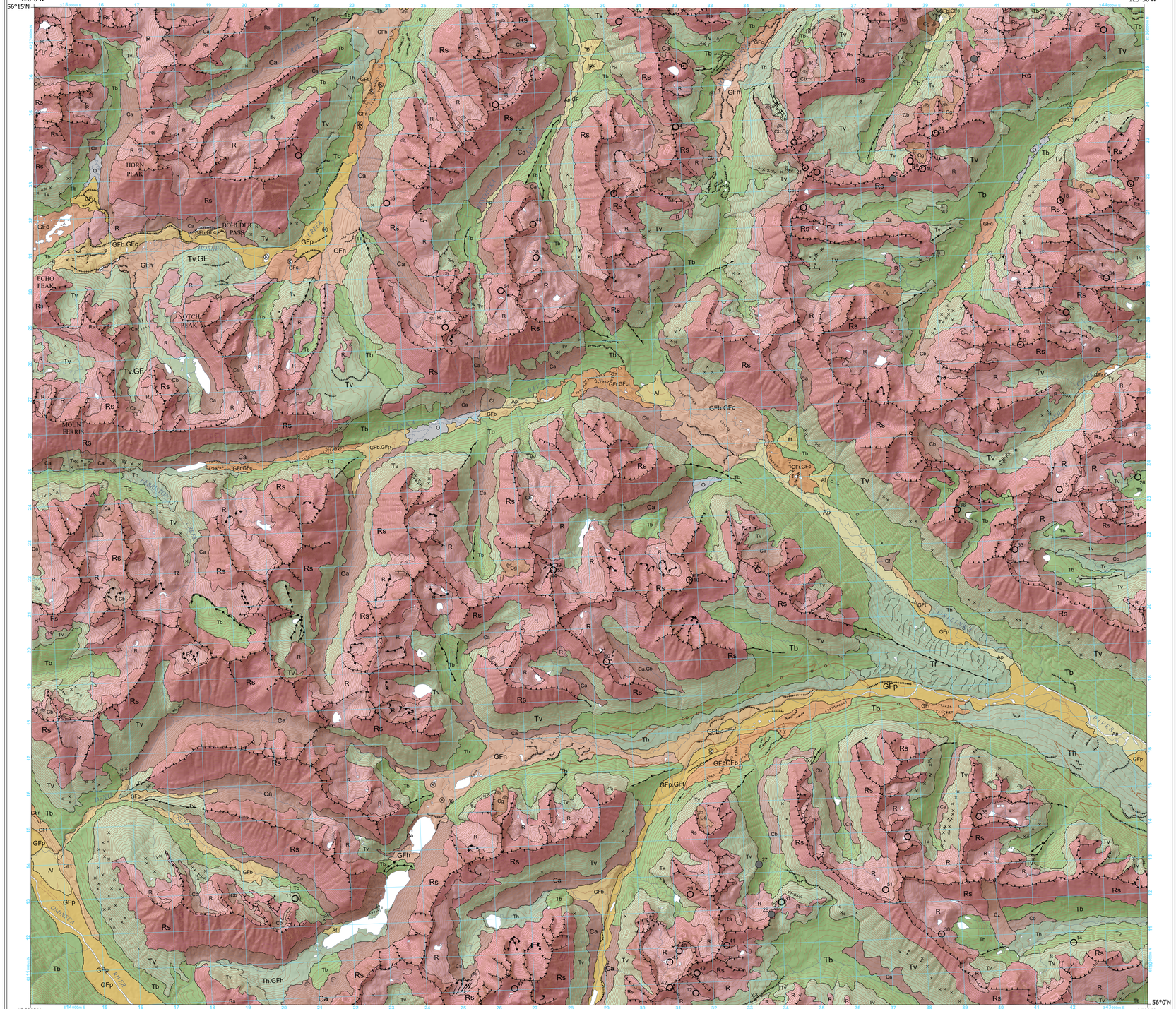


Ministry of Mining and Critical Minerals

British Columbia Geological Survey Geoscience Map 2026-01

Surficial geology of the Notch Peak area, British Columbia (NTS 94C/4)

T. Ferbey and E.A. Elia

0 1 2 3 4 5
Kilometres

Scale 1:50,000

Cartography by K. Szponarski.

Note: Where surficial geology map units consist of multiple materials, a compound map unit designator is used. These compound designators note areally more extensive and less extensive surficial materials joined with a ':' (e.g., Cv.R where Cv is more extensive than R). We used the surficial geology data model of Deblonde et al. (2024) and definitions for surficial materials and surface expressions in Howes and Kenk (1997).

QUATERNARY SURFICIAL DEPOSITS

NONGLACIAL ENVIRONMENT

O — ***Organic deposits:*** peat and other plant material in various stages of decomposition; generally in flat and wet terrain over poorly drained substrates; may include minor fluvial and lacustrine sediments; most common in valley bottoms in transition zones between tree stands and water bodies; rare at high elevations.

Colluvial and Mass Wasting Deposits:
Rubble and diamicton, poorly sorted, massive to stratified. Composition is dependent on source material. Deposited directly by gravity-induced movement.

Cf — ***Colluvial fan:*** poorly sorted sand and gravel and diamicton; predominantly subangular clasts but range from subrounded to angular, oxidized; typically 1-10 m thick, but may be >10 m thick at the base of large slopes; slope gradients between 5° and 20°; typically where steep creeks enter valleys.

Ca — ***Colluvial apron and talus slope:*** diamicton and rubble sourced from steep upslope bedrock exposures; 1 to 10 m thick but locally >10 m near the base of tall slopes; typically a series of colluvial cones (slope gradient >15°) that have merged into a relatively homogeneous slope.

Cz — ***Landslide deposits:*** diamicton, rubble, and blocks; hummocky and ridged topography; can be >10 m thick; typically forms hummocky topography; includes inactive and active landslides.

Cg — ***Rock glacier:*** rubble and blocks with interstitial ice; hummocky and ridged topography; lobed surface expression due to flow; common in high elevation, north-facing cirques.

Cb — ***Colluvial blanket:*** sand, rubble, and diamicton; >2 m thick; topography is predominantly controlled by the underlying material and masks minor irregularities; typically overlies till or bedrock; occurs on moderate to steep slopes.

Alluvial Deposits: Gravel, sand, minor silt, and organic material, commonly stratified. Deposited by modern streams.

Ap — ***Alluvial floodplain:*** sorted sand and gravel with minor silt; >2 m thick; local and discontinuous organic veneers; forms low-relief planar surfaces near modern rivers; prone to flooding.

Af — ***Alluvial fan:***poorly sorted gravel, sand, and diamicton; >2 m thick; stratified; slope gradient <15°; occur where a stream issues from a narrow valley onto a plain or valley floor; a potential aggregate source.

PROGLACIAL AND GLACIAL ENVIRONMENTS

Glaciofluvial Deposits: Sand and gravel with minor diamicton, well to poorly stratified. Deposited by glacial meltwater. All deposit types are potential aggregate sources.

GFp — ***Glaciofluvial outwash plain:*** sand and gravel; 1 to >10 m thick; massive to bedded; generally forms flat surfaces sloping away from direction of glacier retreat.

GFt — ***Glaciofluvial terrace:*** sand and gravel; 1 to 10 m thick; forming gently sloping flat surfaces perched above meltwater channels or modern streams and alluvial deposits.

GFh — ***Hummocky glaciofluvial:*** poorly sorted sand and gravel with minor diamicton; bedded to massive; 1 to >20 m thick; deposited in contact with a retreating glacier; forms hummocky topography related to melting of buried ice.

GFc — ***Glaciofluvial ice-contact:*** poorly sorted sand and gravel; >2 m thick; hummocky ridged and kettled surface expressions; locally with discontinuous glaciolacustrine sediments in areas that were ponded; a product of ice stagnation, typically in low-relief valley bottoms.

GFr — ***Esker:*** sand and gravel; massive to bedded; 3 to >5 m thick; deposited by meltwater flowing in tunnels in interior of glacier or in channels at base; forms sinuous ridges.

GFb — ***Glaciofluvial blanket:*** sand and gravel; >2 m thick; occurs near the margins and at the mouth of meltwater channels; forms gently undulating to flat surfaces.

Till Deposits: Diamicton consisting of clasts of all sizes and diverse rock types in a sandy to silty sand matrix. Deposited directly by glaciers and may be modified by modern periglacial processes. On steep slopes, primary features may be modified by slope creep. Mostly deposited by the Cordilleran Ice Sheet during the Late Wisconsinan Fraser Glaciation. Holocene tills deposited by cirque glaciers are included in this unit.

Th — ***Hummocky till:*** sand- and gravel-rich diamicton; >2 m thick; hummocky to rolling surface with moderate to steep slopes and local relief of 1 to 10 m; locally may contain glaciolacustrine and glaciofluvial sediments between hummocks; a product of ice stagnation.

Tr — ***Ridged till:*** diamicton; >2 m thick; includes discontinuous elongate ridges interpreted as moraines, roughly oriented perpendicular to ice-flow direction; local relief of 1 to 2 m.

Tv — ***Till veneer:*** diamicton; <2 m thick; surface expression mimics underlying topography; on moderately steep slopes and at high elevations; may be modified by creep processes; can be discontinuous and include abundant bedrock outcrops.

Tb — ***Till blanket:*** diamicton; >2 m thick; continuous till cover forming undulating topography that locally obscures underlying units; rare bedrock outcrops.

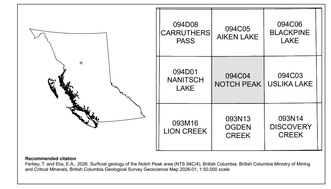
PRE-QUATERNARY

Bedrock: Mainly igneous intrusive rocks of northern Hogem batholith (Jurassic to Cretaceous). Also metamorphosed volcanic and sedimentary rocks and less common intrusive rocks of Quesnel and Stikine terranes and metamorphic and ultramafic rocks of Cache Creek terrane (Ootes et al., 2020a).

R — ***Bedrock:*** bedrock outcrop; locally includes areas of colluvium and till generally <2 m thick; extensively frost shattered at higher elevations; commonly exposed on steep slopes and in alpine environments.

Rs — ***Steep bedrock slopes:*** bedrock outcrop with loose blocks of local bedrock on steeply sloping terrain (>30°); patchy cover of till and colluvium (<2 m thick) increases downslope.

- Rock glacier
- Alluvial Fan
- Kettle
- Meltwater Channel:
  - *Minor (flow direction unknown)*
- Moraine Ridge:
  - *Minor*
  - *Lateral*
  - *Medial*
  - *End*
- Esker ridge
- Drumlinoid ridge
- Cirque headwall
- Arête
- Small bedrock outcrop in thick drift
- Station (ground observation)
- Geological contact (defined)
- Road
- Mineral occurrence (see Table 1; numbers indicate Map ID)
  - *Prospect*
  - *Showing*



Recommended citation
Ferbey, T. and Elia, E.A., 2026. Surficial geology of the Notch Peak area (NTS 94C/4), British Columbia. British Columbia Ministry of Mining and Critical Minerals, British Columbia Geological Survey Geoscience Map 2026-01, 1:50,000 scale.

North American Datum 1983 (CSRS)
Universal Transverse Mercator Zone 10 North
Shaded relief image derived from the digital elevation model supplied by Natural Resources Canada.
Illumination: azimuth 315°, altitude 45°, vertical factor 1x.
Base map at the scale of 1:50,000 from GeoBC, with modifications.
Contour interval 20 metres. Elevations in metres above mean sea level.

Table 1. Mineral occurrences from MINFILE database (MINFILE, 2026). Abbreviated deposit type designations (e.g., L03) follow deposit descriptions detailed in Lefebure and Jones (2020).

Map ID	MINFILE No.	Name	Status	Commodity	Deposit Type
1	094C 010	ET	Showing	Cu, Au	L03: Alkalic porphyry Cu-Au
2	094C 011	OS	Showing	Cu	L03: Alkalic porphyry Cu-Au
3	094C 016	CHIEF THOMAS	Showing	Cu, Au, Ag	I05: Polymetallic veins Ag-Pb-Zn+/-Au
4	094C 017	ELIZABETH	Showing	Au, Ag	I01: Au-quartz veins
5	094C 018	MATETLO	Prospect	Cu	L03: Alkalic porphyry Cu-Au
6	094C 045	HORNWAY CREEK	Showing	Cu	L03: Alkalic porphyry Cu-Au
7	094C 046	ETSCHITKA CREEK	Showing	Cu	L03: Alkalic porphyry Cu-Au
8	094C 047	MATETLO CREEK	Showing	Cu	L03: Alkalic porphyry Cu-Au
9	094C 048	TENAKIHI CREEK	Showing	Cu	L03: Alkalic porphyry Cu-Au
10	094C 050	HOGEM COPPER	Showing	Cu, Au, Pb	L03: Alkalic porphyry Cu-Au
11	094C 051	DETNI CREEK	Showing	Cu	L03: Alkalic porphyry Cu-Au
12	094C 063	DOVE	Showing	Cu, Mo, Ag	L03: Alkalic porphyry Cu-Au
13	094C 072	GAIL	Showing	Cu, Mo, Au, Ag	L03: Alkalic porphyry Cu-Au
14	094C 077	ND	Showing	Cu	L03: Alkalic porphyry Cu-Au
15	094C 098	PAUL	Showing	Mo, Cu	L04: Porphyry Cu +/- Mo +/- Au
16	094C 099	MAT 1	Prospect	Ag, Cu, Pb, Zn, Au, Mo	I05: Polymetallic veins Ag-Pb-Zn+/-Au
17	094C 111	SNOW	Showing	Cu	L03: Alkalic porphyry Cu-Au
18	094C 112	DM	Showing	Cu	L03: Alkalic porphyry Cu-Au
19	094C 113	YAK	Showing	Cu	L03: Alkalic porphyry Cu-Au
20	094C 114	KOALA	Showing	Cu	L03: Alkalic porphyry Cu-Au
21	094C 115	INTREPID	Showing	Cu	L03: Alkalic porphyry Cu-Au
22	094C 116	BILL	Showing	Cu, Au	L03: Alkalic porphyry Cu-Au
23	094C 117	YETI	Showing	Cu	L03: Alkalic porphyry Cu-Au
24	094C 118	DRAGON	Showing	Cu, Au	L03: Alkalic porphyry Cu-Au
25	094C 119	TOUGH	Showing	Cu	L03: Alkalic porphyry Cu-Au
26	094C 133	TEN (MAIN)	Showing	Cu, Au, Ag, Mo	L03: Alkalic porphyry Cu-Au
27	094C 138	HAWK (AD)	Prospect	Au, Cu, Pb, Zn, Ag	I05: Polymetallic veins Ag-Pb-Zn+/-Au
28	094C 139	HAWK (RADIO)	Prospect	Au, Cu, Ag	I01: Au-quartz veins
29	094C 140	HAWK (HSW)	Showing	Au, Cu	I01: Au-quartz veins
30	094C 170	GOAT	Showing	Cu, Au, Ag	L03: Alkalic porphyry Cu-Au
31	094C 171	MEADOW	Showing	Au, Ag, Cu	I01: Au-quartz veins
32	094C 174	OSI	Showing	Cu, Pt	L03: Alkalic porphyry Cu-Au
33	094C 175	ATEN 2	Showing	Cu	L03: Alkalic porphyry Cu-Au
34	094C 176	CJL	Showing	Cu, Au	L03: Alkalic porphyry Cu-Au
35	094C 177	NOVA 5	Showing	Cu	L03: Alkalic porphyry Cu-Au
36	094C 186	AREA 1 (THANE CREEK)	Showing	Cu, Au, Ag	L03: Alkalic porphyry Cu-Au
37	094C 188	LAKE AREA (CATHEDRAL)	Showing	Cu	L03: Alkalic porphyry Cu-Au
38	094C 190	18 LO-7-2A	Showing	Cu, Ag	L03: Alkalic porphyry Cu-Au
39	094C 191	18 LO-15-1B-3	Showing	Au, Ag, Cu, Zn, Pb	I05: Polymetallic veins Ag-Pb-Zn+/-Au
40	094C 192	18 AB-17-2	Showing	Cu, Ag, Au	L03: Alkalic porphyry Cu-Au
41	094C 193	18 LO-24-5A	Showing	Cu, Ag, Au	L03: Alkalic porphyry Cu-Au
42	094C 194	18 AB-16-9	Showing	Cu, Au, Ag	L03: Alkalic porphyry Cu-Au
43	094C 195	18 LO-25-2C	Showing	Cu, Au, Ag	L03: Alkalic porphyry Cu-Au
44	094C 196	18 LO-15-1B-1	Showing	Au, Ag, Cu	Unknown
45	094C 197	18 AB-18-10B	Showing	Cu, Au, Ag	L03: Alkalic porphyry Cu-Au
46	094C 198	18 BG-31-1B	Showing	Cu, Ag	L03: Alkalic porphyry Cu-Au
47	094C 199	18 AB-23-8	Showing	Cu, Ag, Au	L03: Alkalic porphyry Cu-Au
48	094C 200	18 LO-6-2A	Showing	Cu, Ag	L03: Alkalic porphyry Cu-Au
49	094C 201	18 AB-6-3C	Showing	Cu, Au, Ag	L03: Alkalic porphyry Cu-Au
50	094C 202	18 LO-18-6	Showing	Cu, Ag	I05: Polymetallic veins Ag-Pb-Zn+/-Au
51	094C 203	18 AB-26-4	Showing	Cu, Ag, Au	L03: Alkalic porphyry Cu-Au
52	094C 204	18 LO-15-1B-2	Showing	Au, Ag, Cu	Unknown
53	094C 209	OOTES	Showing	Cu, Au, Ag	I: Vein, breccia and stockwork
54	094C 210	18 DMI-8-10	Showing	Cu, Ag	L03: Alkalic porphyry Cu-Au

Descriptive notes

In 2018, the British Columbia Geological Survey initiated a multi-year program integrating 1:50,000-scale bedrock and surficial geological mapping for northern Hogem batholith. New bedrock mapping refined the origin and timing of batholith emplacement and base- and precious-metal mineralization (Ootes et al., 2019a, b, 2020a, b; Jones et al., 2021), and new surficial geology mapping detailed the ice-flow history (Ferbey and Elia , 2021). The present series of 1:50,000-scale surficial geology maps is for the Notch Peak (NTS 94C/4), Aiken Lake (NTS 94C/5), Nanitsch Lake (NTS 94D/1), and Carruthers Pass (NTS 94D/8) map areas.

The Cordilleran Ice Sheet covered the Hogem batholith area during the Late Wisconsinan glacial maximum when ice flowed east and southeast across the region from an ice divide above the Skeena Mountains. During this stage, ice flow was independent of valley floor topography and glaciers were able to move over low-elevation topographic divides, transporting glacial debris into adjacent drainages (Ryder and Maynard, 1991; Clague and Ward, 2011). Glacially streamlined or eroded landform- and outcrop-scale indicators are commonly aligned parallel with valleys, indicating that ice flow direction was still controlled by steep, high-elevation valley walls for most of the Late Wisconsinan.

Overconsolidated subglacial tills were deposited in the area during full-glacial conditions as till blankets, streamlined tills, and till veneers. During deglaciation, less consolidated melt-out tills were deposited as hummocky tills. Significant volumes of glacial meltwater flowed through the area during deglaciation, transporting coarse-grained sands and gravels. Much of this transport and deposition was subaerial (forming extensive outwash plains and terraces) but a component was subglacial (forming eskers) or in contact with stagnant ice blocks (producing hummocky sands and gravels). Colluvial deposits are common along the base of steep slopes and are now vegetated and stable, but talus aprons and cones are still actively being constructed. Solifluction lobes and rock glaciers are currently active, predominantly on north-facing slopes. Organic deposits occur throughout the study area, mostly as narrow transition zones between tree stands and water bodies. These deposits can be extensive along the floors of retreat-phase glaciofluvial meltwater channels.

Subglacial till, the ideal sample medium for till geochemistry and mineralogy surveys in mineral exploration (Levson, 2001), is common in valley bottoms and covering lower hillslopes. Although bedrock is well-exposed at high elevation, small, isolated outcrops, which may be overlooked, are common along valley bottoms and on forested hill flanks.

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