



SURFICIAL MATERIALS
 SEYMOUR ARM (82M NW, NE, SE, SW)

QUATERNARY

I GLACIER ICE: ice and semi-permanent snow; thickness largely unknown but in order of tens of metres; occurs as irregular, tongue- and cusped-shaped masses. Consists of cirque glaciers and small mountain ice caps and valley glaciers. Includes minor areas of loose moraine debris and nunataks which consist largely of rock and colluvium-covered rock.

O ORGANIC DEPOSITS: peat, muck, minor sand, silt, and tephra; up to 3 m thick; occurs under bogs and wetlands. Only a few large deposits are mapped; small unmapped deposits occupy closed depressions in upland areas and abandoned channels and segments of floodplains where alluvial damming has caused ponding.

OB COLLUVIAL DEPOSITS: rubble and diamicton; consists of products of mass wasting that have reached their present position by gravity induced movement. Includes talus, slope wash, rock fall, landslide, and soliflucted materials.

Cv SLOPE DEPOSITS: diamicton and rubble mantling slopes.

Cb COLLUVIAL veneer up to 2 m thick includes rock outcrops and minor areas of moraine deposits and generally overlies rock.

Ca COLLUVIAL Apron Materials: rubble and diamicton in the form of an apron or of coalescing fans, and cones deposited on the lower parts of slopes. Consists of rubble where slope above is dominantly competent rock, and of diamicton where source is moraine and other unconsolidated materials; locally includes alluvial deposits. In addition to areas mapped as colluvial apron, this unit occurs at the toe of most extensive slopes, overlies older unconsolidated deposits at the margins of most valleys, and is an integral component of alluvial complexes (Aa) and colluvial-alluvial complex (C/Ca).

Ch Landslide and Rockfall Materials: rubble and diamicton; topography hummocky to rolling. Consists predominantly of blocks and rubble derived from local bedrock; with an admixture of rounded pebbles and finer materials derived from moraine, alluvial, and glaciofluvial sediments. In many places the limit of the area of slope failure is marked by a prominent escarpment. In addition to the few landslides large enough to map at this scale, small landslides and rockfalls are abundant in areas of steep slopes, particularly where the underlying bedrock has been highly sheared or consists of schist and phyllite.

ALLUVIAL DEPOSITS: sand, gravel, and minor silt, organic sediment, and diamicton 2-40 m thick deposited on floodplains and in fans.

Ap Alluvial Plain Sediments: sand, gravel, and minor silt and organic sediments; up to 20 m thick; deposited as bar, channel and overbank deposits; includes low terraces, small alluvial fans, colluvial fans and aprons, and organic deposits developed in abandoned channels and segments of valleys ponded by alluvial or beaver damming. Sediment in Columbia River valley and in and at the mouths of small steep gradient valleys is bouldery.

At Alluvial Fan Sediments: gravel, sand, and diamicton; up to 40 m thick; occurring as fan or terraced fan-shaped deposits. Sediment is bouldery where gradients are steep and has a muddy matrix where moraine deposits are abundant in the sediment source area.

At Alluvial Terrace Sediments: gravel, sand, and minor silt; 2-15 m thick; occurs beneath plains bounded on at least one side by a scarp; consists of raised floodplain and deltaic deposits.

C/Ca COLLUVIAL-ALLUVIAL COMPLEX: gravel, sand, rubble, and diamicton. A complex of inter-tonguing and overlapping alluvial deposits (Ap and At) and alluvial fans and colluvial aprons (Aa and Ca). Mapped in major river valleys where small complexity interrelated units could not be subdivided.

LACUSTRINE DEPOSITS: silt and fine grained sand with minor clay deposited in lakes which formed behind glacier dams or in isostatically downwarped segments of valleys.

Lp Lacustrine Plain and Blanket Sediments: silt and fine grained sand with minor clay; 2-50 m thick; structure in many places laminated. These materials are easily eroded and prone to slumping.

Lb Thick deposits occurring as plains.

Lp Thin deposits occurring as plains.

Lb Blanket deposit mantling underlying surface.

GLACIOFLUVIAL DEPOSITS: gravel and sand; 2-40 m thick; deposited beneath and in front of the margin of a glacier.

Aq Glaciofluvial Terrace Sediments: gravel, sand, and minor silt; 2-40 m thick. Occurs as plains occupying valley bottoms, which may locally contain kettles, and as terraces. In many places the material is interpreted as having been deposited between the valley wall and the margin of a glacier.

Ah Kames: gravel, sand, and minor silt; 2-30 m thick; surface undulating to weakly hummocky. Deposit interpreted as having formed on ice which later melted, giving the sediment its undulating to hummocky surface.

Aq Glaciofluvial Veneers: gravel and sand; up to 2 m thick; largely takes the form of underlying surface. Interpreted as a gravel and sand lag formed where glacial meltwaters washed and eroded moraine deposits.

MORAINAL DEPOSITS: sandy and gravely diamicton; 2-10 m thick; deposited directly by glacier ice. The matrix of the diamicton (fill) is 40-80% sand, 20-40% silt, and 5-20% clay; stone and boulder content is extremely variable. Till exposed in thick sections is compact but where it occurs at the surface it is generally loose.

Mb Moraine Blanket and Veneer Sediments: sandy and gravely diamicton mantling the surface of the underlying rock.

Mv Moraine Blankets: till, 2-5 m thick; includes isolated outcrops, patches of thicker till, and minor other deposits.

Mv Moraine veneers: till, less than 2 m thick; generally includes patches of bedrock and colluvium, pockets of thicker till, and minor other deposits.

Mv Area consisting of approximately equal proportions of moraine blanket and moraine veneer.

Explanation of Letter Notations

The map unit notations used largely follow the system of the Resource Analysis Unit of the British Columbia Department of the Environment. A combination of upper and lower case letters is used to designate the nature of each terrain unit, e.g., gMh. The upper case letter indicates a broad compositional-genetic class. The lower case letter(s) that follows this indicates the morphology. A lower case letter preceding the upper case letter specifies the texture; the texture terms are used only where it is possible to specify that the unit texture differs from that generally ascribed to the compositional-genetic class.

Many map units are shown as consisting of more than one terrain unit. Where no symbol separates the terrain units, the two elements occur in roughly equal parts, e.g., MvCv; where the terrain unit terms are separated by a slash, e.g., Mb/Mv, the first is the major component and the second is subordinate; a term following a double slash or separated from a subordinate unit by a slash occurs as a minor constituent, e.g., Mv/Rs or Mb/Mv/Cv.

One designator placed over another Ca indicates a stratigraphic succession where the upper unit(s) overlies the lower.

The upper case letter(s) that follows a dash or a square bracket, e.g., Ca-A or Cv/Rs]MAN, is referred to as an erosional modifier. It indicates that the unit has been modified in a specific way. The dash indicates that only the directly preceding terrain unit (to the left) has been modified whereas a square bracket indicates that all terrain units in front of it have been modified. For example, Ca/Rs - M]A indicates that both the rock area and the colluvial apron are scoured by alluvial fans but that mass wasting affects only the rock areas.

| Compositional-Genetic Class | Erosional Modifiers |
|---|-----------------------|
| M - moraine; till | V - gullied |
| A - alluvial; sand, gravel, silt, diamicton | M - mass wasted |
| L - lacustrine; silt, fine sand, clay | N - niviated |
| C - colluvium; rubble, diamicton | A - avalanche scarred |
| O - organic; peat, muck | F - falling |
| G - glaciofluvial; sand, gravel | |
| R - bedrock | |

| Morphologic Subdivision | Texture |
|-------------------------|-------------------|
| p - plain | b - bouldery |
| m - undulating | g - gravely |
| h - hummocky | s - sandy |
| r - ridged | f - silt and clay |
| t - terraced | r - rubble |
| i - fan | |
| a - apron | |
| v - veneer | |
| b - blanket | |
| s - steep slopes | |
| x - complex | |

SURFICIAL GEOLOGY
 SEYMOUR ARM 82M - SE

Geology by R.A. Achard, 1969-1970,
 and R.J. Fulton, 1972, 1981