# DESCRIPTIONS OF MINERAL OCCURRENCES FOR THE CRESTON MAP AREA (82F/02)

(To accompany Open File 1995-15)

| Name(s) | MINFILE | UTM (Zone 11) | Description | References |
|---|---|---|---|---|
| **Topaz** | 82FSE004 | 5443568 N<br>517260 E | Cu, Pb, Zn, Ni, Sn, Ag showing. Galena, sphalerite, and cassiterite in a quartz vein. Chalcopyrite and pyrrhotite disseminated in a diorite sill. Host rock is Middle Proterozoic Aldridge Formation metasediments | |
| **Wilds Creek**, Leg, Liz B | 82FSE005 | 5450300 N<br>531321 E | Zn, Pb showings. Pyrite, sphalerite, and galena in fractures and as stratabound layers within Upper Purcell Supergroup dolomite and quartzite. Baritic carbonate horizons with abundant sphalerite mineralization. | Brown and Klewchuk (1994) |
| **Alice (L.4104)**, Otto Silver, St. Patrick, Alice Broughton | 82FSE007 | 5441990 N<br>535989 E | Pb, Ag, Zn, Cu, Au past producer. Veins and lenses of galena in strongly sheared and faulted Middle Proterozoic Aldridge Formation argillaceous quartzite. Production (1900-1952) 6900 t yielding 509 t Pb, 538.5 kg Ag, and 472 kg Zn. | |
| **Bayonne** | 82FSE030 | 5444468 N<br>503645 E | Pb, Zn, Ag, Au, Cd past producer. Pyrite, galena, sphalerite, chalcopyrite, tetrahedrite, with minor free gold, hessite, and petzite in quartz vein. The middle Jurassic Mine Stock, biotite-hornblende-epidote granodiorite, hosts the vein. Production (1935-1984) 81,700 t yielding 42.75 t Pb, 23.3 t Zn, 3.75 t Ag, and 1.3 t Au. | Mill (1962) |
| **Echo** | 82FSE031 | 5443727 N<br>503646 E | Pb, Au showing hosted in middle Jurassic Mine Stock. | Mill (1962) |
| **Spokane** | 82FSE032 | 5447617 N<br>500485 E | Pb, Zn, Ag, Au past producer. Pyrite, galena, sphalerite, and chalcopyrite in vein of quartz and sheared or altered granodiorite of the middle Jurassic Wal Stock. Vein hosted in the middle Jurassic Wall Stock. Production (1915-1956) 1700 t yielding 304 t Pb, 12.9 t Zn, 571 kg Ag, and 29.6 kg Au. | |
| **Montana (L.10778)** | 82FSE033 | 5443728 N<br>504983 E | Pb, Zn, Ag, Au, Cu showing. Quartz vein with galena and sphalerite in large irregular masses containing blebs and grains of pyrite, chalcopyrite, and tetrahedrite. Sheared granodiorite (Mine Stock) and quartzite host rock. | Sargent (1937) |
| **Summit Bell (L.10777)**, Maggie Aikens (L.10776), Michigan (L.10775) | 82FSE034 | 5445027 N<br>506561 E | Au, Pb showing. Pyrite, free gold, and possibly some galena within two quartz veins. Sheared granodiorite (Mine Stock) host rock, altered and iron-oxide-stained in the vicinity of the vein. | |
| **Virginia (L.5962)** | 82FSE035 | 5445950 N<br>503158 E | Ag, Au past producer hosted in the middle Jurassic Mine Stock. Production (1936, 1938) 19 t yielding 591 g Ag and 373 g Au. | Sargent (1937) |
| **Lost Mine**, Copper Ridge | 82FSE048 | 5448927 N<br>512021 E | Cu showing. Chalcopyrite and calcite. | |
| **North Wind** | 82FSE049 | 5448729 N<br>502671 E | Pb, Zn showing. Disseminated galena, pyrite, and sphalerite within well-defined quartz-filled fissure veins. Granodiorite (Wall Stock) host rock. | |
| **King** | 82FSE050 | 5440317 N<br>535027 E | Pb, Ag, Cu past producer. Local concentrations of galena and pyrite with minor chalcopyrite in a quartz vein. Low-grade ore in an irregular quartz vein within an amphibolite sill. Host rock is Middle Proterozoic Aldridge Formation sediments. Production (1957) 196 t yielding 980 kg Pb and 1680 g Ag. | |
| **Bob**, Elsie Holmes (L.8393) | 82FSE051 | 5447905 N<br>533764 E | Cu, Pb showing. Chalcopyrite and galena in Middle Proterozoic Creston Formation sediments. | |

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| | | | | |
|---|---|---|---|---|
| **Copper Queen** | 82FSE053 | 5431683 N 502558 E | Cu showing in the Toby Formation. | |
| **Canada Belle** | 82FSE054 | 5430205 N 506579 E | Pb, Zn showing. Northerly-striking quartz veins sparsely mineralized with barite, galena, sphalerite, and pyrite. Veins are conformable with nearly vertical bedding of Middle Proterozoic lower dolomite of the Mount Nelson Formation. | |
| **Alfred**, Josephine, Belleview, Robin, Nickel Plate | 82FSE061 | 5449380 N 532541 E | Cu, Pb, Ag, Zn showing. Sparsely disseminated pyrite, chalcopyrite, and galena associated with stringers, bunches, and masses of quartz. Some specks of tetrahedrite and sphalerite. Host rock is a silicified band of Middle Proterozoic Dutch Creek Formation dolomite. | |
| **California** | 82FSE062 | 5444754 N 533540 E | Ag, Pb, Zn showing within Middle Proterozoic Kitchener (or Aldridge?) Formation sediments. | |
| **Peggy** | 82FSE067 | 5444013 N 533545 E | Pb, Zn showing. Galena and sphalerite within Middle Proterozoic Kitchener (or Aldridge?) Formation sediments. | |
| **View** | 82FSE070 | 5439844 N 509730 E | Talc past producer. Massive mineralization in veins. Host rocks are northeast-striking, steeply northwest-dipping Proterozoic Mount Nelson Formation dolomites, quartzite, argillite, sandy limestone, schists, and amphibolite. Low grade talc mined most recently in 1984 by the International Marble and Stone Company Ltd. No production figures available. | McCammon (1964) |
| **Mike**, Mike 1, Mike 2, Creston Area Kyanite | 82FSE071 | 5444464 N 525521 E | Kyanite showing. Kyanite forms clean, bladed crystals in clumps 15 to 20 cm diametre associated with pegmatites 30 cm by 1 to 2 m by 10 m. Kyanite is also disseminated throughout the surrounding rock as 1 by 5 cm needles. Host rocks are Middle Proterozoic Aldridge Formation schists and micaceous quartzites. | McCammon (1964) |
| **McPeak** | 82FSE077 | 5435441 N 524102 E | Cu showing. Chalcopyrite within Middle Proterozoic Aldridge Formation sediments. | |
| **Motherlode** | 82FSE080 | 5432424 N 502192 E | Cu, Pb showing near the Toby Irene formation contact. Pyrite, Chalcopyrite, Pyrrhotite, Galena. | |
| **Homestake**, Skylark, Park, Victoria | 82FSE083 | 5427991 N 512189 E | Pb, Ag, Cu showing. Galena and tetrahedrite within Middle Proterozoic Aldridge Formation sediments. | |
| **Moran** | 82FSE097 | 5443916 N 507049 E | Au, Ag showing hosted in the Mine Stock. | |
| **Summit** | 82FSE100 | 5440232 N 517027 E | Kyanite showing. Kyanite within Middle Proterozoic Aldridge Formation schist. (could be located near the Topaz showing, 082FSE004). | |

## STREAM SEDIMENT SAMPLES FOR THE CRESTON MAP AREA (82F/2)

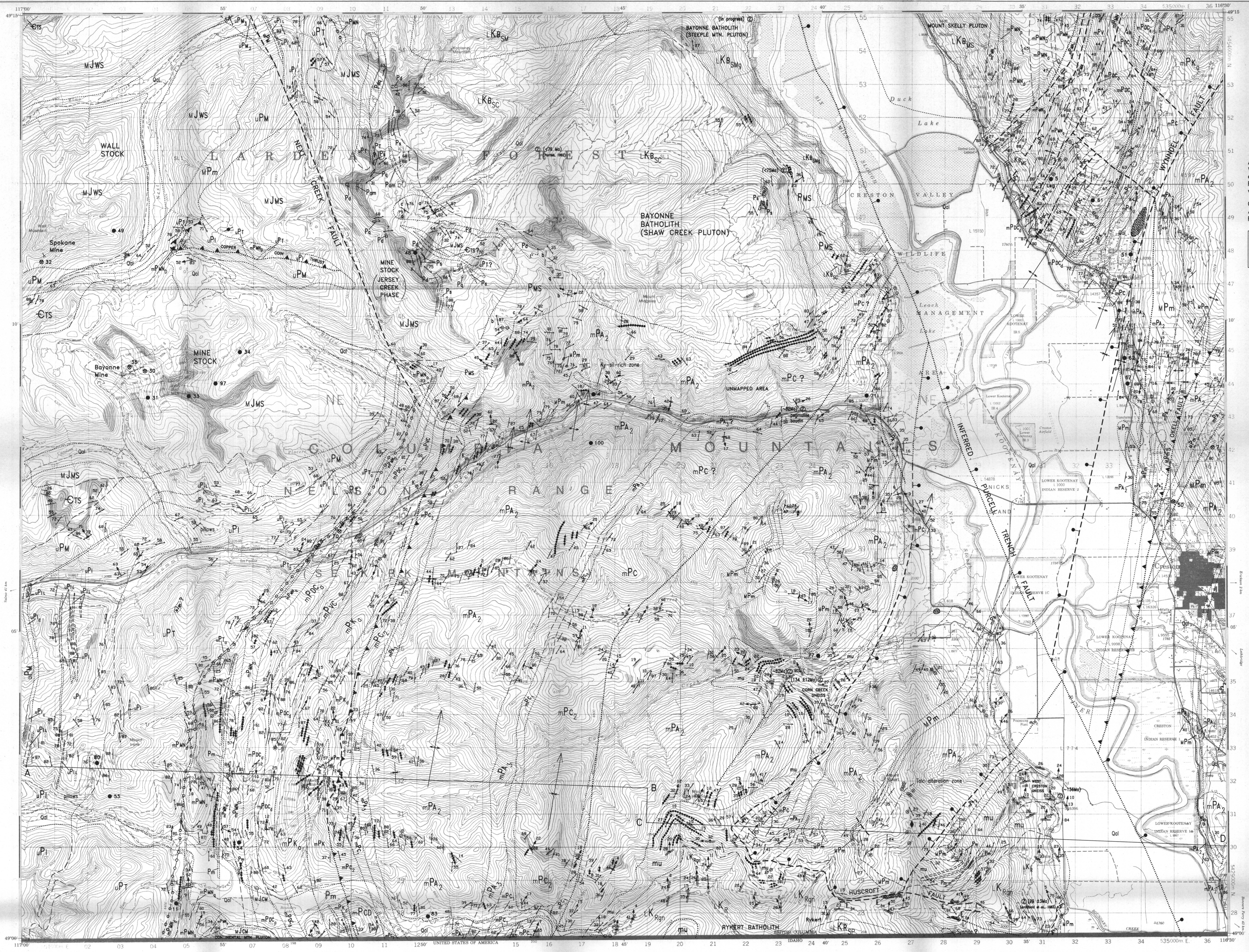
| | | | | Au | Ag | As | Ba | Br | Ca | Co | Cr | Cs | Fe | Hf | Hg | Ir | Mo | Na | Ni | Rb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PPB | PPM | PPM | PPM | PPM | % | PPM | PPM | PPM | % | PPM | PPM | PPB | PPM | % | PPM | PPM |
| **Field No.** | **Easting** | **Northing** | **Area /Detection limit** | 2 | 5 | 0.5 | 50 | 0.5 | 1 | 1 | 5 | 1 | 0.01 | 1 | 1 | 5 | 1 | 0.01 | 20 | 5 |
| GMA94-279 | 502568 | 5436623 | Char Creek | 4 | <5 | 5.5 | 340 | 11 | 2 | 32 | 67 | 3 | 8.69 | 6 | <1 | <5 | <1 | 1.64 | <20 | 41 |
| GMA94-280 | 502069 | 5434777 | Char Creek | <2 | <5 | 3.5 | 250 | 5.8 | 3 | 31 | 82 | 2 | 8.18 | 7 | <1 | <5 | <1 | 1.51 | 73 | 47 |
| GMA94-281 | 502036 | 5434154 | Char Creek | <2 | <5 | 7.8 | 260 | 4.3 | 3 | 36 | 92 | 2 | 7.77 | 5 | <1 | <5 | <1 | 1.55 | <20 | 41 |
| GMA94-282 | 500981 | 5436717 | Char Creek | <2 | <5 | 1.8 | 220 | 10 | 3 | 37 | 120 | 2 | 8.82 | 5 | <1 | <5 | <1 | 1.56 | <20 | <15 |
| GMA94-283 | 503449 | 5437571 | Char Creek | <2 | <5 | 5.7 | 600 | 23 | 2 | 16 | 75 | 4 | 3.88 | 7 | <1 | <5 | <1 | 0.76 | <20 | 84 |
| GMA94-284 | 506355 | 5438652 | Summit Creek W. | 4 | <5 | 2.9 | 480 | 120 | 2 | 11 | 38 | 3 | 3.02 | 6 | <1 | <5 | <1 | 0.75 | <20 | 58 |
| GMA94-285 | 506406 | 5439046 | Summit Creek W. | <2 | <5 | 2.1 | 460 | 12 | 4 | 16 | 45 | 3 | 4.78 | 7 | <1 | <5 | <1 | 1.21 | <20 | 72 |
| GMA94-286 | 507730 | 5438657 | Summit Creek W. | 5 | <5 | 2.1 | 500 | 15 | 2 | 10 | 45 | 4 | 3.07 | 8 | <1 | <5 | <1 | 0.64 | <20 | 75 |
| GMA94-287 | 511474 | 5440465 | Summit Creek W. | 2 | <5 | 1.4 | 520 | 9.8 | 2 | 13 | 52 | 2 | 3.63 | 8 | <1 | <5 | 1 | 0.87 | <20 | 65 |
| GMA94-288 | 518807 | 5443328 | Summit Creek E. | <2 | <5 | 3.8 | 450 | 11 | 1 | 7 | 28 | 6 | 2.22 | 9 | <1 | <5 | <1 | 1.39 | <20 | 86 |
| GMA94-291 | 524118 | 5448478 | S. of Midgeley Ck | <2 | <5 | 2.2 | 800 | 46 | 4 | 5 | 22 | 3 | 2.21 | 7 | <1 | <5 | <1 | 1 | <20 | 57 |
| GMA94-287(Rep.) | 511474 | 5440465 | Summit Creek W. | <2 | <5 | <0.5 | 340 | 9.5 | 2 | 12 | 42 | 3 | 3.12 | 6 | <1 | <5 | <1 | 0.85 | <20 | 45 |
| GMA94-292 | 524496 | 5447987 | S. of Midgeley Ck | 5 | <5 | 1.6 | 960 | 7.1 | 3 | 5 | 13 | 2 | 3.8 | 12 | <1 | <5 | <1 | 2.23 | <28 | 46 |
| GMA94-293 | 525071 | 5447310 | S. of Midgeley Ck | <2 | <5 | 1.6 | 1500 | 24 | 4 | 5 | 19 | 6 | 1.9 | 7 | <1 | <5 | 2 | 0.95 | <20 | 69 |
| DBA94-458 | 520820 | 5428690 | Boundary Creek | 4 | <5 | 1.7 | 540 | 3 | <1 | 5 | 23 | 4 | 1.92 | 12 | <1 | <5 | <1 | 1.52 | <20 | 92 |
| DBA94-459A | 519508 | 5428601 | Boundary Creek | <2 | <5 | <0.5 | 430 | 1.9 | <1 | 3 | 19 | 4 | 1.31 | 8 | <1 | <5 | <1 | 1.14 | <20 | 70 |
| DBA94-459B | 519508 | 5428601 | Boundary Creek | <2 | <5 | <0.5 | 460 | 1.3 | <1 | 3 | 21 | 3 | 1.09 | 7 | <1 | <5 | <1 | 1.11 | <20 | 62 |
| DBA94-460 | 518178 | 5427817 | Boundary Creek | <2 | <5 | 0.8 | 490 | 2.1 | <1 | 10 | 31 | 6 | 2.25 | 9 | <1 | <5 | <1 | 1.21 | <20 | 83 |
| DBA94-461 | 515352 | 5428162 | Boundary Creek | 3 | <5 | <0.5 | 310 | 5.7 | <1 | 7 | 24 | 6 | 1.76 | 8 | <1 | <5 | <1 | 0.64 | <20 | 74 |
| DBA94-462 | 514331 | 5427924 | Boundary Creek | <2 | <5 | 0.7 | 270 | 2.3 | <1 | 5 | 20 | 5 | 1.6 | 8 | <1 | <5 | <1 | 0.57 | <20 | 63 |
| DBA94-463 | 504209 | 5430379 | Monk Creek | <2 | <5 | 2.5 | 620 | 6.7 | <1 | 8 | 27 | 2 | 2.18 | 7 | <1 | <5 | <1 | 0.63 | <20 | 53 |
| DBA94-464 | 505250 | 5433844 | Priest River | <2 | <5 | 2.3 | 400 | 3.7 | <1 | 10 | 23 | 2 | 2.14 | 6 | <1 | <5 | <1 | 0.43 | <20 | 33 |
| DBA94-465 | 510268 | 5438148 | Maryland Creek | 3 | <5 | 2 | 400 | 3.9 | <1 | 9 | 30 | 2 | 2.37 | 10 | <1 | <5 | <1 | 0.43 | <20 | 43 |
| DBA94-466 | 511769 | 5437773 | Maryland /Buckworth | <2 | <5 | <0.5 | 370 | 7.8 | 1 | 11 | 37 | 4 | 2.85 | 6 | <1 | <5 | <1 | 0.67 | <20 | 77 |
| DBA94-467 | 515058 | 5438680 | Buckworth Creek | <2 | <5 | <0.5 | 410 | 4.1 | <1 | 6 | 28 | 6 | 1.91 | 9 | <1 | <5 | 2 | 0.62 | <20 | 83 |
| DBA94-468 | 515605 | 5438233 | Buckworth Creek | <2 | <5 | <0.5 | 310 | 2.9 | 1 | 7 | 30 | 7 | 2.24 | 7 | <1 | <5 | <1 | 0.72 | <20 | 81 |
| DBA94-469 | 517254 | 5436678 | Buckworth Creek | <2 | <5 | <0.5 | 220 | 2.6 | <1 | 4 | 19 | 5 | 1.15 | 7 | <1 | <5 | 1 | 0.39 | 43 | 47 |
| DBA94-470 | 518083 | 5436639 | Buckworth Creek | <2 | <5 | <0.5 | 240 | 3.1 | <1 | 4 | 20 | 6 | 1.24 | 8 | <1 | <5 | <1 | 0.54 | <20 | 53 |
| DBA94-471 | 500674 | 5431290 | Monk Creek | <2 | <5 | 6.8 | 300 | 7.8 | 1 | 22 | 74 | 2 | 5.2 | 7 | <1 | <5 | 2 | 0.89 | 140 | 47 |
| DBA94-472 | 500211 | 5430758 | Monk Creek | 7 | <5 | 3.7 | <50 | 11 | 3 | 26 | 68 | 2 | 6.47 | 6 | <1 | <5 | <1 | 1.36 | <20 | <15 |
| DBA94-471(Rep.) | 500674 | 5431290 | Monk Creek | 3 | <5 | 6.5 | 350 | 7.8 | 1 | 22 | 75 | 2 | 5.2 | 7 | <1 | <5 | <1 | 0.9 | 66 | 49 |
| DBA94-473 | 500785 | 5431288 | Monk Creek | 5 | <5 | 9.8 | 330 | 5 | 3 | 31 | 68 | 2 | 7.16 | 7 | <1 | <5 | <1 | 1.36 | <20 | 55 |
| DBA94-474 | 523939 | 5442959 | Summit Creek E. | <2 | <5 | 1.1 | 860 | 11 | 3 | 14 | 120 | 9 | 3.13 | 8 | <1 | <5 | 4 | 1.15 | 110 | 82 |
| DBA94-475 | 523005 | 5442736 | Summit Creek E. | 4 | <5 | 1.4 | 380 | 9.5 | <1 | 6 | 40 | 11 | 2.07 | 7 | <1 | <5 | <1 | 1.1 | <20 | 84 |
| DBA94-476 | 522295 | 5442548 | Summit Creek E. | 3 | <5 | 2.2 | 310 | 5.6 | <1 | 5 | 33 | 12 | 1.92 | 7 | <1 | <5 | <1 | 0.89 | <20 | 80 |

| | | | | Sb | Sc | Se | Sn | Sr | Ta | Th | U | W | Zn | La | Ce | Nd | Sm | Eu | Tb | Yb | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | g |
| **Field No.** | **Easting** | **Northing** | **Area/Detection limit** | 0.1 | 0.1 | 5 | 100 | 500 | 0.5 | 0.2 | 0.5 | 1 | 50 | 0.5 | 3 | 5 | 0.1 | 0.2 | 0.5 | 0.2 | 0 |
| GMA94-279 | 502568 | 5436623 | Char Creek | 0.8 | 30 | <3 | <100 | <500 | 2.3 | 4.7 | 1.3 | <1 | 181 | 32 | 77 | 29 | 7.5 | 2.7 | 1.4 | 3.5 | 28.98 |
| GMA94-280 | 502069 | 5434777 | Char Creek | 0.7 | 28 | <3 | <100 | <500 | 1.3 | 7.2 | 1.8 | <1 | 154 | 39 | 87 | 38 | 8 | 2.8 | 1.3 | 3.7 | 30.62 |
| GMA94-281 | 502036 | 5434154 | Char Creek | 1 | 31 | <3 | <100 | <500 | 1.5 | 4.4 | 1.7 | <1 | 104 | 27 | 65 | 32 | 7.1 | 2.4 | 1.1 | 3.1 | 31.54 |
| GMA94-282 | 500981 | 5436717 | Char Creek | 0.5 | 34 | <3 | <100 | <500 | 1.2 | 2.6 | 1.9 | <1 | 194 | 21 | 50 | 18 | 5.5 | 2 | 0.9 | 3.5 | 31.75 |
| GMA94-283 | 503449 | 5437571 | Char Creek | 0.6 | 15 | 3 | <100 | <500 | 1.1 | 12 | 5.3 | <1 | 130 | 39 | 85 | 33 | 6.4 | 1.8 | 0.8 | 3.5 | 25.83 |
| GMA94-284 | 506355 | 5438652 | Summit Creek W. | 0.6 | 9.5 | <3 | <100 | <500 | <0.5 | 6.9 | 8.5 | <1 | 111 | 29 | 63 | 27 | 4.8 | 1.4 | <0.5 | 2.6 | 18.69 |
| GMA94-285 | 506406 | 5439046 | Summit Creek W. | <0.1 | 15 | <3 | <100 | <500 | 1.8 | 10 | 3.1 | <1 | 100 | 39 | 80 | 32 | 6 | 1.9 | 0.8 | 3.3 | 33.07 |
| GMA94-286 | 507730 | 5438657 | Summit Creek W. | 0.7 | 10 | <3 | <100 | <500 | 1.2 | 11 | 2.7 | <1 | 93 | 37 | 79 | 30 | 5.4 | 1.4 | 0.9 | 2.9 | 28.24 |
| GMA94-287 | 511474 | 5440465 | Summit Creek W. | 0.2 | 13 | <3 | <100 | <500 | 1.1 | 11 | 2.5 | <1 | 80 | 44 | 89 | 37 | 6.2 | 1.8 | 0.7 | 3.1 | 33.98 |
| GMA94-288 | 518807 | 5443328 | Summit Creek E. | 0.3 | 8.9 | <3 | <100 | <500 | 2.1 | 15 | 5.9 | 4 | 94 | 53 | 120 | 41 | 7.8 | 1.9 | 1.3 | 5 | 32.55 |
| GMA94-291 | 524118 | 5448478 | S. of Midgeley Ck | 0.5 | 6 | <3 | <100 | 640 | 1.3 | 8 | 14 | <1 | 65 | 42 | 87 | 34 | 6.7 | 2.5 | 0.9 | 4.1 | 13.66 |
| GMA94-287(Rep.) | 511474 | 5440465 | Summit Creek W. | 0.2 | 12 | <3 | <100 | 590 | 0.6 | 10 | 2.2 | <1 | 92 | 42 | 72 | 28 | 5.8 | 1.5 | 0.9 | 3.1 | 33.79 |
| GMA94-292 | 524496 | 5447987 | S. of Midgeley Ck | <0.1 | 11 | <3 | <100 | 640 | 4.1 | 31 | 9 | <1 | <50 | 170 | 280 | 99 | 18 | 4.6 | 2.1 | 8 | 30.48 |
| GMA94-293 | 525071 | 5447310 | S. of Midgeley Ck | 0.5 | 6.3 | <3 | <100 | <500 | 1 | 12 | 3.1 | <1 | 175 | 54 | 110 | 44 | 7.1 | 1.8 | <0.5 | 3.4 | 28.84 |
| DBA94-458 | 520820 | 5428690 | Boundary Creek | 0.3 | 6.9 | <3 | <100 | <500 | 2.1 | 18 | 17 | 4 | <50 | 53 | 100 | 38 | 6.7 | 1.6 | 0.9 | 4.1 | 33.03 |
| DBA94-459A | 519508 | 5428601 | Boundary Creek | 0.3 | 5.5 | <3 | <100 | <500 | 1.5 | 12 | 6 | <1 | <50 | 45 | 86 | 37 | 6 | 1.5 | 1 | 3.7 | 29.67 |
| DBA94-459B | 519508 | 5428601 | Boundary Creek | 0.2 | 5.1 | <3 | <100 | <500 | 1.5 | 10 | 5.5 | 3 | <50 | 40 | 76 | 27 | 5.3 | 1.3 | 0.7 | 3.4 | 30.16 |
| DBA94-460 | 518178 | 5427817 | Boundary Creek | 0.3 | 9.1 | <3 | <100 | <500 | 1.5 | 12 | 3.5 | <1 | 78 | 40 | 88 | 30 | 6.2 | 1.5 | 0.9 | 4 | 32.65 |
| DBA94-461 | 515352 | 5428162 | Boundary Creek | 0.4 | 5.7 | <3 | <100 | <500 | 1.2 | 9.6 | 3.2 | 14 | <50 | 47 | 93 | 40 | 7 | 1.7 | 1.1 | 3.6 | 31.22 |
| DBA94-462 | 514331 | 5427924 | Boundary Creek | 0.3 | 4.8 | <3 | <100 | <500 | 1.7 | 9.6 | 2.5 | 7 | <50 | 37 | 83 | 33 | 5.5 | 1.4 | 0.8 | 3.4 | 30.12 |
| DBA94-463 | 504209 | 5430379 | Monk Creek | 0.4 | 6.3 | <3 | <100 | <500 | <0.5 | 7.5 | 1.9 | <1 | 69 | 30 | 65 | 28 | 4.6 | 1.2 | 0.7 | 2.9 | 32.19 |
| DBA94-464 | 505250 | 5433844 | Priest River | 0.5 | 6.6 | <3 | <100 | <500 | <0.5 | 7.5 | 1.7 | 3 | 67 | 30 | 64 | 28 | 4.7 | 1.3 | 0.6 | 2.2 | 30.65 |
| DBA94-465 | 510268 | 5438148 | Maryland Creek | 0.6 | 6.5 | <3 | <100 | <500 | 1.2 | 8.5 | 1.8 | <1 | 53 | 33 | 72 | 28 | 5 | 1.3 | 0.8 | 3.3 | 30.19 |
| DBA94-466 | 511769 | 5437773 | Marylnd Ck/Buckworth C | 0.3 | 8.8 | <3 | <100 | <500 | 1.5 | 8.3 | 2.4 | <1 | 84 | 40 | 71 | 38 | 6.3 | 1.6 | 1 | 3 | 29.82 |
| DBA94-467 | 515058 | 5438680 | Buckworth Creek | 0.1 | 7.6 | <3 | <100 | <500 | 0.7 | 8 | 2 | 3 | 59 | 27 | 58 | 19 | 4.2 | 1 | 0.7 | 3.5 | 30.15 |
| DBA94-468 | 515605 | 5438233 | Buckworth Creek | 0.2 | 7.3 | <3 | <100 | <500 | 1.3 | 8.9 | 2.1 | 4 | 73 | 29 | 60 | 31 | 4.4 | 1.1 | 0.7 | 3.1 | 33.05 |
| DBA94-469 | 517254 | 5436678 | Buckworth Creek | 0.2 | 4.2 | <3 | <100 | <500 | 0.6 | 6.8 | 2.2 | 3 | <50 | 27 | 61 | 22 | 4 | 1 | 0.6 | 3.4 | 32.13 |
| DBA94-470 | 518083 | 5436639 | Buckworth Creek | 0.3 | 5 | <3 | <100 | <500 | 1.2 | 7.1 | 2.5 | 3 | <50 | 29 | 65 | 23 | 4.5 | 1.1 | 0.7 | 3.6 | 30.58 |
| DBA94-471 | 500674 | 5431290 | Monk Creek | 0.7 | 17 | <3 | <100 | <500 | 1.3 | 12 | 2.8 | <1 | 109 | 56 | 110 | 45 | 8.2 | 2.6 | 1.4 | 3.3 | 31.08 |
| DBA94-472 | 500211 | 5430758 | Monk Creek | 0.7 | 29 | <3 | <100 | <500 | 2.4 | 5.1 | 1.5 | <1 | 121 | 37 | 84 | 35 | 8 | 2.9 | 1.3 | 3.7 | 29.16 |
| DBA94-471(Rep.) | 500674 | 5431290 | Monk Creek | 0.5 | 18 | <3 | <100 | <500 | 1 | 12 | 2.7 | <1 | 148 | 56 | 110 | 44 | 8.4 | 2.6 | 1.2 | 3.3 | 29.96 |
| DBA94-473 | 500785 | 5431288 | Monk Creek | 0.8 | 27 | <3 | <100 | <500 | 1.2 | 7.6 | 2.1 | <1 | 132 | 45 | 97 | 39 | 8.9 | 3.1 | 1.6 | 3.8 | 32.8 |
| DBA94-474 | 523939 | 5442959 | Summit Creek E. | <0.1 | 13 | <3 | <100 | 610 | 4 | 16 | 3.6 | <1 | 102 | 100 | 190 | 75 | 10 | 2.8 | 1.3 | 3.9 | 30.4 |
| DBA94-475 | 523005 | 5442736 | Summit Creek E. | 0.3 | 7.7 | <3 | <100 | <500 | 2.7 | 13 | 3.5 | 5 | 82 | 45 | 95 | 34 | 6.4 | 1.5 | 1.1 | 4.3 | 31.24 |
| DBA94-476 | 522295 | 5442548 | Summit Creek E. | 0.5 | 6.8 | <3 | <100 | <500 | 3 | 13 | 3.2 | 6 | 70 | 43 | 91 | 36 | 6.2 | 1.5 | 0.9 | 4.4 | 31.9 |

Notes:

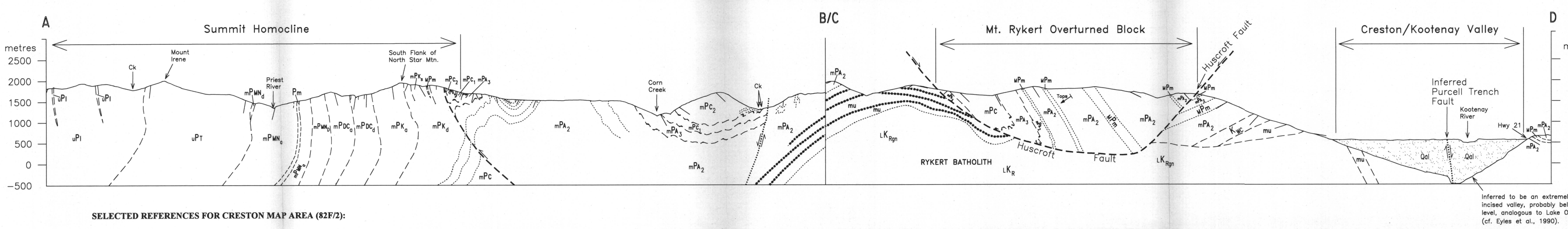
Analytical method: INA- instrumental neutron activation, performed by Activation Laboratories, Ancaster, Ontario.

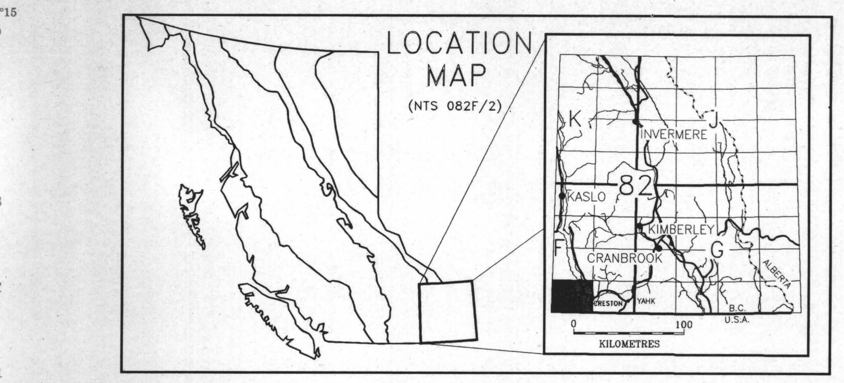
For details on analytical procedures contact Ray Lett, Geochemist, at (604) 952-0396.




Topographic base map (Creston, 82F/2) published by the Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, Ontario, 1981. North American Datum 1927; Transverse Mercator Projection, UTM Zone 11. Magnetic declination in 1995 was approximately 18° east of true north.

## Schematic Cross-section





ACKNOWLEDGMENTS:
We have benefited from geological discussions with Doug Anderson, Ron Granger, Dave Wiklund, and John Reesor. Field visits by Don Winston and Nate Hathaway provided additional insights. Previous mapping of the Summit Creek area by Keith Glover (1978) and John Reesor (1993) was used extensively and incorporated in this map.


COMMENTS OR CORRECTIONS:
Any improvements or comments concerning this map would be appreciated.

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## SYMBOLS

- Geological boundaries (defined, approximate, assumed)
- Unconformity (defined, approximate, assumed)
- High angle fault (approximate, assumed)
- Normal fault (approximate, assumed; solid dot on downthrown side)
- Thrust fault (approximate, assumed; teeth in overlying plate)
- Limit of Quaternary cover
- Amphibolite sill
- Granitic sill

- Measured fault plane
- Bedding with tops observed (inclined, overturned)
- Bedding (inclined, vertical); bedding parallel to foliation
- Dike, vein
- Foliation: schistosity or fracture cleavage (inclined, vertical)
- Axial plane of minor fold (inclined, vertical)
- Mylonitic foliation; mylonite foliation with stretching lineation
- Synform, antiform

- Fold axis of minor symmetric fold, m-fold
- Fold axis of minor asymmetric fold
- Crenulation fold axis
- Lineations (undefined, stretching)
- Glacial striations

- Adit, trench
- Diamond drill hole
- MINFILE mineral occurence (082FSE...) — 67, 7
- Tourmalinite fragmental/breccia
- Stromatolites

- Gravel pit
- Zircon U-Pb age determination locality — (82Ma)
- Detailed section line
- Schematic cross-section:
- Projected bedding dip
- Formlines

### METAMORPHOSED STRATA OF UNCERTAIN AFFINITY

**PMS** Semi-pelitic schist (s), biotite-rich schist (b), psammitic schist (p), calc-silicate (c), marble (d), quartzite (q), amphibolite (a). Coarse-grained schist along margin of Shaw Creek pluton.

**Pd** Dolomitic marble, calc-silicate marble, garnet-actinolite-epidote skarn.

**Pam** Amphibolite.

**Pq** White to light grey quartzite, quartzofeldspathic arenite.

**Pdq** Intercalated dolomitic calc-silicate and dolomite.

**Ps** Semi-pelitic schist, rusty brown weathering meta-arenite.

## INTRUSIVE ROCKS

### EOCENE (?)

**CHLORITIC BRECCIA ZONE**

**Ebx** Chloritic microbreccia, cataclasite, mylonitic granitoid, pale green, chlorite-sericite-clay altered leucocratic granitoids.

### CRETACEOUS

**BAYONNE BATHOLITH**

**LKBsc** **SHAW CREEK PLUTON:** Biotite hornblende granite; medium grained, white to grey; commonly potassium-feldspar megacrystic; biotite granodiorite. Zircon U-Pb date ~76 Ma (Parrish, 1992); and < 75 Ma (D. Davis, written communication, 1995).

**LKBMS** **MOUNT SKELLY PLUTON:** Hornblende biotite granite; pale grey to white, massive, medium-grained, potassium-feldspar megacrystic; local magmatic layering.

**KBsMg** **STEEPLE MOUNTAIN PLUTON:** Biotite muscovite granodiorite, monzogranite and tonalite, commonly foliated, locally gneissic. Also known as "Kootenay Landing granite" (Barrett, 1982).

**RYKERT BATHOLITH**

**LKR** Medium grained, light grey, biotite granite, monzogranite and granodiorite. Includes Shorty Peak pluton and gneissic rocks. Zircon U-Pb date of 99 ± 3 Ma (D. Davis, written communication, 1995).

**NOTE:** Previously referred to as Kanisku Batholith (Archibald et al., 1984) and Selkirk Crest Complex (Reesor, 1993).

**LKRsp** **SHORTY PEAK PLUTON:** Medium grained monzogranite and granodiorite, commonly massive (Miller, 1983).

**LKRgn** **GNEISSIC ROCKS:** porphyroblastic granitic gneiss (Miller, 1983), mylonitic to foliated granite. Compositionally and texturally varied.

**CORN CREEK AND WEST CRESTON GNEISS**

**Kcc** **CORN CREEK GNEISS:** Foliated to gneissic granite interlayered with pegmatite; biotite-muscovite-garnet granite with potassium-feldspar megacrysts. Heterogeneous composition and grain size. Smoky quartz. Series of granitic sheets. Zircon U-Pb dates of 82 Ma and 134 ± 12 Ma (D. Davis, written communication, 1995).

**Kwc** **WEST CRESTON GNEISS:** Similar to Corn Creek gneiss. Zircon U-Pb date of about 136 Ma (D. Davis, written communication, 1995).

**Kgn** Massive, medium-grained to foliated biotite granite and biotite-muscovite granite. Sill-like geometry. Biotite-muscovite-garnet pegmatite layers. Rusty brown psammitic and biotite-muscovite schist as schlieren and intercalated with granite.

**mu** **"MIXED UNIT" (LIT-PAR-LIT GNEISS):** Meta-wacke and semi-pelite (middle Aldridge formation) intruded by mylonitic granite and pegmatite sills.
Sills shown as

### MIDDLE JURASSIC

**MINE, SUMMIT AND WALL STOCKS**

**MJMS** **MINE STOCK:** Massive, medium-grained, biotite hornblende epidote granodiorite, quartz monzodiorite. Mafic xenoliths (<10%) locally. **MJgn** = Granitic body exposed 2 km south-southwest of the confluence of Summit - Bayonne creeks.

**MJWS** **WALL STOCK:** Biotite hornblende epidote granodiorite (LeClair, 1988).

**MJCM** **CONTINENTAL MOUNTAIN PLUTON:** Massive, biotite tonalite, trace hornblende, secondary muscovite and epidote (Miller, 1984). Zircon U-Pb data suggests a > 168 Ma date (J.L. Wooden, personal communication, 1994).

### PROTEROZOIC

**Pm** Narrow (<10 m), mafic sills and/or dikes in strata younger than the Aldridge Formation. Disseminated magnetite in some sills.

**MPm** "Moyie Sills": Dark green to black, gabbro sills. Amphibolite, garnet amphibolite. Commonly discontinous due to deformation. Locally cut by quartz and quartz-carbonate veins. Zircon U-Pb dates circa 1467 Ma east of map area (Anderson and Davis, 1995).

BC Ministry of Energy, Mines and Petroleum Resources

1895 - 1995 100 YEARS OF GEOLOGICAL SURVEYING

Geological Survey Branch
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# GEOLOGY OF THE CRESTON MAP AREA, SOUTHEASTERN BRITISH COLUMBIA

NTS 82F/2


By D.A. Brown, P.T. Doughty, and P. Stinson

Additional geology by D.A. Archibald, D.A. Barron, and G.K. Manson
U–Pb dating by D.W. Davis, Royal Ontario Museum
Digitizing by L.D. Fortner


Kilometres 0 — 4 Kilometres
SCALE 1 : 50 000

## LAYERED ROCKS

### QUATERNARY

**Qal** Unconsolidated outwash, alluvium, colluvium and glacial till.

### LOWER CAMBRIAN AND UPPER PROTEROZOIC (HADRYNIAN)

**CTS** **THREE SISTERS FORMATION**
Quartzo-feldspathic grit, blue quartz grit, quartzite, quartz pebble conglomerate, phyllite. Light grey weathering and resistant.

### UPPER PROTEROZOIC (Hadrynian)

**WINDERMERE SUPERGROUP**

**HORSETHIEF CREEK GROUP**

**uPM** **MONK FORMATION**
Fine to coarse-grained pelitic schist; muscovite-biotite schist with garnet, andalusite and staurolite. Minor quartz grit, micaeous quartzite, quartz siltstone, laminated limestone. Dark grey to brown and recessive weathering.

**$uPM_3$** Grey phyllite, black graphitic phyllite, quartzite, grit; minor quartz-pebble conglomerate (LeClair, 1988; Reesor, 1993).

**$uPM_2$** Laminated limestone and marble (LeClair, 1988; Reesor, 1993).

**$uPM_1$** Grey phyllite, graphitic phyllite and marble (LeClair, 1988; Reesor, 1993).

**uPI** **IRENE FORMATION**
Black to dark green, massive to schistose tholeiitic basalt; mafic volcaniclastic rocks locally with carbonate clasts and hyloclastite ($uP_IT$); pillow basalt and massive flows; gabbroic sills (?); phyllite; minor dolomite horizons (**$uPI_L$**). (762 ± 44Ma, Sm/Nd Devlin et al., 1989).

**$uPI_t$** Mafic lithic lapilli tuff with local but abundant limestone clasts. Fine disseminated magnetite euhedra.

**$uPI_c$** Polymictic cobble to boulder conglomerate, dominated by subrounded dolomite and rounded quartzite clasts, rare brecciated dolomite clasts. Mauve to grey argillaceous to dolomitic wacke matrix. Local quartz pebble conglomerate to wacke. Resembles Toby Formation conglomerate. Rare intercalated dolomite and laminated white limestone horizons, and in-situ limestone breccia.

**$uPI_l$** Limestone, dolomite, limestone breccia/conglomerate.

**$uPT_c$** **TOBY FORMATION**
Buff weathering polymictic conglomerate; conglomeratic quartzite; phyllite, impure quartzite, pale green wacke. Dominately dolomite and quartzite clasts, rare andesite fragments locally. Variable amounts of strain from massive to foliated with flattened clasts to chlorite-sericite schist. Grey, brown, green and mauve. Matrix to framework-supported. Pebble to boulder-sized clasts. Local dolomite horizons.

**$uPT_a$** **"DROPSTONE UNIT"**
Dark grey to black, argillite, pyritic argillite, graphitic argillite, with quartzite and dolomite pebbles supported in an argillite matrix, clasts are interpreted as possible dropstones. Siltstone laminations. Fissile.

### MIDDLE PROTEROZOIC (Helikian)

**PURCELL SUPERGROUP**

**MOUNT NELSON FORMATION ***

**mPMN** Undivided sedimentary rocks.

**$mPMN_p$** Phyllitic argillite and siltstone with flattened siliceous quartz veins (or clasts?).

**$mPMN_c$** Calc-silicate.

**$mPMN_d$** Upper dolomite: Buff to grey dolomite, dolomite with quartz lenses and pods. Minor blue-white, coarse to medium-grained quartzite and quartz grit horizons up to 2 m thick.

**$mPMN_a$** Thin bedded to laminated argillite, phyllitic argillite and siltstone. Brown phyllite with quartz pebbles and granules. Mauve to purple wacke and phyllitic siltstone. Pale green sericitic phyllite. Intercalated quartz grit of unit **mPMNq**.

**$mPMN_q$** Medium to thin-bedded quartzite, white, grey and green, vitreous, blue quartz granules, rare white potassium-feldspar fragments; argillite; argillaceous siltstone. Medium-bedded, wavy, lenticular bedding. (possible equivalent to the Buffalo Hump Formation, Deer Trail Group, Washington; cf. Miller and Whipple, 1989).

**$mPMN_D$** Lower dolomite: Buff dolomite and minor grey limestone, thin bedded to laminated.

**VOLCANIC UNIT**

**mPV** Basalt to andesite flows (or sills?), dull green to olive volcanic wacke, siltstone. Thin- to medium-bedded.

**DUTCH CREEK FORMATION *** (LaFrance Creek Group of Reesor, 1993)

**mPDC** Undivided sedimentary rocks.

**$mPDC_a$** Calcareous phyllite, laminated to microlaminated argillite, phyllitic siltstone, sericite schist. Lenticular sandstone beds.

**$mPDC_d$** Dolomite, dolomitic phyllite, clean dolomite with stromatolites, minor quartzite, mauve phyllite, argillite and siltstone. Dolomite breccia layers at the Leg property.

**$mPDC_s$** Pale green chlorite-sericite phyllite with distinctive but minor mauve quartz arenite beds up to 2 m thick.

**"VAN CREEK" FORMATION EQUIVALENT (?) ***

**mPVC** Pale apple green, laminated, sericitic siltite and argillaceous siltite. Commonly very fine disseminated magnetite octahedra, locally pyrite cubes. Minor ripple marks, lenticular bedding, rare flattened mudcracks. Note: resembles Van Creek Formation of the eastern Purcell Supergroup, however, appears to lie above or within the Dutch Creek Formation.

**KITCHENER FORMATION *** (Coppery Creek Group of Reesor, 1993)

**mPK** Undivided sedimentary rocks.

**$mPK_d$** Dolomitic siltstone, dolomitic argillite, dolomite, commonly buff-weathering; argillite, siltstone, quartzite; green tinged dolomictic siltstone near base.

**xxxx** Dolomite breccia, angular dolomite fragments, rare argillite and subrounded quartz clasts. Rough pitted weathered surface.

**$mPK_s$** Sericitic arenite, siltstone, tan and grey phyllite.

**$mPK_a$** Graphitic phyllite, pyritic, rusty brown weathering.

**CRESTON FORMATION**

**mPC** Undivided sedimentary rocks. Grey to silvery grey, thinly-layered muscovite-rich schist.

**$mPC_3$** **UPPER**: green siltstone; black or purple argillite and siltstone. (not identified in map area)

**$mPC_2$** **MIDDLE**: light grey, mauve, thin- to medium-bedded quartz arenite, quartz wacke, lesser grey siltite and phyllitic argillite. Rare lenticular bedding, ripples, cross-bedding and shrinkage (mudcracks) cracks.

**$mPC_1$** **LOWER**: waxy green, thin-beddded to laminated phyllitic argillite and siltite, green siltstone. Sedimentary structures rarely preserved.

**ALDRIDGE FORMATION**

**mPA** Undivided sedimentary rocks.

**$mPA_3$** **UPPER**: rusty brown weathering phyllitic argillite, silty argillite, siltite laminae. Dark rusty brown fissile schist/phyllite in higher metamorphic grade areas.

**$mPA_2$** **MIDDLE**: medium to thin-bedded, grey to rusty weathering quartzofeldspathic wacke, intercalated argillite and siltite. Actinolite-garnet-rich spheres of bleached wacke (meta-concretions?).

**$mPA_1$** **LOWER**: siltstone and quartzite. (not identified in map area)

* NOTE: Stratigraphic correlations west of the Okell Fault with less deformed strata to the east are considered tentative due to structural and metamorphic overprints.

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Location of Creston map area relative to previously published geologic maps.