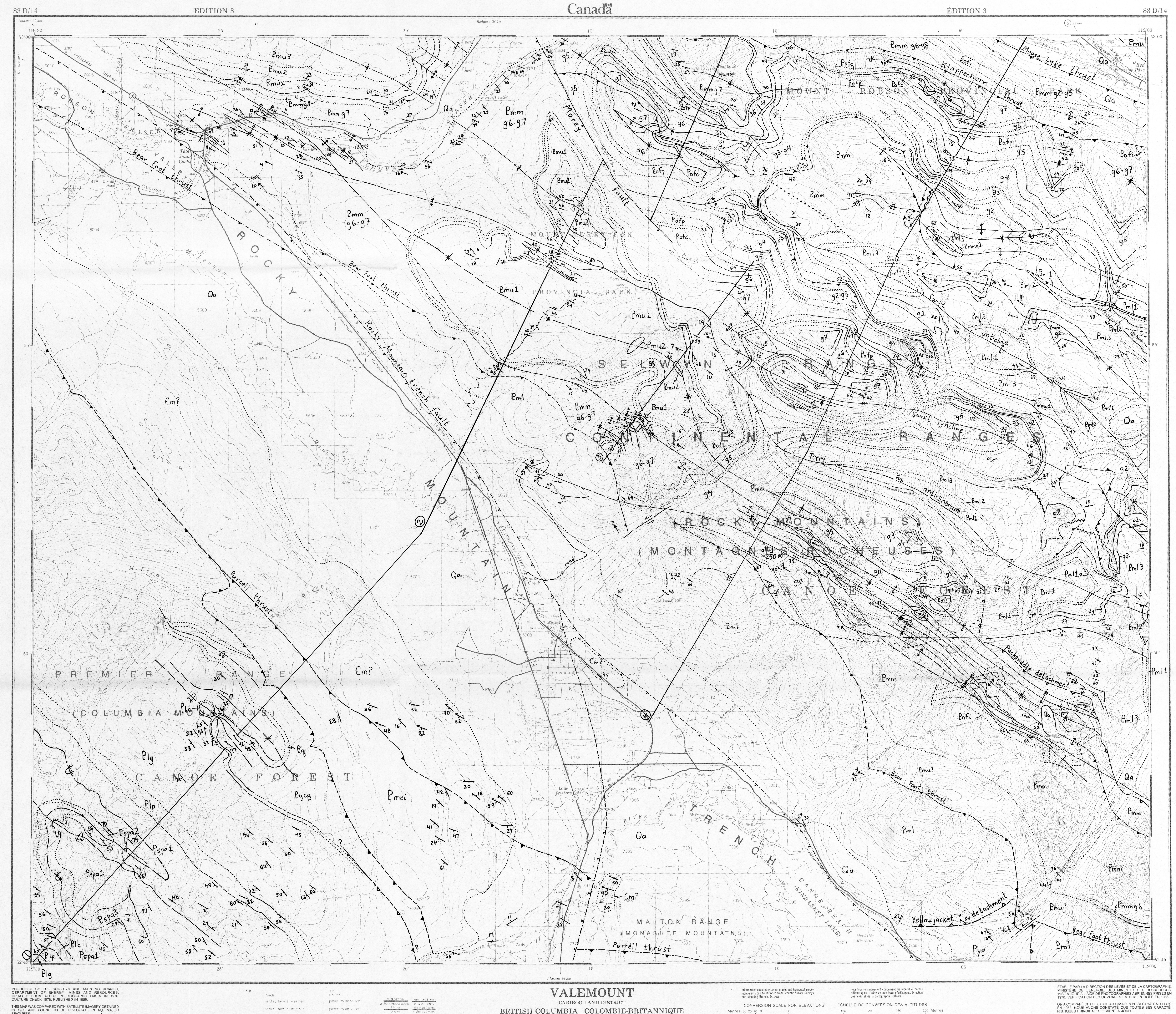
3. Stretching lineations refer to stretched or rodded pebbles in middle Miette Group conglomerates located in the footwall of the Bear Foot thrust, in a narrow zone of high strain and dextral shear, the Valemount strain zone. The Bear Foot thrust and the Valemount strain zone are part of a dextral oblique-slip thrust system that carried basement gneisses into the Rocky Mountain belt (see McDonough and Simony, CJES, v.25, pp. 1687-1702, 1988; McDonough and Simony, Geology, v. 17, pp.427-430, 1989).

4. The biotite and garnet isograds cross to the south of Swift Creek. This is probably due to a retrogressive metamorphism that destroyed early biotite coexisting with garnet, followed by younger metamorphism that produced biotite plus garnet assemblages to the south of Swift Creek, and biotite plus chlorite assemblages to the north of Swift Creek (see Hynes and Forest, J. Met. Pet., 1988; McDonough, Ph.D. thesis, Univ. of Calgary, Calgary, Alta, 1989).

5. Description of the Gold Creek gneiss and overlying Mica Creek Succession and Kaza Group is given by Walker and Simony, GSC Paper 89-1E, 1989; Murphy, GSC Paper 90-1E, 1990.

6. Recommended citation: McDonough, M.R. and Murphy, D.C. 1990. Valemount, B.C., 83D/14, Geol. Surv. of Can., Open File Report, scale 1:50,000.

7. Elevations in feet above sea level.



VALEMOUNT
83 D/14
EDITION 3 ÉDITION

Énergie, Mines et Ressources Canada — Energy, Mines and Resources Canada

Commission géologique du Canada
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