

SEG WHISTLER 2013: GEOSCIENCE FOR DISCOVERY
Porphyry Systems of Central and Southern BC:
Prince George to Princeton
Friday Sept 27 - Wednesday Oct 02, 2013

LEADERS:

Jim Logan, BC Geological Survey (Jim.Logan@gov.bc.ca)

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WHERE: Prince George-Quesnel-Williams Lake-Kamloops-Vancouver

WHEN: September 27 to October 02, 2013. Five day field trip; post-conference

COST: \$CAD (based on double occupancy) and includes transportation beginning from Prince George (Sept 28) back to Vancouver airport (Oct 02), all meals and accommodations. Participants are required to oversee transportation costs from Whistler to Prince George (~\$300.00) on Sept 27, 2013.

MINIMUM PARTICIPANTS: 20

MAXIMUM PARTICIPANTS: 40

GEAR: Comfortable hiking boots and outdoor clothing is recommended





SUMMARY:

British Columbia porphyry deposits formed during two separate episodes: Late Triassic to Early Jurassic and Late Cretaceous to Eocene. The older, pre-accretion deposits formed by subduction in island-arcs and are preserved in the Quesnel and Stikine terranes as paired alkalic and calcalkalic porphyry belts that extend for ~2,000 km along the axis of the Canadian Cordillera. These arc terranes are joined at their northern ends, but are otherwise separated by relics of ocean basin and oceanic arc rocks collectively referred to as Cache Creek terrane. Most of the economic metal endowment (Cu-Au ± Ag-Mo) of this event occurred during a 17 m.y. interval centered on 203 Ma. The younger, Late Cretaceous to Eocene porphyry Cu-Mo, Cu-Au and Mo deposits formed after the outboard terranes were accreted to the western margin of North America in an intracontinental setting.

This trip will transect central Stikine, Cache Creek and Quesnel terranes, with visits to six operating mines; the Endako Mine, Gibraltar Mine (Williams Lake), Mount Polley (Likely), Highland Valley Copper (Logan Lake), New Afton (Kamloops) and Copper Mountain (Princeton). It begins in the Stikine terrane at Endako, a Late Jurassic post-accretion porphyry Mo deposit hosted within a long-lived (>75 m.y.) magmatic centre. At Gibraltar post-mineral ductile deformation affects Cu-Mo mineralization and Late Triassic diorite-tonalite-trondhjemite that were emplaced into the Cache Creek terrane. East of Gibraltar Na- and K-rich volcanic rocks dominate the arc, and Cu-Au porphyry deposits are centered on 204 Ma alkalic intrusions at Mount Polley. Further south, at Highland Valley we will visit Canada's largest porphyry copper open-pit operation and show-case classic alteration and mineralization assemblages of a calcalkalic porphyry deposit. At New Afton (Canada's only operating block-cave operation) and Copper Mountain (open pit operations) Cu±Au porphyry mineralization is associated with 204 Ma alkalic intrusions and field visits will focus on the distinctive potassic, sodic and calc-potassic alteration assemblages associated with the mineralization. The architecture of the Quesnel arc, its calcalkaline and alkaline mineral deposits and the relationship between co-spatial early calcalkaline and later alkaline volcanism, plutonism and mineralization (Cu-Mo±Au vs. Cu-Au) will be presented and highlighted by mine geologists through deposit overviews and on-site tours over the course of this 5-day post-conference trip.

DETAILED ITINERARY:

Friday Sept 27, 2013 (travel Whistler – Vancouver - Prince George)

- Shuttle bus (dep. 12:30 or 15:30) Whistler-Vancouver airport (15:00 or 18:00 arr.) and flight to Prince George (~\$300.00 neither booked nor included in trip costs)
- 20:00 - Ice breaker and regional geology overviews
- Travelodge, 1458 7th Ave, Prince George, BC V2L 3P2 (250)563-0666

Saturday Sept 28, 2013 (Endako Mine)

- 7:30 AM depart PG for Endako Mine
- 9:30-12:30 AM Endako geology overview and pit tour by Thompson Creek Metals Company staff
- Box lunch provided
- Dinner in Prince George en route to hotel in Quesnel
- Quality Inn & Suites, 753 Front Street, Quesnel, BC (250) 992-7247

Sunday Sept 29, 2013 (Gibraltar and Mount Polley mines)

- 7:30 AM depart Quesnel for Gibraltar Mine
- 8:30-12:00 AM - Gibraltar geology overview and pit tour provided by Taseko Mines personnel
- Depart for Mount Polley via Beaver Valley Road, box lunch en route
- 14-18:00 - Mount Polley geology, core and site tour by Imperial Metals Corp personnel
- Depart Mount Polley for hotel and dinner in Williams Lake
- Coast Fraser Inn, 285 Donald Rd, Williams Lake, BC (250)398-7055

Monday Sept 30, 2013 (Highland Valley Copper Mine)

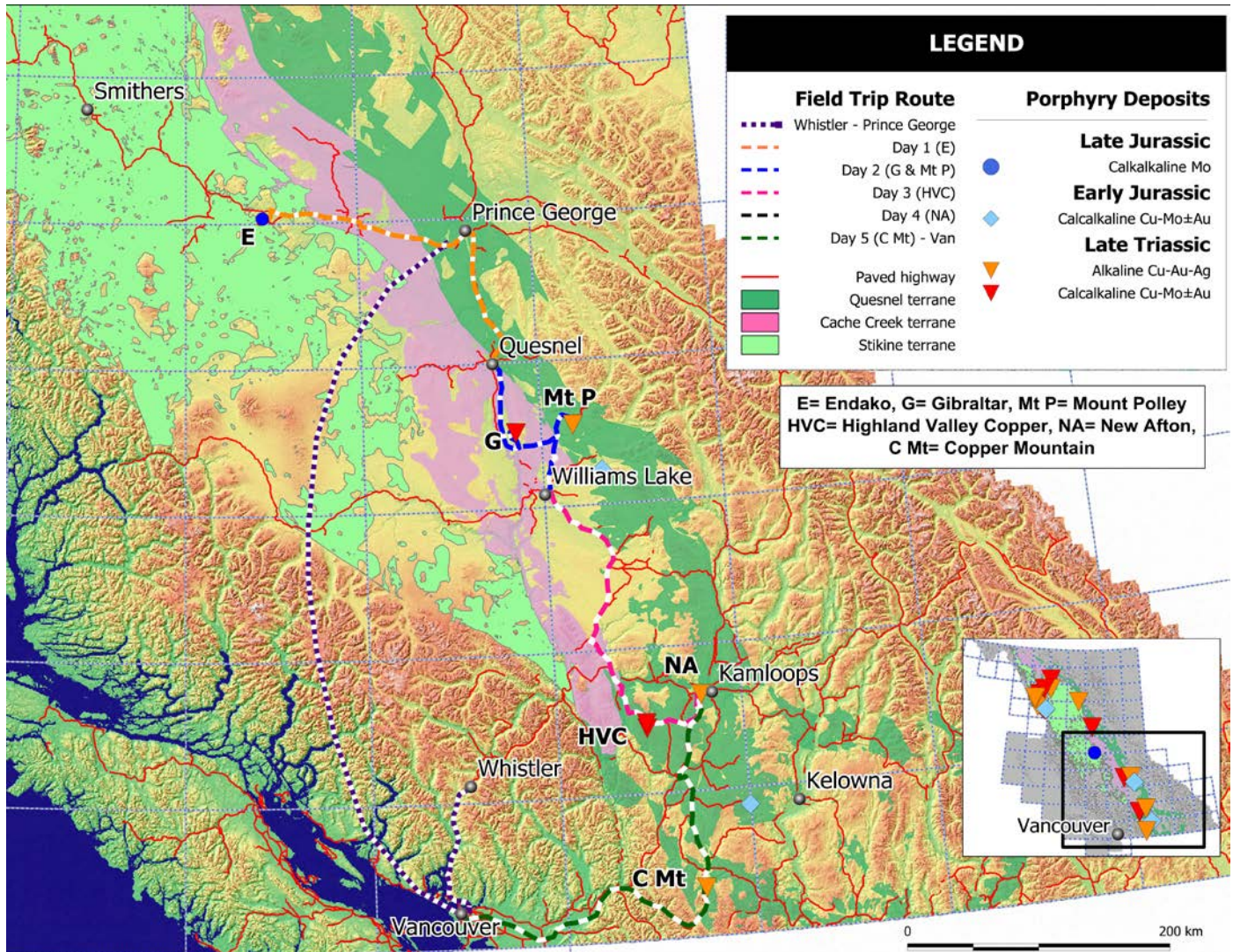
- 8:00 AM - Depart Williams Lake for Highland Valley Copper Mine
- 11-16:00 - HVC geology, pit and mill tour provided by Teck personnel
- Box lunch provided
- Depart HVC for Kamloops
- Coast Kamloops Hotel, 1250 Rogers Way, Kamloops, BC (250)828-6660

Tuesday Oct 01, 2013 (New Afton Mine)

- 8:00 AM depart Kamloops for New Afton
- 9:00-12:00 AM - Afton geology, underground and/or surface tour first group
- Box lunch provided
- 13:00-16:00 - underground and/or surface tour second group
- Depart New Afton for Kamloops
- 19:30 PM – Group dinner / Presentation and discussion on regional geology and metallogeny of southern BC
- Coast Kamloops Hotel, 1250 Rogers Way, Kamloops, BC (250)828-6660

Wednesday Oct 02, 2013 (Copper Mountain Mine and travel to Vancouver)

- 07:00 AM depart for Copper Mountain Mine site
- 9:30-14:00 AM -Copper Mountain geology and surface tour - Copper Mountain Mining Corporation staff
- Box lunch provided
- Depart Copper Mountain for Vancouver
- 18:00 PM - Arrive and disperse at Vancouver airport



Porphyry Systems of Central and Southern BC: field trip route