YUKON GOLD-SILVER FILE

J.A. MORIN
Exploration and Geological Services Division
Northern Affairs Program
Indian and Northern Affairs Canada
Whitehorse, Yukon

November, 1989

It is recommended that references to this report be made in the following form:

MORIN, J.A., 1989. Yukon Gold-Silver File; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1989-3.

TABLE OF CONTENTS

YUKON GOLD-SILVER FILE

INTRODUCTION

The Government of Canada manages mineral resources in Yukon and Northwest Territories through the Northern Affairs Program of the Department of Indian Affairs and Northern Development. Within the Program two mineral resource directorates exist based in Yellowknife, Northwest Territories and Whitehorse, Yukon. This file should be of particular and current interest to the mining industry since its compilation was done by a geologist with experience in Yukon geology and a strong interest in gold and silver deposit settings: Dr. J.A. Morin, former Chief Geologist, Exploration and Geological Services Division of the Mineral Resources Directorate, Yukon.

Dr. Morin was hired in 1975 as District Geologist at Indian and Northern Affairs in Whitehorse, and in 1982 he became Chief Geologist. While at Northern Affairs (1977-1988), Dr. Morin contributed in many ways to the further understanding of economic mineral deposits in Yukon, including verbal and written papers, and supervising many projects (university and other) funded by the department. During 1987-88, Dr. Morin compiled the Yukon Gold-Silver File on a "change in work location" at the Geological Survey of Canada in Vancouver. Subsequently, in February, 1988, he was hired by INCO Gold Company in Vancouver, B.C.

GOLD-SILVER FILE

Yukon Gold-Silver File is an inventory of gold- and silver-bearing mineral deposits and occurrences in Yukon. It follows the **1984 Open File entitled Gold-Silver Deposits and Occurrences in Yukon Territory** by J.A. Morin and D.A. Downing. Other sources of information include: 1) INAC Reports (those produced by Indian and Northern Affairs Canada), including a) Yukon Exploration (and Geology) reports up to and including Yukon Exploration 1985-86 (noted as YEX, YEG and YGE), and b) Mineral Industry Reports (MIR); 2) preceding Mineral Industry Reports and other geological reports by the Geological Survey of Canada (G.S.C. papers, memoirs, bulletins and maps); 3) assessment reports (only non-confidential information is included) filed by mineral exploration companies with Indian and Northern Affairs Canada (this is not a complete listing, check mining assessment report index); 4) university theses; 5) personal communication with mineral explorationists and prospectors; and 6) data accumulated by property investigations by J.A. Morin and D.S. Emond (until August, 1987).

Further information on the properties listed may be available from the National Mineral Inventory (NMI), a looseleaf file maintained by Department of Energy, Mines and Resources. A copy of this file is available for viewing at the Map Sales counter at 200 Range Road, Whitehorse. An accurate and comprehensive inventory of Yukon mineral showings is also maintained by Archer, Cathro and Associates (1981) Ltd (the Northern Cordillera Mineral Inventory, N.C.M.I.) and is available from them on a fee and subscription basis.

File Format

Text

The Gold-Silver File is divided geographically into NTS sections (e.g., 95 C, 95 D, 95 E, 105 A, ...) similar to the Yukon Exploration volume. Within each NTS section, is a listing of each gold or silver property, or property with minor gold and/or silver in order of YEX number (those used in the Yukon Exploration volume). Header information includes YEX number, followed by the occurrence name, and the 1:50,000 NTS map sheet (see example below).

Example:
95 C - NTS map sheet number (1:250,000);
4. - mineral occurrence number from Yukon Exploration 1988; **TING** - corresponding mineral occurrence name; **(95 C 5)** - NTS map sheet number (1:50,000).

Each property listed has the following types of data included: 1) **Geology** - a short geological description; 2) **Geochemistry** - a summary of most relevant geochemical or assay information, and/or new geochemical analyses by Morin; **Reserves**; and/or **Production**; 3) **Classification** - deposit type (discussed below); 4) **References**; and some have 6) **Comments**. If more recent information is available (since the compilation of this file), especially from the 1987 and 1988 Yukon Exploration publications, these references are listed as "Recent References".

An index is provided at the back of the book in order to simplify finding specific properties.

Maps

The file is accompanied by a volume of NTS map sheets. These are reduced 1:250,000 scale topographic maps which show the gold and silver occurrences described in this file. The solid circle symbols on the maps are located as close as possible to the showing(s) on each property. Each mineral occurrence on a given map sheet is assigned a unique identification number which is the same as that used in Yukon Exploration 1988.

ACKNOWLEDGEMENTS

The **Yukon Gold-Silver File** was compiled and written by Dr. J.A. Morin. Much of the information was obtained from assessment reports and from direct communication with mining and mineral exploration companies. The assistance and contribution of those companies and individuals is gratefully acknowledged.

The Geological Survey of Canada graciously supplied office space and computer support for the project. Particular thanks go to Dr. R.B. Campbell for facilitating the change in work location, Drs. D.J. Tempelman-Kluit and K.M. Dawson for their advice and encouragement and Ms. Bev Vanlier for excellent word processing support.

D. Emond and S. Poole prepared the maps, and edited and updated the Open File. Thanks also to T. Bremner for assistance in editing maps and advising on production.

A special thanks also to Drafting Services personnel, Northern Affairs, Yukon for providing high quality mineral occurrence maps for this open file, as well as advice on production.

PROCESS CLASSIFICATION OF YUKON GOLD-SILVER OCCURRENCES

by J.A Morin

This file brings together mineral occurrences that contain gold and/or silver mainly in excess of 1 g/t Au and/or 30 g/t Ag. The occurrences have been classified according to a general scheme presented below.

I. TECTONO-HYDROTHERMAL
- Hydrothermal Breccias
- Volcanogenic Massive Sulphides
- Synsedimentary Massive Sulphides

II. METAMORPHO-HYDROTHERMAL
- Veins
- Disseminations

III. MAGMATO-HYDROTHERMAL - Levels in the Intrusive Environment:

KATAZONAL
- Batholithic Association: Veins/Skarn
  a. copper-iron b. lead-zinc

MESOZONAL
- Pluton-proximal: Veins/Skarns
  a. copper-iron b. lead-zinc

HYPABYSSAL - SUBVOLCANIC - EPIZONAL
- Intrusive-hosted: Veins/porphyry disseminations/stockwork
- Intrusive-proximal/distal: Veins/replacements
  a. iron-arsenic b. lead-zinc

SHALLOW TO SURFACE
- Volcanic-hosted: Veins/disseminations/stockwork/breccia
- Volcanic-associated: Veins/disseminations/stockwork/breccia

Three general processes are responsible for generating precious metal-bearing hydrothermal fluids: tectonism, metamorphism and magmatism. These first-order geological processes are responsible for gold-silver mineralization in Yukon.

The classification scheme priorizes different geological processes and features from most important to successively less important. While it attempts to be objective, subjective assessments have been made where necessary. The classification follows an order: (1) determinant process, (2) associated geological environment, (3) style of mineralization and (4) variation in metal composition. This sequence follows a thinking scenario used by explorationists in selecting exploration targets, i.e. "what does one think of first when searching for a certain type of mineralization?." This is a working framework which will change somewhat as new discoveries and insights are made.

I TECTONO-HYDROTHERMAL

Tectonism is the guiding determinant process responsible for mineralization in this group. None of the occurrences are gold-silver dominant, rather they are commonly iron or base metal-rich. They

formed from Mid-Proterozoic through to the Triassic and largely reflect faulting along the margins of paleo-North America and some localized rifting.

The Wernecke hydrothermal breccias are bodies of breccia that intrude mid-Proterozoic rocks in north-central Yukon. They form in linear clusters trending northwesterly to westerly that suggest a fundamental structural control, probably faulting. The bodies have a geochemical signature of U, Cu, Co, Fe, Ba, Au and are commonly associated with intensive Fe and Na metasomatism. Gold mineralization is variable, spotty and erratic, but of spectacularly high grade.

Volcanogenic and synsedimentary massive and stratiform sulphides are primarily controlled by local extensional tectonic activity resulting in faults and fractures cutting the seafloor and focusing the ore fluids.

II METAMORPHO-HYDROTHERMAL

This type of mineralization, common in the Klondike area, is characterized by quartz veins and disseminations with rare to minor sulphides, minor carbonate and electrum. Host rocks are cut by structures which had access to hydrothermal fluids produces during metamorphic devolatilization. The fluids tended to move toward lower temperature and lower pressure environments along available favourable structural pathways, i.e., mainly faults and fractures. Wallrocks commonly show phyllic and carbonate alteration.

A spatial association exists between gold mineralization and serpentinite and its carbonatized and phyllically altered form (listwanite). Major shear stresses are preferentially localized along and within relatively incompetent rocks such as serpentinite in the same way as migrating aqueous fluids are so localized. This spatial coincidence can be useful as an exploration guide for gold mineralization.

III MAGMATO-HYDROTHERMAL

Several magmatic episodes have taken place throughout Yukon. However, only the following three post-accretionary plutonic events and tectonic assemblages are known to be associated with precious metal mineralization:

	Plutonic Event	Age	Tectonic Assemblage
1)	Mid-Cretaceous	130-84 Ma	South Fork
2)	Late Cretaceous	85-64 Ma	Carmacks
3)	Early Tertiary	64-40 Ma	Kamloops

The mid-Cretaceous event is widespread throughout Yukon as an eastern blet and a western belt of intrusives. The volcanic counterparts in central and eastern Yukon are South Fork volcanics and in southwestern Yukon, the Mount Nansen volcanics. Both groups consist of felsic ash flows with associated subsidence cauldrons.

Magmatism is responsible for the generation of thermal convection cells and resultant hydrothermal solutions. Two main factors impinge on this overall important process: 1) relative level within the intrusive environment and 2) proximal to the system-generative igneous rocks.

The discussion below addresses the nature of each intrusive level and within that, the effects and implications of proximal versus distal positioning in the mineralization continuum.

LEVELS IN THE INTRUSIVE ENVIRONMENT

KATAZONAL

Batholithic Association

The deepest level is represented by the batholithic terranes. The batholithic terrane in southeastern Yukon is made up of plutons that intruded in great volumed and consequently established the surrounding structure. The main structures of note here are normal faults. District wide crustal heating would tend to homogenize the thermal gradient and limit sharp changes in the physicochemical environment conductive to mineralization. Passive mineralization is predominant as contact skarns and replacement deposits. A variety exists but most are rich in lead-zinc-silver and gold is minor.

MESOZONAL

Pluton-Proximal Association

In the Selwyn Thrust Belt, the size and abundance of plutons decreases markedly away from the batholithic terrane. The plutons do not control their surrounding structural environment.

The level of intrusive environment is mesozonal and allowed for the development of hydrothermal systems which bear some spatial relationship to their generative plutons and for distinct local alteration of the regional geotherms. Classic among the systems investigated is the Keno Hill district where vertical faults host rich silver-lead-zinc mineralization. The Roop Lakes Stock in the district demonstrates the potential influence a stock may have on alteration and mineralization of surrounding rocks (Lynch, 1986). This local influence tends to be common rather than the exception and numerous examples exist: Potato Hills Stock in the Dublin Gulch District, Antimony Mountain Stock and Tombstone Mountain Stock, Mount Armstrong Stock, Dragon Lake Stock.

These systems exploited already established structures as a plumbing system and much of the mineralization in this region involves usage of thrust and normal faults. Typically, the stress region associated with pluton emplacement would involve extension along proximal normal faults and compression along proximal low angle faults (thrusts) along with corresponding respective enhancement and restriction of fluid flow. Accordingly, normal faults created by crustal adjustments to pluton intrusion would be mineralized with proximal hydrothermal products whereas the area distal to the intrusion would tend to have thrust faults exploited as hydrothermal conduits and consequently be potential hosts to distal hydrothermal products. Examples of this favourable situation with a large stock, a volume of quartzite, proximal normal faults and distal thrust faults are in the Keno Hill district and in the Tombstone Range.

Skarns commonly form in this environment. Precious metal bearing examples include Whitehorse Copper, Jackson Creek, MARN, WAYNE and Franklin Creek. Meinert's (1986) work on Whitehorse Copper demonstrated that retrograde altered skarn was commonly gold enriched, especially so where associated with sulphide minerals. Retrograde alteration in Yukon skarns commonly involves actinolite, epidote, magnetite, hematite, pyrite, pyrrhotite and chalcopyrite.

HYPABYSSAL - SUBVOLCANIC - EPIZONAL

Intrusive-hosted

This level is commonly represented by dykes, sills and plugs of felsic rocks, commonly porphyritic, whose path of intrusion is guided by pre-existing tectonic elements such as faults and fractures. Mineralization is mainly restricted to the intrusions and occur as veins, porphyry disseminations and stockwork with minimal alteration in the country rocks. Examples include the quartz porphyry dyke at the WAYNE, the felsic porphyry body at the BRIC/NEVE, the monzonite porphyry body at the IDA, felsic dykes at the NUCLEUS and the intrusive breccia at the ANTONIUK.

Intrusive-Proximal/Distal

The highest level affected by intrusives is the area above buried intrusives. This zone is not distinguished by actual presence of the intrusive rocks but rather by relatively subtle metamorphic and alteration effects within the country rocks such as porphyroblastesis, hornfelsing, veining and halo

disseminations. Areas where buried intrusives are suspected include the following: Kalzas Twins, Kathleen Lakes (south), Mount Haldane, Oliver Creek, PLATA, FIDDLER, Ketza River Uplift, MOUNT HUNDERE, Seagull Creek Uplift, Two Buttes, PORKER, MINDY, BAR, Rusty Springs and MIDWAY. A lateral decrease in pressure-temperature conditions occur from the mesozonal pluton-proximal environment to the epizonal intrusive proximal/distal environment.

Districts and occurrences where thrust faults have been used as fluid passageways include Quartz Lake, Ketza Uplift, Seagull Uplift, Davidson Range, Beaver River, Kathleen Lakes, Nadaleen River, Coal Creek Dome and Silver City. Commonly, the silver/lead ratio of thrust-related occurrences is much less than those in vertical situations. This may be due to a relatively homogeneous pressure environment in contrast to the near vertical situation in pluton proximal normal faults where drastic pressure differences might allow for boiling or rapid degassing (Lynch, 1987). Thrust faults also offer a larger surface area along which fluid may flow. Much associated brittle deformation results in good permeability in the deformed footwall and hanging wall rocks available for mineralization. Accordingly, thrust fault-related mineralization is less discrete than in pluton-proximal veins, more dispersed and of lower grade. Abbott's (1986) discussion of the relationship between the Seagull and Ketza Uplifts and epigenetic mineral deposits in the Pelly Mountains graphically demonstrates the area of potential hydrothermal influence proximal and distal to subjacent plutons.

SHALLOW TO SURFACE

Volcanic-Hosted

Continental volcanism occur in post-accretionary Yukon is associated with local epithermal precious metal mineralization. This volcanism includes the mid-Cretaceous Mount Nansen group and South Fork groups, the late Cretaceous Carmacks group and the Paleocene to mid-Eocene Skukum group.

Volcanic centres are the common areas where precious metal mineralization occurs and these include the Skukum Volcanic Complex, the Bennett Lake Cauldron Complex, Montana Mountain and the Mount Nansen area. Styles of mineralization in this class are typical epithermal: veins (eg. Mt. Skukum Mine), disseminations, stockwork and breccia (eg. Grew Creek). Metals area mainly gold and silver with base metals rare to minor.

Volcanic-Associated

This group of occurrences is hosted in basement and cover rocks within areas affected by volcanism. The style and types of mineralization are very similar to that hosted in the volcanic rocks and appears to be different mainly in the nature of the host rock. Areas and occurrences within this classification include the Wheaton area, the RAIN and Caribou Creek in the Dawson Range.

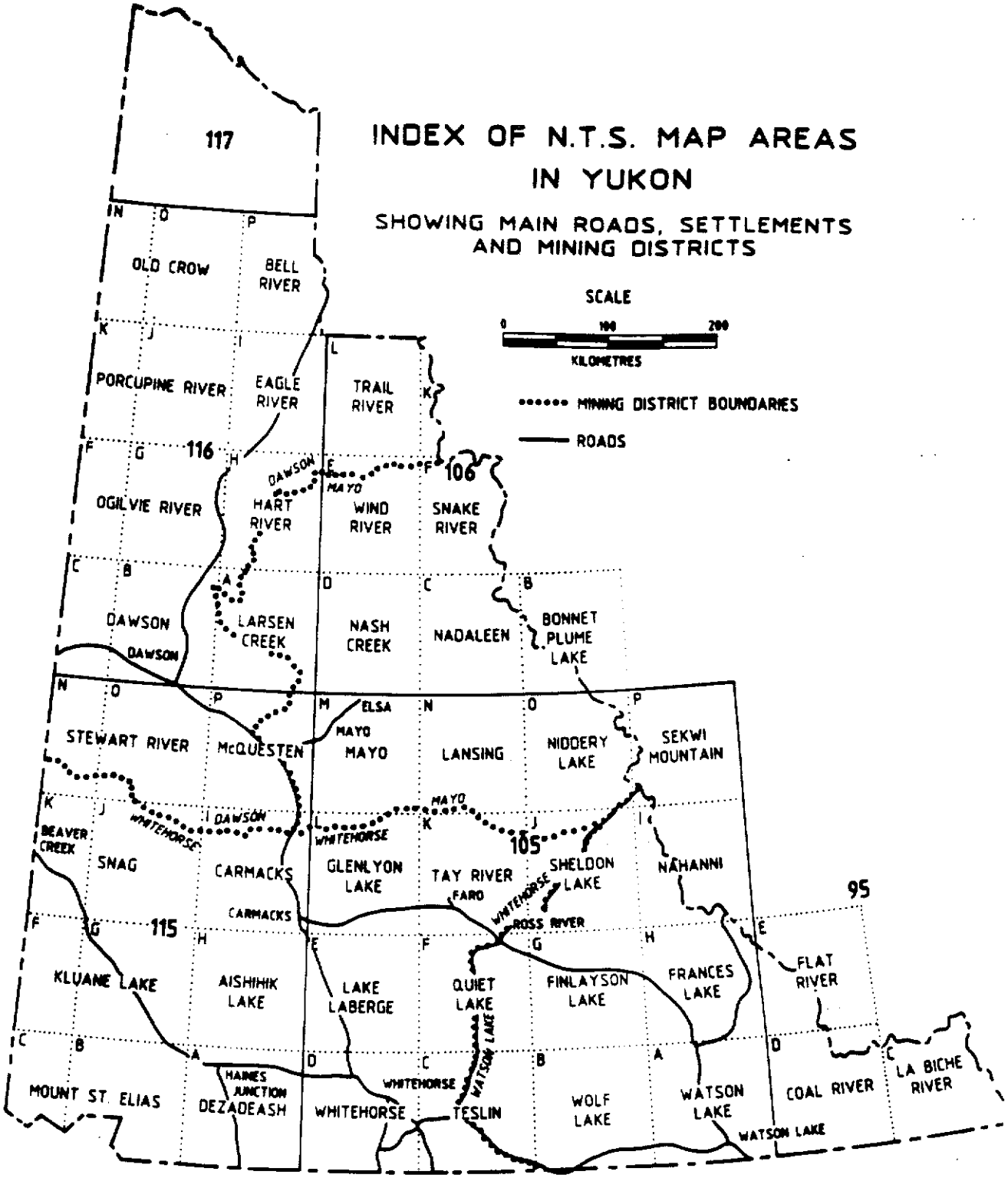
Abbreviations used in analytical results:

- GT - greater than
- LT - less than
- INF - interference
- N/A - not available
- opt - troy ounce per short ton
- n.d. - not determined

All analyses of rocks collected by J. Morin and D. Emond were analysed by Bondar Clegg Laboratories in Whitehorse and Vancouver.

INDEX OF N.T.S. MAP AREAS IN YUKON

SHOWING MAIN ROADS, SETTLEMENTS AND MINING DISTRICTS



95 C

4. TING (95 C 5)

Geology: Lower to upper Paleozoic sedimentary rocks (shales and carbonates) are intruded by a syenite plug. The plug is cone-shaped and highly fractionated with both intrusive and extrusive phases. A 2.5 m thick vein is exposed for 65 m and is hosted by brecciated sandstone at a sandstone - syenite contact. Surface outcrops are oxidized and contain secondary lead and zinc minerals.
Classification: Epizonal, magmato-hydrothermal, lead-silver-zinc vein proximal to a syenite intrusive plug.
References:

INAC Reports: 1978 MIR, p. 50; 1979-80 YGE, p. 131
Assessment Report: 090640
Other: J.C. Harrison (1982)

95 D

3. McMILLAN (95 D 12)

Geology: A mixed carbonate - clastic sequence of Upper Proterozoic and Lower Cambrian 'Grit Unit' is host to concordant and discordant lead-zinc-silver mineralization and forms an upper plate thrust over a lower plate of interbedded sandstone-siltstone. Concordant mineralization consists mainly of beds of massive sulphides with pyrite, sphalerite, galena, manganiferous calcite and siderite, and minor sulphosalts. Discordant mineralization consists of veins and veinlets of quartz-siderite that cut layering and cleavage.
Reserves: Reserves are estimated at 907 100 tonnes grading 10.0% Zn, 5.0% Pb and 61.71 g/t Ag.
Geochemistry: Analyses of samples collected by Morin are presented below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
52	39	GT 50.0	520	GT 10 000	GT 20 000
53	LT 14	19.6	148	GT 10 000	GT 20 000
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
52	940	110	610	120.0	LT 10
53	200	100	14 694	4140.0	LT 14
	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
52	117.0	LT 35	LT 120	2600	1
53	125.0	LT 53	LT 150	1000	LT 1
	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
52	53	318	49	20	7
53	17	46	7	LT 4	LT 4
	Na %	Br ppm	Fe %	Th ppm	U ppm
52	LT 0.05	5.5	1.3	1.6	2.0
53	LT 0.06	36.0	23.2	LT 1.0	LT 0.8

Sample Description:
52 - Massive fine-grained sphalerite and galena replacement from main showing on creek; sedimentary layering preserved;
53 - Patchy and disseminated coarse-grained pyrite, sphalerite and galena in recrystallized limestone from main showing on creek;
Classification: Epizonal, magmato-hydrothermal, intrusive-distal zinc-lead-silver replacement.
Comments: The lower plate is pyritic and locally carbonaceous below the thrust fault and may have been a pathway for hydrothermal fluids. There are many drill core intersections with the lower plate and a systematic study of them might be useful in tracing the fluid path. A comparison with argentiferous manganese oxide mineralization haloes peripheral to manto orebodies at Santa Eulalia may be appropriate. High As and Mn potentially useful pathfinders. High Sn values suggest affinity with other late Cretaceous tin-bearing systems (eg. Midway).

References:

INAC Reports: 1979-80 YGE, p. 105-109; 1981 YEG, p. 85; Vaillancourt (1982, p. 73-77)
Other: P. Vaillancourt (1983); Olson (1978)
Recent References: 1988 YEX, p. 8-9

8. HYLAND GOLD (PORKER) (95 D 12, 5)

Geology: Quartzite, grit and pebble conglomerate of the Upper Proterozoic and Lower Cambrian 'Grit Unit' are overlain by phyllite, quartzite and thin argillaceous limestone of the lower Cambrian 'phyllite unit'. Bedding is flat to moderately west-dipping. Four north-trending linears probably represent steeply-dipping normal fault zones. Several types of mineralization include: scattered sulphosalt veins; coarsely crystalline manganiferous siderite with irregular seams of arsenopyrite; a transported limonite gossan; and widespread areas of silicification and brecciation. Very finely disseminated arsenopyrite occurs in zones of silicification which vary from jasperoid alteration between grains of clastic sedimentary rocks to complete replacement of limestone by fine-grained silica. Brecciation and silicification appear spatially related to possible normal fault zones.
Geochemistry: Anomalous gold and arsenic were defined in soils over a five square kilometre area, the highest value 18 300 ppb Au. A grab sample of pervasively silicified country rock assayed 18.1 g/t Au and a 10 m chip sample 4.8 g/t Au. 1987 work proved 1.54 g/t Au over 25 m. 1988 trenching exposed the oxidized north-trending fault zones which contained up to 6.6 g/t Au over 20 m (chip sampling).
Classification: Epizonal, magmato-hydrothermal, intrusive-distal quartz vein stockwork and carbonate replacement.
Comments: A widespread soil anomaly is the exploration target zone in the search for a sediment-hosted disseminated gold deposit. A buried intrusion at depth is suggested by the alteration, mineralization and faulting and a zonal relationship is envisaged from the buried pluton to the CUZ to the PORKER to the McMILLAN deposit.
References:

INAC Reports: 1975 MIR, p. 155-156; 1982 YEG, p. 84; 1985-86 YEX, p. 94-95
Assessment report: 091425; 091639; 092005; 092664
More Recent: 1987 YEX, p. 25, 29, 63-64; 1988 YEX, p. 9-10 (includes map, cross section)

11. CUZ (95 D 5)

Geology: Upper Proterozoic and Lower Cambrian 'Grit Unit' rocks can be subdivided into four units: 1) coarse grained quartzite and quartz pebble conglomerate; 2) fine grained quartzite; 3) phyllite and sandstone, and 4) limestone. The rocks trend east, dip moderately north and are cut by two northeast-dipping thrust faults and by a set of north- to northeast-trending vertical faults. Within the quartzite and quartz pebble conglomerate, low grade gold mineralization is associated with sericitic-argillic matrix alteration, pyritic quartz veins and limonitic north- and northeast-trending shear zones.
Geochemistry: An area of 300 m by 400 m yielded an average of 74 ppb Au for 135 panel chip samples; ten samples were in excess of 200 ppb Au along with anomalous arsenic, bismuth and antimony.
Classification: Epizonal, magmato-hydrothermal, intrusive-proximal gold veins and disseminations.
Comments: Widespread phyllic alteration, gold mineralization and normal faults suggest that a buried intrusion may exist at depth and that the present surface is a section through mineralized roof rock.
References:

INAC Reports: 1982 YEG, p. 84; 1985-86 YEX, p. 95-97 (includes cross section)
Assessment report: 091815; 091427

95 E

1. TWIN (95 E 6)

Geology: North-south trending argillite, quartzite and slate of the Upper Proterozoic 'Phyllite Unit' and buff dolomite and grey limestone of the Lower Cambrian Sekwi Formation are folded into an anticline and syncline. Small, sill-like bodies of gabbro intrude the 'Phyllite Unit'. Mineralization consists of copper and silver-lead-zinc showings located near the contact between the buff dolomite unit and the structurally overlying 'Phyllite Unit'. Most of the mineralization is associated with vertical to steeply dipping fracture systems with trends almost perpendicular to the trend of the units. A minor amount appears to be controlled by primary layering. Numerous showings occur sporadically along a 4+ kilometre distance within the buff dolomite. The main showing is chalcopyrite, bornite, very minor pyrite and galena in brecciated and silicified dolomite.
Geochemistry: The average of six grab samples from the copper showings is 0.01 oz/ton Au, 1.64 oz/ton Ag and 15.55% Cu; whereas the average of seven grab samples from the silver-lead showings is 0.006 oz/ton Au, 31.80 oz/ton Ag, 36.00% Pb and 2.53% Zn.
Classification: Epizonal, magmato-hydrothermal, intrusive-distal copper-silver and silver-lead-zinc vein and breccia.
Comments: Other names include SUNSET, NEIL and FOX.
References:
INAC Reports: 1977 MIR, p. 75-77; 1978 MIR, p. 50-51
Assessment report: 018670

4. HEATHER (95 E 12)

Geology: Skarn is developed along a limestone-quartz monzonite contact on the eastern side of the Billings Batholith. Massive and disseminated galena and sphalerite occur in three localities: No. 1 Showing, No. 2 Showing (3 000 ft. N of No.1) and the Border Showing (1 mile northwest of No.1).
Geochemistry: Selected assay results are presented below:

	Ag(oz/ton)	Zn(%)	Pb(%)
The best of four chip samples across the No. 1 Showing, interval of 10 ft.	0.20	0.6	0.7
A chip sample across 3 ft. of a narrow mineralized fault cutting the No. 1 Showing.	0.30	5.0	3.9
A chip sample across 3 ft. of the wall rock from the No. 2 Showing.	0.44	1.7	0.8
A selected sample from the 2 ft. of massive mineralization in the No.2 Showing.	5.94	21.6	10.7
A grab sample from the 'Border' Showing.	2.4	N/A	9.56

Classification: Katazonal, magmato-hydrothermal, intrusive-proximal lead-zinc-silver skarn.
References:
Assessment Reports: 017615
Other: Private company report by R. McIntosh, 1967, for Hudson Bay Exploration; N.C.M.I.

16. RIO (95 E 5)

Geology: Paleozoic sedimentary rocks are intruded by a quartz monzonite to granodiorite batholith. Extensive hornfels and skarn with pyrite, sphalerite, galena and pyrrhotite is developed.
Classification: Magmato-hydrothermal silver-lead-zinc skarn proximal to the katazonal mid-Cretaceous Billings Batholith of the Selwyn Suite intrusive into distal North America Terrane.
References:
INAC Reports: 1981 YEG, p. 90
Assessment report: 090881

18. KEY (95 E 12)

Geology: The KEY showings lie within the belt of skarns with the RIO to the south and the HEATHER to the north, all within a 6 km northwesterly trend. Lower Paleozoic carbonate and clastic rocks are in contact with quartz monzonite of the Billings Batholith (?). Galena and sphalerite occur near faults intersecting limestone beds (Showing No.1) and with major pyrrhotite in skarn pods (15' by 10') and replacements in limestone (60' by 2.5' by 3.5' at Showing No. 2).
Geochemistry: A channel sample across the replacement band at Showing No. 2 assayed 3.86 oz/ton Ag, 2.90% Pb and 6.96% Zn.
Classification: Magmato-hydrothermal, katazonal, intrusive-proximal silver-lead-zinc skarn.
References:
Assessment report: 060566
Other: Findlay (1969b, p. 52)

105 A

1. WATSON (105 A 2)

Geology: Black shale and chert of the Road River Group host galena- and sphalerite-bearing quartz veins (locally stained by malachite). Many lenses and veins of white bull quartz form a complex network within the host rocks; most are less than 3 cm across but a few are as wide as a metre.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc veins.
References:
INAC Reports: 1983 YEG, p. 129-130; 1984 YEX, p. 38
Assessment Reports: 091552

2. NAZO (105 A 2)

Geology: Two veins of barite occur in black, graphitic shale of probable Ordovician age. The veins parallel cleavage and consist of galena-sphalerite-barite and barite respectively. Pyrite-rich bands up to 10 cm thick also occur along the cleavage. A quartz-feldspar porphyry dyke about 1 m wide parallels the mineralized vein along one side.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc-barite vein.
References:
INAC Reports: 1981 YEG, p. 98; 1983 YEG, p. 130; 1984 YEX, p. 39
Assessment reports: 090882; 091552

6., 7. HUNDERE, NORTH HILL (RITCO) (105 A 10, 7)

Geology: Skarn is developed in five zones along several phyllite-marble contacts in a slightly domed sequence of foliated Cambrian sedimentary rocks. Mineralization consists of sphalerite and galena with varying assemblages of skarn minerals including diopside, actinolite, garnet, zoisite, epidote, calcite and quartz. The sequence is cut by andesite and quartz porphyry dykes (53.31 Ma; W.D. Sinclair, Personal Communication) and skarn is cut by banded quartz-fluorite veins and breccias.
Reserves: North Hill reserves, indicated by 1988 drill program, of 2 440 000 tonnes grade 12.6% Zn, 1.1% Pb and 44.9 g/t Ag. Jewel Box reserves (the main zone of HUNDERE) are now estimated at 5 220 000 tonnes grading 13.3% Zn, 5.3% Pb and 63.8 g/t Ag.
Classification: Magmato-hydrothermal silver-lead-zinc skarn distal to a mesozonal buried Eocene stock intrusive into Upper Proterozoic - Lower Cambrian Gog tectonic assemblage of distal North America Terrane.
Comments: North showing of the Hundere deposit referred to as the North Hill (previously Ritco)
References:
INAC Reports: 1979-80 YGE, p. 140; 1981 YEG, p. 93; 1983 YEG, p. 130; 1984 YEX, p. 40; 1985-86 YEX, p. 104
Assessment Reports: 091927; 092137; 092541
Other: Abbott (1977); Dawson (1964)
Recent References: 1987 YEX, p. 29, 67-68; 1988 YEX, p. 15-16

11. NOTT (105 A 15)

Geology: Chalcopyrite, galena, sphalerite, pyrite and tetrahedrite veins and disseminations occur in sheared, fractured Cretaceous quartz monzonite. Scheelite was also reported in these veins.
Geochemistry: A 1.5 m sample from a drill hole contained 135 g/t Ag, 0.45% Cu, 0.56% Pb and 1.0% Zn.
Classification: Magmato-hydrothermal, intrusive-proximal, copper-lead-zinc-silver (tungsten) vein
References:

INAC Reports: 1981 YEG, p. 93-94; 1984 YEX, p. 42
Assessment Reports: 090885: 091986
More Recent Reports: 1987 YEX, p. 67-78 (drilling, assays)

12. WARBURTON (105 A 9)

Geology: Black carbonaceous and calcareous, silty shale is rhythmically interbedded with black carbonaceous limestone of early Paleozoic age. Concordant and discordant quartz-carbonate veins occur up to 2 m thick. Pyrite, galena, chalcopyrite, arsenopyrite, malachite, azurite and tetrahedrite are reported.
Geochemistry: Chip sample across 60 cm of a tetrahedrite-bearing quartz-carbonate vein 1.4 m thick assayed 1817 g/t Ag and 4.6% Cu with significant values in zinc, arsenic and antimony.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-copper vein.
References:

INAC Reports: 1983 YEG, p. 131
Assessment report: 091519; 191520

31. MOLLY (105 A 15)

Geology: Granitoid rocks of the Billings Batholith are cut by a quartz vein swarm and locally display intense phyllic alteration.
Geochemistry: Samples from trenches were analysed as follows:

Sample	Weight	Mo %	WO3 %	Au g/t	Sn %
1	15 kg	0.001	0.01	0.274	LT 0.01
2	15 kg	0.034	0.01	0.343	LT 0.01
3	6 kg	0.072	0.02	0.480	LT 0.01

More recently, quartz-sericite-pyrite-molybdenite veins assayed with up to 0.45 g/t Au and 0.072% Mo.
Classification: Magmato-hydrothermal, katazonal, intrusive-proximal gold-molybdenum veins.
References:

INAC Reports: 1984 YEX, p. 41
Assessment report: 091572; 092523
Recent References: 1988 YEX, p. 16

105 B

1. LORD (IDAHO, YP) (105 B 1)

Geology: Massive sulphide lenses and quartz veins containing pyrrhotite, pyrite, sphalerite, chalcopyrite, galena and arsenopyrite are associated with a north-trending zone of steeply dipping felsic dykes and breccias intrusive to Lower Cambrian limestone and interbedded phyllite, dolomite and limestone. Sulphide mineralization occurs adjacent to felsic dykes and within breccias and sedimentary rocks.
Geochemistry: Drill intersections of 15.26 g/t Au over 3.4 m and 337.31 g/t Ag over 2.2 m have been reported.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal gold-silver breccias, veins and replacements.
References:
INAC Reports: 1983 YEG, p. 137-139; 1985-86 YEX, p. 111
Assessment Report: 091501; 091644
Other: Lord (1944); Lowey and Lowey (1986, p. 92)

2. STERLING (105 B 1)

Geology: Lower Cambrian dolostone is in north-trending intrusive contact with the Cassiar Batholith. The main showing is irregular pods of coarse-grained galena, sphalerite and pyrite associated with a north-trending dolostone-limestone breccia that is in sharp contact with marble to the west and dolostone to the east. The breccia hosts large angular fragments of dolomite, limestone and phyllite in a matrix of coarse-grained white calcite. A 1 m thick carbonate vein contains disseminated galena and is enveloped by a fine-grained dolostone breccia. Hairline galena-filled fractures occur in dolostone locally.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc vein and breccia.
Comments: Previously called PETE.
References:
INAC Reports: 1982 YEG, p. 36, 38, 39
Other: Lowey and Lowey (1986, p. 89-90); Abbott (1985)

3. LUCK (105 B 1)

Geology: Interbedded limestone and phyllite of Lower Cambrian age contain an easterly trending lens-shaped zone 1 to 12 m wide and 100 m long. The zone is highly fractured and contains sphalerite, pyrite and galena as disseminations, massive lenses and irregular veinlets. Replacement occurs along an east-west trending joint and fracture plane and the northern contact of the mineralized zone is marked by an easterly trending calcite-scheelite vein emplaced along a fault.
Geochemistry: Detailed sampling of the sulphide occurrence indicated an average of 260 g/t Ag, 8.5% Pb and 9.9% Zn over 10 m. Grab samples of the calcite-scheelite vein assayed from 0.01 to 0.18% WO_3.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc vein and replacement.
References:
INAC Reports: 1969-70 MIR, p. 134-137; 1971-72 MIR, p. 106-107; 1975 MIR, p. 159; 1977 MIR, p. 77; 1978 MIR, p. 52-53; 1979-80 YGE, p. 144; 1985-86 YEX, p. 113-114
Assessment report: 090688; 060680; 091969

Other: Lowey and Lowey (1986, p. 86-87); Green and Godwin (1962, p. 31-32); Green (1966, p. 80-82)
Recent References: 1987 YEX, p. 25, 72, 74-75 (Other assays)

4. FIDDLER (105 B 1)

Comments: This is expanded into 3 occurrences - FIDDLER WEST, FIDDLER NORTH and PETE (126). FIDDLER EAST is not described; only noted to contain W.
References:
INAC Reports: 1979-80 YGE, p. 144
Other: Lowey and Lowey (1986)

FIDDLER WEST (105 B 1)

Geology: A series of northeast striking quartz veins up to 0.8 m thick occur within interbedded limestone and phyllite of Lower Cambrian age. The quartz veins contain wolframite, galena, scheelite, fluorite, and lesser amounts of cassiterite, stannite, sphalerite, chalcopyrite and pyrite. The main vein assayed 516.3 g/t Ag, 0.2% Cu, 3.24% Pb and 0.67% Zn over 3 m.
Classification: Magmato-hydrothermal, intrusive-distal, epizonal silver-lead vein.
References:
Assessment report: 060680
Other: Lowey and Lowey (1986, p. 88-89)

FIDDLER NORTH (105 B 1)

Geology: Massive argentiferous galena occurs in a northwest trending shear zone in Lower Cambrian interbedded limestone and phyllite. Three zones: PIE, HAMMER and MF ranging from 100 to 120 m long and up to 1.4 m wide.
Geochemistry: Contains up to 1 856.86 g/t Ag and 79.51% Pb.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead vein.
Comments: Other name is DK claims.
References:
Assessment report: 060680; 091934
Other: Lowey and Lowey (1986, p. 89)
Recent References: 1987 YEX, p. 39, 74-76 (Assays)

5. LENA (105 B 1)

Geology: Interbedded limestone-phyllite and marble of Lower Cambrian age are in intrusive contact with the Cassiar Batholith. Trenches expose boulders of vein material containing coarse grained black sphalerite, galena, pyrite and chalcopyrite in a matrix of fine grained, sugary quartz or coarse grained, light brown carbonate. The main vein is continuous over 150 m strike length with a 0.5 to 4 m width.
Geochemistry: Assays up to 994.6 g/t Ag, 21.18% Pb, 24.00% Zn and 22.9 g/t Au.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal lead-zinc-silver vein.
References:
INAC Reports: 1983 YEG, p. 140
Assessment Reports: 092111
Other: Lowey and Lowey (1986, p. 103-104); Abbott (1985)
Recent References: 1987 YEX, p. 72, 76 (Assays); 1988 YEX, p. 22 (Assays)

6. DALE (105 B 1)

Geology: A galena-bearing quartz vein is hosted in granodiorite of the Cassiar Batholith. A mafic dyke about 1 m thick roughly parallels the vein and cuts it in one place.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead vein.
References:
INAC Reports: 1983 YEG, p. 140-141
Other: Lowey and Lowey (1986, p. 82-83)

7. HOLLIDAY (105 B 2)

Geology: Several veins occur in granite of the Cassiar Batholith. The Discovery Vein consists of argentiferous galena, sphalerite and pyrite in a quartz gangue. The granite may be altered up to 30 m from the veins and alteration minerals include chlorite, sericite and kaolinite. Diabase dykes parallel some veins and have been dated as early Eocene (52 Ma; Abbott, 1983).
Geochemistry: A 14 tonne shipment of high grade ore assayed 532.01 g/t Ag, 29.1% Pb, 13.9% Zn, 0.16% Cu and 1.30 g/t Au. The best intersection of eight rotary-percussion drill holes in 1985 was 433.7 g/t Ag over 1.5 m.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1983 YEG, p. 141-142; 1985-86 YEX, p. 114-115
Other: Lowey and Lowey (1986, p. 101-102); Abbott (1985)

9. CARLICK (105 B 2)

Geology: Silver, zinc and lead occurs in quartz-pyrite veins and clays layered shear zones in faulted shale and chlorite schist (Pelly Cassiar Platform) near the Cassiar Fault (with the Cassiar Batholith).
Geochemistry: Grab samples contain up to 15.9% Zn, 2.29% Pb and 195 g/t Ag.
Recent References: 1988 YEX, p. 22-23 (Assays)

12. BLACK ROCK (105 B 2)

Geology: A silver-lead-zinc-copper vein occurs in undifferentiated Carboniferous quartzite.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc-copper vein.
References:
Lowey and Lowey (1986, p. 106)

13. KODIAK (105 B 1)

Geology: Small galena-bearing carbonate veins up to 30 cm thick parallel northeast- to east-trending shear zones and fractures; galena-bearing replacement lenses in siderite gangue parallel limestone-phyllite contacts near faults and fracture zones. The host rock is Lower Cambrian interbedded limestone and phyllite.
Geochemistry: A chip sample across a 7.5 to 10 cm thick vein assayed 1376 g/t Ag, 37.3% Pb, 6.1% Zn, 0.6% Cu and 0.06 g/t Au.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc veins and replacements.

References:

INAC Reports: 1983 YEG, p. 143; 1984 YEX, p. 48; 1985-86 YEX, p. 117-118
Assessment report: 091531; 091549
Other: Lowey and Lowey (1986, p. 90-91); Abbott (1985); Green (1966, p. 44)

14. HARDTACK (105 B 1)

Geology: Several mafic dykes cut interbedded limestone and phyllite of Lower Cambrian age and manganiferous oxides replace limestone in zones up to a metre wide along the dyke contacts. Breccias, comprised of altered fragments of wall rock (?) in an oxide matrix are common. In places, breccias with a vuggy, milky white quartz matrix also border the dykes. Two or more parallel veins (15 cm thick) have been traced for a strike length of over 210 m. They are manganese-stained near surface and consist of galena and sphalerite in a quartz-calcite gangue.
Geochemistry: A chip sample assayed 1350 g/t Ag, 65.5% Pb and 0.9% Zn over 15 cm.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead veins and breccia.
References:

INAC Reports: 1983 YEG, p. 143-144; 1984 YEX, p. 48; 1985-86 YEX, p. 118-120 (includes map)
Assessment report: 091685; 091596
Other: Lowey and Lowey (1986, p. 85-86); Abbott (1985)

15. KERNS (105 B 1)

Geology: A manganiferous gossan is developed in Lower Cambrian limestone and quartz veins with galena, sphalerite, chalcopyrite and scheelite cut Lower Cambrian phyllite and limestone.
Geochemistry: Grab samples taken from veins averaged 120 g/t Ag, 4.2% Pb and 0.7% Zn across an average thickness of 0.7 m. Copper assayed as high as 0.9% and tungsten as high as 0.1%.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead veins and replacement.
References:

INAC Reports: 1983 YEG, p. 144
Other: Lowey and Lowey (1986, p. 93-94); Abbott (1985)

17. NITE (105 B 7)

Classification: Molybdenum-tungsten-lead-zinc-silver-gold skarn.
References:

Recent References: 1988 YEX, p. 23

18. MIDNIGHT (MID, CMC) (105 B 7)

Geology: Lower Cambrian schist and carbonate are intruded by the Cassiar Batholith. Patches of vuggy, fine-grained, black manganiferous material up to 10 m wide can be traced for about 200 m along a fault. Similar material forms conformable lenses within two limestone beds that intersect the fault. Coarse galena, in rare patches up to 3 cm across, is the main sulphide mineral seen. Freibergite is also present. Nearby, manganiferous veinlets crosscut older sphalerite bearing garnet-pyroxene skarn from which scheelite and molybdenite are reported. In addition, a galena-bearing quartz vein occurs parallel to the first zone and is hosted in altered biotite-quartz monzonite. The vein is about 4 cm

thick and has a related zone of silicification and alteration 3 to 4 m wide and at least 50 m long. The silicified zone is poorly defined and is interspersed with altered intrusive rocks in which mafic minerals are altered to chlorite, and feldspars to clay.
Geochemistry: A 0.6 m chip sample across the vein assayed 4135.9 g/t Ag, 18.3% Pb and 0.72% Zn. Grab samples have assayed as high as 9920.9 g/t Ag, 60.5% Pb and 0.93% Zn.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead veins of probable Eocene age cut magmato-hydrothermal, katazonal, intrusive-proximal zinc-tunsten-molybdenum skarn of probable mid-Cretaceous age.
References:

INAC Reports: 1983 YEG, p. 144; 1985-86 YEX, p. 121
Assessment Reports: 091990; 091992; 091965
Other: Abbott (1985, p. 34-44); Amukun and Lowey (1987)
Recent References: 1987 YEX, p. 29, 72, 76-77 (Assays); 1988 YEX, p. 23

19. AURORA (105 B 7)

Geology: Lower Cambrian marble and overlying quartz-mica schist are intruded by quartz monzonite of the Cassiar Batholith. A vein about 30 cm thick and 10 m long cuts limestone and consists of coarse grained black sphalerite with some galena and chalcopyrite in a quartz and siderite gangue. Parts of the vein are clearly banded whereas other parts are an erratic mixture of sulphides and gangue. Locally over small areas not more than 1 m across, manganiferous oxide and sphalerite, galena, pyrite and chalcopyrite replace marble.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal zinc-lead-silver-copper vein and replacement.
Comments: It is not clear from reports whether the mineralization is related to the Cassiar Batholith or to younger Eocene magmatism; the high manganese content suggests the latter.
References:

INAC Reports: 1983 YEG, p. 145; 1984 YEX, p. 56
Assessment report: 090849; 091553
Other: Amukun and Lowey (1987)

23. BAR (105 B 3)

Geology: Hornfelsed metavolcanic rocks of Anvil Allochthon host calc-silicate skarns with pyrrhotite, chalcopyrite, magnetite, sphalerite and galena.
Classification: Magmato-hydrothermal, katazonal, intrusive-proximal lead-zinc-silver-copper skarn formed during mid-Cretaceous.
Comments: The presence of copper suggests this may have gold potential.
References:

INAC Reports: 1979-80 YGE, p. 145
Assessment Reports: 092686
Recent References: 1988 YEX, p. 24

24. BOM (105 B 3)

Geology: Skarn is developed within one of a series of carbonate lenses up to 50 m thick as massive black sphalerite, pyrrhotite and galena with several other ore minerals reported: magnetite, chalcopyrite, arsenopyrite, pyrite, marcasite, stannite, ludwigite, pyrargyrite and tetrahedrite.
Classification: Lead-zinc-silver iron skarn formed distal to a probable igneous source.
References:
INAC Reports: 1979-80 YGE, p. 145; 1981 YEG, p. 98; 1982 YEG, p. 96; 1983 YEG, p. 150
Assessment Reports: 090798; 090921

29. LOGJAM (BARB-LOG) (105 B 4)

Geology: Veins and lenses cut a steeply dipping diorite sill (245 +/- 32 Ma) Stewart intrusive into quartzite and limestone. The eight principal veins range from 2 cm to 50 cm wide and show a well developed internal zonation with sphalerite and arsenopyrite typically occurring along vein walls and sphalerite, argentiferous galena, galenobismutite, and pyrrhotite in the vein interiors. Vein cores are dominated by quartz, calcite and chlorite and accessory minerals include loellingite and stannite. The veins form a steeply dipping northeast- and north-northeast-trending conjugate set that trends toward the Logtung porphyry molybdenum-tungsten deposit, 1.6 km to the south and Cretaceous Logtung monzogranite stock (118 +/- 2 Ma).
Reserves: Estimated reserves are 70 000 tonnes grading 391 g/t Ag and 3 g/t Au.
Geochemistry:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
68	1 670	GT 50.0	1100	5508	5413
69	18 700	GT 50.0	360	GT 10 000	GT 20 000
70	74	GT 50.0	600	GT 10 000	15 455
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
68	120	290	361	GT 9000	LT 56
69	1975	60	798	GT 9000	LT 25
70	320	660	525	1390	63
	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
68	6180	LT 390	LT 950	105	4
69	970	LT 170	LT 410	230	4
70	252	LT 44	2200	330	8
	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
68	24	76	13	LT 100	LT 36
69	LT 10	LT 10	23	96	LT 13
70	52	340	178	20	76
	Na %	Br ppm	Fe %	Th ppm	U ppm
68	LT 1.90	LT 773.	12.0	LT 5.1	LT 12.0
69	LT 0.76	LT 564	20.7	LT 2.2	LT 5.2
70	0.37	18.0	7.8	4.8	6.2

Sample Description:
68 - Quartz vein and vein breccia with banded galena and arsenopyrite;
69 - Quartz vein breccia with 80% massive sulphides (pyrite, galena); quartz clasts 1 mm to 1 cm;
70 - silicified hornfels with pyrite stockwork;

Classification: Mid-Cretaceous, magmato-hydrothermal, mesozonal, intrusive-proximal silver-gold-lead vein.
Comments: This vein deposit is in a zonal relationship with the Logtung deposit and an understanding of it will assist in exploration of the area. The geochemical signature of the veins is quite varied and consistent with its position in the zoning sequence.
References:
INAC Reports: 1979-80 YGE, p. 147-148; 1982 YEG, p. 97
Assessment Reports: 091966; 092160
Other: Noble et al. (1986); Skinner (1962, p. 36); Green and Godwin (1964, p. 47-48); Findlay (1969a, p. 83-85)
Recent References: 1987 YEX, p. 72, 77; 1988 YEX, p. 24, 26 (Map)

32. POG (105 B 2)

Geology: A sulphide-quartz vein up to 0.5 m thick is hosted in granite of the mid-Cretaceous Cassiar Batholith. Mineralization consists of rhythmic and symmetric crustiform bands of sphalerite-siderite-pyrite-quartz-galena and erratically distributed coarse-grained galena and sphalerite in a vuggy white quartz gangue. A mafic dyke occurs several metres from the vein and parallels the same east-west fracture system.
Classification: Eocene(?), magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc veins.
References:
INAC Reports: 1983 YEG, p. 145
Other: Lowey and Lowey (1986, p. 102-103); Abbott (1985)

35., 90. IRVINE, SOURCE (ANGIE) (105 B 11)

Geology: Muscovite and chlorite schist and gneiss are intruded by granodiorite and by felsic dykes and sills. Scattered showings of galena and sphalerite with associated silver occur in magnetite-diopside skarn developed at intrusive contacts and also in quartz veins.
Classification: Mid-Cretaceous, magmato-hydrothermal, katazonal, intrusive-proximal silver-lead-zinc skarn and vein.
Comments: This property was originally known as the ANGIE; subsequent to lapsing, the area was restaked as the IRVINE property (COM claims) and the SOURCE.
References:
INAC Reports: 1975 MIR, p. 160; 1979-80 YGE, p. 149; 1982 YEG, p. 100; 1985-86 YEX, p. 122-123; Murphy (1988)
Assessment report: 091074; 090604; 091935
Recent References: 1987 YEX, p. 72, 78 (Assays)

43. ZAK (105 B 11)

Geology: Metasedimentary rocks of Cambrian and (?) earlier age are intruded by granodioritic and monzonitic rocks of the Cassiar Batholith. Lead-zinc sulphides occur in quartz stringers in brecciated dolomite.
Classification: Magmato-hydrothermal, mesozonal(?), intrusive-proximal lead-zinc-silver vein stockwork.
References:
INAC Reports: 1973 MIR, p. 80
Other: Murphy (1988)

44. BOY (105 B 7)

Geology: Highly fractured granite of the Cassiar Batholith hosts thin, discontinuous galena-pyrite-quartz veins. Local areas of shearing and pegmatite are also present.
Classification: Magmato-hydrothermal lead-silver vein.
References:
INAC Reports: 1979-80 YGE, p. 150; 1983 YEG, p. 150

52. MW (105 B 3)

Geology: Galena-sphalerite-pyrite bearing vein in sedimentary rocks.
Geochemistry: Average chip sample 1.46% Pb, 2.37% Zn and 17.67 g/t Ag.
Classification: Magmato-hydrothermal silver-lead-zinc vein.
References:
INAC Reports: 1981 YEG, p. 99

59. BINGY (105 B 10)

Geology: A Cretaceous granodiorite intrusion contains rafts of biotite schist and gneiss which are cut by pegmatite and granite dykes. Silver-rich galena occurs in three zones of manganese-iron gossan and in manganese oxide veinlets within larger quartz veins.
Geochemistry: Galena-bearing grab samples from each of the three zones assayed as follows:

Zone	Ag (g/t)	Pb (%)	Zn (%)
1.	1872.0	34.56	21.60
	2509.6	77.60	2.46
2.	6267.3	24.80	0.96
	3593.0	62.80	2.06
3.	696.0	12.20	8.56

Classification: Late Cretaceous to Eocene(?) magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc veins.
Comments: Manganese association suggests late Cretaceous to Eocene mineralization event.

References:
INAC Reports: 1979-80 YGE, p. 155; 1983 YEG, p. 146; 1985-86 YEX, p. 124
Assessment Report: 090653; 091911; 091960
Other: Murphy (1988); Abbott (1985)
Recent References: 1987 YEX, p. 72, 78, 79 (Assays)

60. CABIN (105 B 9,10)

Classification: Lead-zinc-silver skarn
References:
INAC Reports: 1981 YEG, p. 100
Assessment Reports: 091090
Recent References: Murphy (1988)

63. LUCKY (ANT) (105 B 1)

Geology: Sulphide-rich veins are hosted in granodiorite of the Cassiar Batholith. They are mainly evident as boulder trains.
Geochemistry: Best mineralization from a 1985 rotary-percussion drill program was 433.7 g/t Ag over 1.5 m. Forty-three assays from different mineralized boulders averaged 9252.1 g/t Ag, 0.03 g/t Au, 0.43% Cu, 57.9% Pb and 0.74% Zn.
Classification: Magmato-hydrothermal silver-lead veins.
References:
INAC Reports: 1983 YEG, p. 146-147; 1985-86 YEX, p. 114-115
Other: Private report entitled 'Detailed exploration and diamond drilling on the Klondike Silver property' for Terra Mining and Exploration Ltd. by Wayne Darch (Nov. 1981); Lowey and Lowey (1986, p. 84-85)

64. LICK (105 B 2)

Geology: Biotite-muscovite-quartz monzonite of the Cassiar Batholith is in intrusive contact with Paleozoic metasedimentary rocks (biotite-chlorite-feldspar schist and quartz-feldspar gneiss). Numerous brecciated, limonite and chlorite-rich shear zones up to 3 m wide occur in the intrusive, and veins of chalcedony and quartz occur within and parallel to them. A small 4 cm by 30 cm showing of galena with disseminated pyrite occurs in a quartz vein in the sheared quartz monzonite. Other small lenses of pyrite occur in the surrounding intrusive rocks.
Geochemistry: A grab sample assayed 1.16% Pb, 495 ppm Zn and 15.0 ppm Ag.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal lead-silver vein.
References:
INAC Reports: 1981 YEG, p. 101-102
Assessment Reports: 090629; 090685
Other: Lowey and Lowey (1986, p. 105-106)

65. GOAT (105 B 2)

Geology: Sedimentary strata are metamorphosed to marble and occur as roof pendants within intrusive rocks of the Cassiar Batholith. Small skarns are abundant and some contain pyrrhotite or pyrite along with minor scheelite, chalcopyrite and molybdenite. Narrow pyrite-galena-sphalerite-fluorite bearing pegmatite veins occur in northeast-trending shear zones in granite.
Classification: Mid-Cretaceous, magmato-hydrothermal, katazonal, intrusive-proximal copper-iron skarn and lead-zinc-silver veins hosted in the Upper Proterozoic - Lower Cambrian Gog tectonic assemblage of the Cassiar Terrane.
References:

INAC Reports: 1981 YEG, p. 102
Assessment Report: 090632
Other: Lowey and Lowey (1986, p. 99)

66. LIZ (BESSEY) (105 B 2,7)

Geology: Silver-lead veins (galena) occur in a northeast-trending shear zone cutting Lower Cambrian marble along its contact with Cretaceous granodiorite.
References:

Assessment Reports: 091743; 092659
Recent References: 1987 YEX, p. 73, 79-80; 1988 YEX, p. 24, 27 (Assays)

70. LOGAN (105 B 8)

Geology: Medium- to coarse-grained muscovite granite with pegmatitic pods is intruded by a felsic dyke 5 to 10 m thick and at least 500 m long. A quartz breccia vein with crudely banded black sphalerite, chalcopyrite, pyrite and arsenopyrite is associated with other types of mineralization including greisen, quartz vein stockwork and silicification. Three zones; MAIN, EAST and WEST, occur along a 8 km long northeast-trending fault zone. The MAIN zone is tested to 275 m depth and is contained in a tabular fault bounded body 50 to 100 m wide by 1100 m long.
Geochemistry: A diamond drill hole intersection in 1986 assayed 7.22% Zn and 29.2 g/t Ag over 72.9 m. In the East Zone, 1985 trenching uncovered a 1.5 m zone of silicified pegmatitic granodiorite which assayed 219 g/t Ag, 0.11% Sn and 0.21% Pb. A weighted average across 6.85 m of sulphide-bearing vein and breccia material gave 24.53% Zn, 33 g/t Ag, 105 ppm Sn, 472 ppm Cu, 369 ppm Pb and 0.54% As.
Reserves: Updated calculations indicate a geological inventory of 12.3 million tonnes grading 6.17% Zn and 26 g/t Ag; 90% is within 200 m of the surface and is amenable to open pit mining methods.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, epizonal, intrusive-proximal zinc-silver vein, breccia and replacement.
References:

INAC Reports: 1979-80 YGE, p. 156; 1982 YEG, p. 98; 1983 YEG, p. 147; 1984 YEX, p. 57; 1985-86 YEX, p. 60, 127
Assessment Reports: 090571; 090717; 091400; 091601; 091783; 091881; 091982; 092616
Other: Abbott (1985); Amukun and Lowey (1987); Murphy (1988)
Recent References: 1987 YEX, p. 23, 25, 29, 73, 80-82 (includes map and reserves); 1988 YEX, p. 27 (Updated reserves)

74. WOLF (105 B 9)

Geology: Carbonate-muscovite-chlorite-sulphide schist is host to three mineralized horizons: the lower and upper zones contain sphalerite, galena and pyrite as lenses and irregular laminations parallel to foliation. The third zone consists of pyrite with minor chalcopyrite and galena in a quartz-carbonate-muscovite matrix. Part of the third zone is a breccia of uncertain origin with scheelite in some fragments.
Geochemistry: Mineralization assaying 0.625% Pb, 1.54% Zn and 16.5 g/t Ag over four metres was reported from a diamond drill intersection. A grab sample from the third horizon of pyritic schist assayed 12.7 g/t Ag, 1.80 g/t Au, 0.22% WO_3 and 0.08% Cu.
Classification: Magmato-hydrothermal, katazonal, intrusive-distal silver-lead-zinc stratabound replacement.
References:
INAC Report: 1979-80 YGE, p. 157; 1981 YEG, p. 103

81. SILVER CREEK (105 B 11)

Classification: Silver-zinc vein.
References:
Recent References: Murphy (1988)

82. GULL (105 B 3)

Geology: Sphalerite-bearing skarn is developed near the contact between the Seagull Batholith and upper Paleozoic carbonate and clastic sedimentary rocks.
Geochemistry: A grab sample is reported to assay 9.76% Zn, 0.08% Pb and 0.26 oz/ton Ag.
Classification: Mid-Cretaceous, magmato-hydrothermal, katazonal, intrusive-proximal zinc-silver skarn.
References:
INAC Reports: 1978 MIR, p. 56; 1982 YEG, p. 95, 101

84. MAC (105 B 1)

Geology: The area is underlain by a north-trending sequence of five units: 1) Lower Cambrian orthoquartzite; 2) quartzite, siltstone and shale; 3) biotite, muscovite schist/phyllite; 4) limestone and dolomite; and 5) carbonaceous phyllite. Granodiorite to quartz monzonite of the Cassiar Batholith intrudes the carbonate sequence. Mineralization includes float occurrences of sphalerite, manganosiderite and manganese oxides where limestone and dolomite are in contact with the Cassiar Batholith. Small pods of iron and manganese oxides with minor associated nodules and stringers of galena are exposed in a trench.
Geochemistry: Assayed mineralized float gave values up to 21.08% Pb, 43.00% Zn, 488.2 g/t Ag and 0.58 g/t Au. A 4 m chip sample across highly fractured limestone gave 0.27% Pb, 1.82% Zn and 25.7 g/t Ag.
Classification: Magmato-hydrothermal, intrusive-distal, epizonal lead-zinc-silver vein and replacement.
Comments: The high manganese association suggests that this occurrence is related to late Cretaceous to early Tertiary mineralization. Presumably, the country rock - batholith contact is a structural pathway that was followed by the hydrothermal fluids.
References:
INAC Reports: 1985-86 YEX, p. 128-129
Assessment report: 091625; 091857

87. MEISTER RIVER (MR) (105 B 8)

Geology: Clastic and carbonate sedimentary rocks host oxidized zones of massive to disseminated primary sulphide mineralization.
Geochemistry: The best diamond drill intersection averaged 3.72% Zn, 39.5 g/t Ag and 0.55% Pb over 31 m. A grab sample of vein material assayed 23.6% Pb, 730 g/t Ag and 1.13 g/t Au.
Classification: Late cretaceous to early Tertiary magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc replacement and vein.
Comments: The high manganese association suggests that this occurrence is related to late Cretaceous to early Tertiary mineralization.
References:

INAC Reports: 1981 YEG, p. 104; 1982 YEG, p. 98-99; 1983 YEG, p. 147-148; 1984 YEX, p. 54-55; 1985-86 YEX, p. 129-130 (includes map)
Assessment report: 091780; 091890
Other: Lowey and Lowey (1986); Amukun and Lowey (1987)

110. TIM (ERIC) (105 B 1)

Geology: A northwest-trending and southwest-dipping sedimentary sequence is present: Cambrian (?) carbonaceous to graphitic shale and phyllite; Lower Cambrian limestone; and Lower Cambrian or earlier quartzite, siltstone and shale. The TIM West Oxide-Breccia Zone is an area with numerous float and bedrock occurrences of silver- and lead-bearing iron and manganese oxides near the limestone - shale contact.
Geochemistry: A grab sample of goethite from suboutcrop assayed 599.6 g/t Ag and 15.00% Pb. Nearby, a 2 m chip sample through oxidized chert assayed 3.88% Pb and 19.5 g/t Ag. Trenching in 1988 exposed a 30 x 1000 m oxide zone in which a 4m chip sample averaged 352 g/t Ag and 9.12% Pb.
Classification: Late Cretaceous to early tertiary magmato-hydrothermal, epizonal, intrusive-distal silver-lead breccia and replacement.
References:

INAC Reports: 1984 YEX, p. 52; 1985-86 YEX, p. 131
Assessment Report: 091869; 091591; 092662
Recent References: 1988 YEX, p. 27-28

121. ALAN (105 B 2)

Geology: Granodiorite of the Cassiar Batholith is weakly altered, in part, to chlorite and sericite over an area of undetermined size. Within the altered zone, limonite stained patches are exposed in several closely spaced pits. Quartz and pyrite content of the granodiorite is higher within the stained patches.
Geochemistry: Grab samples range from 0.77 g/t Ag to 24.26 g/t Ag.
Classification: Magmato-hydrothermal, intrusive-proximal gold disseminations.
References:

INAC Reports: 1983 YEG, p. 148; 1985-65 YEX, p. 117-118
Other: Abbott (1985, p. 34-44); Lowey and Lowey, (1986, p. 100-101)

123. SPENCER (105 B 1, 2)

Geology: Mineralization is galena and sphalerite with manganosiderite in narrow veins and poddy replacement zones within Lower Cambrian limestone and phyllite near the contact of the Cassiar Batholith.
Geochemistry: A grab sample from a 3.0 to 8.0 cm thick lens assayed 744.7 g/t Ag, 7.98% Pb and 6.82% Zn.
Classification: Late Cretaceous to early Tertiary magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc vein and replacement.
References:
INAC Reports: 1984 YEX, p. 53
Assessment Report: 091589

126. PETE (105 B 1)

Geology: Massive galena 2 to 20 cm thick occurs in a shear zone in Lower Cambrian phyllite.
Geochemistry: Three samples (10 to 20 cm thick) assayed 353 to 5000 g/t Ag, 8.36 to 34.6% Pb, 1.9 to 8.3% Zn and 1 to 2 g/t Au.
Classification: Magmato-hydrothermal, epizonal silver-lead-zinc vein.
References:
INAC Reports: Lowey and Lowey (1986, p. 89)
Assessment report: 060680

132. WINNIE (MATHEW, SHOOTAMOOK) (105 B 14)

Geology: Phyllite and dolomite of Lower Cambrian age are cut by a northerly trending, steeply west dipping fault and intruded by quartz-feldspar porphyry dykes. A vein of banded chalcedonic quartz and breccia occurs along the fault accompanied by extensive argillic alteration of wallrocks. The hanging wall rocks are silicified, brecciated and cut by a vuggy stockwork of calcite, pyrite and clay and disseminated pyrite.
Geochemistry: Analyses of samples collected by Morin and Emond are listed below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
25	68	5.5	19	883	111
26	51	2.3	7	69	13
27	15	1.7	7	73	23
28	42	3.1	7	73	15
29	1850	14.1	23	218	13
30	218	2.3	9	384	55
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
25	LT 1	330	55	178.0	LT 5
26	LT 1	730	37	196.0	LT 5
27	LT 1	330	15	87.1	LT 5
28	LT 1	420	45	67.8	LT 5
29	LT 1	540	31	356.0	LT 5
30	LT 1	310	79	569.0	LT 5

	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
25	247.0	LT 39	LT 130	95	3
26	100.0	LT 26	740	120	4
27	39.8	LT 10	210	45	1
28	175.0	LT 31	LT 100	30	2
29	119.0	LT 28	210	35	3
30	95.9	LT 26	150	20	1

	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
25	87	LT 10	LT 2	21	3
26	181	LT 10	LT 2	19	LT 1
27	47	LT 10	LT 2	17	1
28	85	LT 10	7	8	LT 1
29	45	LT 10	LT 2	11	4
30	35	25	3	11	4

	Na %	Br ppm	Fe %	Th ppm	U ppm
25	LT 0.07	9.0	3.8	5.3	1.1
26	0.07	3.8	3.5	12.0	2.4
27	0.10	2.6	0.6	4.9	2.0
28	0.09	5.9	1.9	5.2	1.3
29	0.08	6.7	0.5	6.0	1.2
30	0.06	6.6	1.3	7.6	1.9

Sample Description:
25 - Vuggy silicified zone in hanging wall; dark grey silicified phyllite; vugs 1 mm to 1.5 cm and quartz-lined (5% by volume) and contain white clay. Fine grained pyrite occurs as disseminations and as lenses.
26 - No. 1 Showing; quartz stockwork, patchy pyrite replacement all in silicified rhyolite dyke next to vein at main showing;.
27 - No. 1 Showing; hanging wall silicified phyllite with minor disseminated pyrite and white clay minerals along fracture stockwork.
28 - Silicified phyllite in hanging wall; vuggy with stockwork of quartz, clay minerals and calcite with trace disseminated pyrite.
29 - No. 1 Showing; Chip sample across central quartz vein for 0.9 m of white and grey quartz.
30 - Silicified breccia in hanging wall; vuggy, disseminated and patchy replacement pyrite.
Previous work showed consistent assays of 2-3 g/t Au in the fault gouge and vein of the No. 1 Showing.

Classification: Late Cretaceous - early Tertiary magmato-hydrothermal, epizonal, intrusive-distal gold vein, replacement and breccia.

Comments: Extensive leaching of the hanging wall rocks is indicated by the low Na and Fe. Low Mn and Hg are probably a feature of the core of the system and would be expected to increase on the flanks. High Ba, Cs and F suggest that this system may be related to the late Cretaceous - early Tertiary mineralization in the area associated with topaz rhyolites.

References:

INAC Reports: 1985-86 YEX, p. 134
Assessment Reports: 092125; 092660; 092661
Recent References: 1988 YEX, p. 28, 30 (map)

133. WOLFY (105 B 1)

Geology: Metamorphosed pendants of late Proterozoic to Cambrian clastic and carbonate rocks are contained in the Cassiar Batholith. Three types of mineralization occur: veins, skarn and replacement. Three parallel, southeast-striking vein systems (BC, BP and WW) dipping steeply to the north are exposed over approximately 120 m. Several skarn/replacement zones occur near the contact with the Cassiar batholith. Galena, sphalerite and pyrite replace limestone beds within limestone-schist sequences.
Geochemistry: Several grab samples from the veins were assayed:

1) BC zone - steel-banded, fine-grained galena with freibergite; seven 9 - 11 kg samples ranged from 1045 to 1628 g/t Ag.
2) BP vein - massive, randomly oriented, euhedral and warped galena crystals, and galena and freibergite are layered with amorphous quartz; grab samples assayed up to 669 g/t Ag.
3) WW zone - massive, coarse-grained galena in a vuggy, brown quartz gangue; grab samples assayed up to 75 g/t Ag.
Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-zinc veins, replacements and skarn.
Comments: This mineralization seems typical of the Eocene metalization in the Rancheria area, yet the spatial proximity of the mineralization to the Cassiar Batholith suggests that it may be older. In either case, hydrothermal fluids exploited the country rock - pluton contact as a pathway and this contact may be a useful exploration guide in the district.
References:
INAC Reports: 1985-86 YEX, p. 115-117 (includes map)
Assessment Reports: 091826

134. DK (105 B 1)

Classification: Silver-lead-zinc veins
Recent References: 1988 YEX, p. 28, 31 (assays)

141. GRAVEL (105 B 11)

Classification: Gold vein.
Recent References: 1988 YEX, p. 29

105 C

1. KITCHEN (105 C 8)

Geology: Silver-lead vein.
References:
Other: N.C.M.I.

2. SMEG (BAR) (105 C 8, 9)

Geology: Grey chert-pebble conglomerate and grey green chert host a zone of massive to disseminated white barite and white quartz. Major amounts of pyrite as fine disseminations, streaks and small lenses, and very minor fine-grained galena as fracture fillings occur within the barite. An extensive pyrite stringer zone with associated minor sphalerite, galena, traces of tetrahedrite and possibly stibnite is hosted in fine-grained volcaniclastic tuff to sandstone and in intercalated volcanic breccia (lithic conglomerate). Both host rocks show moderate to strong bleached sericite-dolomite alteration or fine-grained K-feldspar flooding.
Geochemistry: The best assays in the pyrite stringer zone are 3 m of 0.72% Zn, 0.17% Pb and 29.1 g/t Ag; and 0.9 m of 2.77% Zn, 0.43% Pb and 30.3 g/t Ag. Several widespread areas within the conglomerate are strongly anomalous in Tl, As, Sb and Hg.
Classification: Devono-Mississippian, tectono-hydrothermal, syngenetic bedded and vein lead-zinc-silver-barite bed and veins.
Comments: Lead isotopes indicate a Devono-Mississippian age and signature characteristics of bedded, stratiform mineralization (K.M. Dawson, personal communication). The extensive bleaching and alteration suggest epigenetic hydrothermal activity that would normally be assigned to Cretaceous associated magmatism. This occurrence lies between a mid-Cretaceous batholith and plug, and may be coincidentally altered with some related remobilization of metals.
References:
INAC Reports: 1976 MIR, p. 189; 1978 MIR, p. 59-60; 1979-80 YGE, p. 161; 1982 YEG, p. 105; 1983 YEG, p. 153-154; 1985-86 YEX, p. 142-143
Assessment Reports: 090651; 091382; 091828

5. SM (SLATE) (105 C 13)

Geology: Argillite, talc-chlorite-sericite schist and thin limestone bands of Mississippian age or earlier (?) are anticlinally folded and intruded by lamprophyre, rhyolite porphyry dykes, and to the north by a molybdenum-mineralized quartz monzonite porphyry (hydrothermal biotite date of 87.3 +/- 2.0 Ma, W.D. Sinclair, Personal Communication). Two mineral occurrences have been reported, both in zones of brecciated argillite that is variably silicified and cemented by carbonate. One consists of a 5.0 cm contorted vein of galena; the other consists of a white efflorescence of zinc (hydrozincite?).
Geochemistry: The highest assay reported is 19.40 oz/ton Ag, 0.008 oz/ton Au, 0.16% Zn and 0.12% Pb.
Classification: Late Cretaceous, magmato-hydrothermal, epizonal silver vein and breccia distal to an intrusive molybdenum porphyry plug.
References:
INAC Reports: 1975 MIR, p. 96
Assessment Report: 090005; 091107
Other: Brown and Kahlert (1986)

13. MARLIN (105 C 11)

Geology: Two trenches approximately 30 m apart expose Mn - Ag - Pb mineralization. The vein fault is in Mississippian (?) gneissic biotite quartz schist and consists of galena and pyrite in a ribbon quartz matrix. The country rock is typically fresh with narrow 1 - 10 cm alteration envelopes adjacent to the veining.
Geochemistry: Grab samples assayed the folowing:

Au (g/t)	Ag (g/t)	Pb(%)
0.1	4.1	0.25
0.2	290.0	25.40
0.3	7.5	-

Classification: Magmato-hydrothermal, epizonal, intrusive-distal silver-lead-manganese veins.
References:
INAC Reports: 1984 YEX, p. 63
Assessment Report: 091573
Recent References: 1987 YEX, p. 88-89

14. MT. GRANT (105 C 11)

Geology: A concordant 30 cm thick quartz-carbonate lens is exposed for 10 m within Mississippian (?) quartz biotite schist and gneiss. The zone dips moderately to the southeast and is obscured by overburden along strike. Chalcopyrite and bornite are the major sulphide minerals present and chalcopyrite veinlets occur in the footwall.
Geochemistry: Grab samples assayed the following:

Au (g/t)	Ag (g/t)	Cu (%)
1.3	124.8	11.75
0.6	273.2	18.00
0.6	81.6	6.85

Classification: Magmato-hydrothermal, intrusive-distal copper-silver replacement and vein.
References:
INAC Reports: 1984 YEX, p. 64
Assessment Report: 091573

16. IRON CREEK (105 C 14)

Classification: Silver-gold-copper vein, replacement.
References:
N.C.M.I.

17. LINDSAY (105 C 14)

Geology: Schists, quartzites and gneisses of the Big Salmon Complex, and a body of sheared, altered and carbonatized serpentinite underlie the area.
Geochemistry: Assays of diamond drill core include 1.03 g/t Au and 9.3 ppm Ag along an intersection of 4.27 m, and in another hole, 8.6 g/t Au and 26.0 ppm Ag over 3 cm.
Classification: Metamorpho-hydrothermal, mesozonal, thrust-related (?) gold veinlet stockwork (?) or magmato-hydrothermal, mesozonal, intrusive-distal gold veinlet stockwork (?).
Comments: The ultramafic probably forms upper plate thrust material on top of the metamorphic rocks, and possibly the gold mineralization is related to hydrothermal solutions that moved along the thrust surface.
References:

INAC Reports: 1969-70 MIR, p. 124-125; 1984 YEX, p. 65
Assessment Report: 091574
Other: Mulligan (1963, p. 77)

20. DEADMAN (105 C 6)

Classification: Silver-lead vein.
References:

N.C.M.I

28. ORK (105 C 9)

Geology: The property is underlain by highly sheared Mississippian (?) chert pebble conglomerate, greywacke, quartzite, argillite and white to dark grey limestone. Dykes of aplitic granite and pegmatite intrude the metasediments and the margins of the limestone horizon are altered to pyroxene-garnet skarn. Arsenopyrite, pyrite, pyrrhotite and minor chalcopyrite occur sporadically in the skarn.
Geochemistry: A chip sample across six feet of chalcopyrite, pyrite and pyrrhotite mineralization assayed 2.80% Cu, 0.12% Zn, less than 0.01% Sn and 1.96 oz/ton Ag. A sample of comparably mineralized float assayed 0.010 oz/ton Au.
Classification: Magmato-hydrothermal, mesozonal, intrusive-proximal copper-silver skarn.
References:

INAC Reports: 1979-80 YGE, p. 162; 1981 YEG, p. 110; 1982 YEG, p. 107; 1983 YEG, p. 154
Assessment Report: 090667; 090886; 091364

37. TOG (JUBE) (105 C 5)

Classification: Gold-silver-lead vein.
References:

INAC Reports: 1985-86 YEX, p. 144
Recent References: 1988 YEX, p. 34

105 D

1. JUBILEE (105 D 1)

Geology: Intermediate volcanic rocks of the late Paleozoic Cache Creek Group are cut by a vertical shear zone, 1700 m long and up to 3 m thick, containing veins of massive arsenopyrite, pyrrhotite and chalcopyrite ranging from 7 cm to 2 m wide.
Geochemistry: A 1982 drill hole intersection over 21.8 m gave 0.72 g/t Au, 7.71 g/t Ag and 0.34% Cu. In 1983, five trenches returned up to 5.8 g/t Au and 0.79 g/t Ag over 3 m sections.
Classification: Late Cretaceous to early Tertiary, magmato-thermal, shallow volcanic-associated gold-silver vein.
Comments: The strong similarity in structure, texture and mineralogy between the Venus vein and the Jubilee vein infer the same age for both.
References:
INAC Reports: 1981 YEG, p. 114; 1983 YEG, p. 159-160
Assessment Report: 090864; 091451; 091169

2. LULU (105 D 2)

Geology: Quartz and "skarny" vein material cut altered volcanic rocks of the (?) Taku Group and reportedly carry gold, silver, copper and some nickel values.
Geochemistry: In 1971, old adits (prior to 1908) sampled up to 21.9 g/t Au and 37.4 g/t Ag. Quartz-pyrrhotite-pyrite veins in volcanic rocks contained up to 1.7 g/t Au and 166.3 g/t Ag over 45 cm from the adit.
Classification: Magmato-hydrothermal, shallow volcanic-associated gold-silver-copper vein.
References:
INAC Reports: 1984 YEX, p. 74
Assessment Reports: 091744
Other: Findlay (1969b, p. 39)
Recent References: 1987 YEX, p. 101 (Assays)

5. VENUS (105 D 2)

Geology: Andesitic to dacitic flows and breccias of late Cretaceous to early Tertiary age are intruded by quartz latite to trachyte dykes and are host to a major quartz-sulphide vein. The 065 to 020 degree trending vein has a strike length on surface of 2 km, dips 30 to 35 degrees northwest and has a known vertical depth of 390 m. It has an average width of 0.8 m to 1.0 m, but can vary up to 3.0 m. Both open space filling and replacement textures are present, and the main ore minerals are arsenopyrite, pyrite, galena and sphalerite. Other minerals reported include pyrargyrite, tetrahedrite, realgar, orpiment, chalcopyrite, diaphorite, jamesonite and electrum. Limonite, yukonite, scorodite and covellite are found in the supergene weathering zone and on surface.
Reserves: Ore reserve figures were estimated in 1984 at 68 300 tons of 0.32 oz/ton Au, 8.9 oz/ton Ag, 2.45% Pb and 1.46% Zn, including 15 000 tons of 0.42 oz/ton Au, 10.6 oz/ton Ag, 2.65% Pb and 1.33% Zn. In addition, 13 360 tonnes of exploration muck are reported grading 0.17 oz/ton Au, 4.3 oz/ton Ag, 1.29% Pb and 0.72% Zn.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver-lead-zinc vein.
References:
INAC Reports: 1984 YEX, p. 9, 12; 1981 YEG, p. 7, 18, 113, 116
Other: Walton (1987, 1986); Roots (1982, 1981); Ralfs (1975); Morin, J. (1981)

Recent References: Hart and Pelletier (1989a)

6. MONTANA (105 D 2)

Geology: Massive, dark green flow and silicified breccia host a white quartz vein 0.5 to 1.5 m thick and bearing arsenopyrite, galena, argentite, and freibergite.
Geochemistry: A grab sample is reported to assay 0.08 oz/ton Au and 110.14 oz/ton Ag.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver-lead-zinc vein.
References:

Assessment Reports: 092614
Other: Wheeler (1961); Roots (1981); Findlay (1969a, p. 60-61)
Recent References: 1988 YEX, p. 42-43

7. THISTLE (105 D 2)

Geology: Quartz vein with arsenopyrite and galena in volcanic flows and breccia.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
References:

Roots (1981, p. 116-122)

8. JEAN (105 D 2)

Geology: Late Cretaceous quartz monzonite intrudes Cretaceous andesite lava flows. Two sub-parallel quartz-calcite vein systems are oriented along the intrusive-andesite contact and may be faulted portions of one vein. The upper zone is up to 61 cm thick and contains up to 20% galena-sphalerite-pyrite (+/- arsenopyrite) whereas the lower zone contains stibnite-arsenopyrite-sphalerite-pyrite-galena in a fracture swarm 2.5 to 3.0 m thick. Precious metals also occur in low sulphide west-trending quartz veins up to 7.6 cm thick and with finely disseminated pyrite in weakly altered granite. Chalcedony is also reported (Roots, 1981).
Geochemistry: Chip samples taken in 1984 across the upper vein zone assayed 940.09 g/t Au, 1098.48 g/t Ag, 10.6% Pb and 6.52% Zn over 30.5 cm; the lower zone assayed 65.76 g/t Au, 175.54 g/t Ag and 2.14% Pb over 15.2 cm.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver-lead-zinc vein.
References:

INAC Reports: 1985 YEX, p. 86-87
Assessment Report: 091624
Other: Roots (1981); Green and Godwin (1964, p. 39-40); Findlay (1969a, p. 61)
Recent References: 1988 YEX, p. 42-43; Hart and Pelletier (1989a)

9. ARCTIC CARIBOU (BIG THING, PEERLESS) (105 D 2)

Geology: Mauve altered granite hosts several quartz veins bearing arsenopyrite, chalcopyrite, galena, molybdenite and stibnite. Alteration envelopes up to 10 m thick of white clay and pyrite.

Geochemistry: Production in 1967-68 was 14 300 oz Au and 425 963 oz Ag from 55 943 tons. A new (1988) showing, the BIG BEN, includes a quartz vein which contained 1.46% Pb, 150.2 g/t Ag and 2.2 g/t Au over 1.4 m.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-associated gold-silver vein.
References:
INAC Reports: 1979-80 YGE, p. 116-122; 1985-86 YEX, p. 102-103
Assessment Reports: 0911719; 091932; 092639
Other: Roots (1981)
Recent References: 1987 YEX, p. 97, 101-103, 112 (Feasibility study); Hart and Pelletier (1989-1); 1988 YEX, p. 43, 44 (map, assays)

13. COLLEGE GREEN (GRAY) (105 D 2)

Geology: Massive pyroxene porphyry, thin-bedded tuff and interbedded mudstone, siltstone and fine sandstone underlie the area along with a 1 to 10 m thick limestone bed that hosts chalcopyrite-bearing veins. Late Cretaceous - early Tertiary granodiorite has intruded the Triassic rocks along a linear northwest-trending contact marked by a zone of pyritic hornfels and gossanous float. Three rhyolite plugs (each about 10 m across) intrude the Triassic rocks on the west side of the property.
Geochemistry: Chip samples were taken across outcrops and the highest value obtained was 12 ppm Au.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, epizonal intrusive-proximal copper-gold veins.
References:
INAC Reports: 1985-86 YEX, p. 154
Assessment Report: 091853
Recent References: 1988 YEX, p. 43

15. LATRIELLE (105 D 3)

Classification: Gold-silver-lead-copper vein and copper-molybdenum porphyry.
References:
Assessment Reports: 092624
Recent References: 1988 YEX, p. 43, 46 (assays)

19. MASCOT & CHARLESTON (105 D 3, 4)

Geology: Cretaceous granodiorite and quartz diorite intrude Paleozoic(?) schist, quartzite and meta-diorite and together form the basement upon which lies the contiguous Eocene Skukum Volcanic Complex to the east. Intense faulting at the borders of the volcanic complex has controlled the emplacement of gold-bearing quartz veins, rhyolite and andesite dykes. The Charleston vein occupies a shear zone in quartz diorite and contains vugs and thick seams of chlorite and up to 5% galena, pyrite and minor sphalerite and chalcopyrite. It is 700 m long, 2 m thick and strikes 135° to 160° with a dip of 35° to 45° east. The host rock is sericitized adjacent to the vein and chloritization extends 10 to 25 m from the vein. A new zone exceeding 30.5 m in length was discovered in 1984 approximately 106.7 m south of the known vein and with a mineralogy of quartz, calcite and 2 to 5% galena, pyrite, chalcopyrite and tetrahedrite. Four lesser veins are also present.
Geochemistry: During 1921, a 61 m adit driven along the vein assayed an average of 11.31 g/t Au and 291 g/t Ag over a 0.61 to 1.52 m width and a 249 m length.

Samples from the new 1984 zone assayed as follows:

Interval	Au (g/t)	Ag (g/t)	Pb (%)
1.89 m	14.40	671.98	2.9
0.61 m	17.83	122.05	1.8
0.18 m	86.40	1011.4	13.0

SAMPLE	Au opt	Ag ppm	Cu ppm	Pb ppm	Zn ppm
26	0.380	0.32	87.0	110	93.0
27	0.520	13.3	130.0	0.62%	2200.
28	0.530	3.71	0.01%	0.39%	1200.

	Cd ppm	Mn ppm	As ppm
26	3	140	66
27	76	33	580
28	36	140	180

	Sb ppm	Te ppm	Hg ppb	Tl ppm
26	0.01%	0.4	140	LT 20
27	0.02%	3.8	220	20
28	0.02%	7.2	350	LT 20

	U ppm	Bi ppm	W ppm	Mo ppm
26	0.8	0.5	1	2.0
27	0.3	1.4	8	1.0
28	0.1	LT 0.1	5	3.0

Sample Description:
26 - Composite of grab samples of galena-bearing quartz vein near adit;
27 - Grab sample from 0.3 m wide vein of white quartz with bands of pyrite and streaks of galena; 150 degree trend with dip of 40 degrees northeast; phyllic quartz-sericite-chlorite-pyrite alteration about 0.3 m wide at vein sides;
28 - Grab sample from talus about 100 ft. below adit. White quartz vein with disseminated streaks of very fine grained pyrite, chalcopyrite and galena;
Note high Te.

Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold-silver vein.

Comments: The structure between this vein system and the Berney Creek Fracture is not known in detail but they are probably related.

References:

INAC Reports: 1979-80 YGE, p. 165; 1981 YEG, p. 114; 1985-86 YEX, p. 155-156
Assessment Reports: 090740; 090975; 091648; 091897
Other: Smith (1982); Wheeler (1961, p. 126-127)
Recent References: 1987 YEX, p. 107, 133; 1988 YEX, p. 45 (assays)

21. MOUNT REID (OMNI, SKUKUM CREEK) (105 D 3)

Geology: The area covers the southern border of the Eocene Mount Skukum Volcanic Complex in fault and unconformity relationship with granitic and metamorphic rocks of the Coast Plutonic Complex. The east-west trending, moderately north-dipping Berney Creek Fracture splays host rhyolite dykes and quartz vein mineralization in two zones: the Kuhn and the Rainbow. Extensive propylitic (chlorite, pyrite) and silicic alteration are present in the granitoid wall rocks. The Rainbow is a deformed vein zone with clay gouge at the hanging wall contact. Within the vein lenses of rhyolite dyke, vein breccia with clasts of granodiorite, dyke rock and white quartz vein occur within a matrix of pale grey to black cryptocrystalline quartz with very fine-grained disseminated pyrite (2%). Locally, later quartz forms a discrete vein, and crudely banded 1 mm layers of galena occur near the hanging wall.
Reserves:
Drill-indicated reserves plus proven reserves:

RAINBOW ZONE: 405 644 tonnes grading 6.7 g/t Au and 365.1 g/t Ag.
KUHN ZONE: 338 872 tonnes grading 8.9 g/t Au and 169.7 g/t Ag (including 160 018 tonnes of 19.7 g/t Au and 565.7 g/t Ag).

Total Reserves: 863 485 tonnes grading 7.9 g/t Au and 288.3 g/t Ag.
Two production size adits at 1300 and 1350 m levels.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold-silver vein.
References:

INAC Reports: 1974 MIR, p. 146-147; 1981 YEG, p. 114; 1985-86 YEX, p. 156
Assessment Reports: 090871; 091772; 091925; 092143
Recent References: 1987 YEX, p. 104-105 (reserves, map, cross section); 1988 YEX, p. 45

22. RACA (105 D 3)

Geology: Cretaceous granodiorite is faulted against, and is unconformably overlain by, rocks of the Eocene Mount Skukum Volcanic Complex. At the southeast margin of the complex, a fault zone hosts an intrusive contact breccia mineralized with chalcopyrite, pyrite, malachite and azurite.
Geochemistry: Grab samples (1972) indicate an average of 0.11% Cu in the copper mineralized zone. Reconnaissance channel sampling (1985) has identified several zones of gold mineralization with several 10 m chip samples assaying over 0.34 g/t Au and one 20 m chip sample assaying 4.45 g/t Au and 21.9 g/t Ag.
Classification: Eocene(?), magmato-hydrothermal, shallow volcanic-hosted gold-silver hydrothermal breccia.
References:

INAC Reports: 1971-72 MIR, p. 55; 1985-86 YEX, p. 157
Assessment Reports: 091769
Other: Findlay (1969a, p. 56-57)

24. GODDELL (105 D 3)

Geology: The area is underlain by Cretaceous porphyritic granodiorite containing pendants of Paleozoic schist and sedimentary and volcanic rocks of the Triassic Lewes River Group. It is intruded by rhyolite dykes and stocks of Eocene age. Several quartz-barite-jamesonite (?) veins cut the granodiorite.
Geochemistry: Grab samples collected by Morin had values of up to 8 g/t Au, 175 g/t Ag, 42% Sb, 0.95% Pb, 160 ppm Hg and 57 ppm U. Approximately 150 m north of the showing, a 0.5 m wide quartz vein assayed 2.2 g/t Au. Approximately 400 m north of the showing, a 0.1 m wide quartz vein, in altered granodiorite next to rhyolite dykes, returned 0.034 g/t Au and 159 g/t Ag.

Selected samples assayed as follows:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
14	0.003opt	0.37opt	43.0	0.06%	730.
15	0.008opt	5.13opt	120.	0.95%	3600.
16	0.003opt	1.06opt	120.	0.49%	1.97%
17	1	GT 10.0	51.0	1000	1300.

	Cd ppm	Mn ppm	As ppm
14	8	7	INF
15	120	10	61
16	170	3	INF
17	18	52	58

	Sb ppm	Te ppm	Hg ppb	Tl ppm
14	10.3%	LT 0.1	33 000	LT 20
15	1.18%	LT 0.1	160 000	LT 20
16	42.0%	INF	71 000	20
17	6200.	LT 0.1	41 000	LT 20

	Bi ppm	W ppm	Mo ppm	U ppm
14	0.8	INF	3.0	57.0
15	0.2	LT 100	5.0	9.0
16	1.3	INF	LT 0.5	1.1
17	0.2	LT 100	LT 0.5	4.1

Sample description:
14 - Chip sample across 0.3 m interval of 8 cm quartz-stibnite vein with phyllic wallrock alteration;
15 - About 40 m below sample 14, elev. 4880 ft. a.s.l.. Chip sample across 1 m wide quartz-stibnite vein trending 100 degrees and dipping 30 degrees north; phyllic wallrock alteration;
16 - Grab sample of massive jamesonite from sloughed-in trench exposure of quartz-barite-jamesonite vein trending 045 degrees and dipping 30 degrees northwest; vertical drillhole at site; advanced argillic alteration above vein is at least up to 4 m thick;
17 - Grab sample of massive barite and quartz from same site as sample 16
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated antimony-silver-gold veins.
References:
INAC Reports: 1976 MIR, p. 150; 1985-86 YEX, p. 158
Assessment Reports: 091809; 091931
Recent References: 1987 YEX, p. 106 (Assays); 1988 YEX, p. 45-46

25. PORTER (105 D 3)

Geology: Granitic and metamorphic rocks of the Coast Plutonic Complex are intruded by rhyolite dykes and plugs of the Eocene Mount Skukum Volcanic Complex. Several veins are hosted by granite and strike about 103 degrees with a northerly dip of 40 to 50 degrees. Mineralization is mainly stibnite and sphalerite in a quartz gangue.

Geochemistry: 1984 sampling of the main vein at surface gave a best assay of 6.9 g/t Au, 2785.3 g/t Ag and 7.4% Sb across 0.25 m. Best underground assay was 3.7 g/t Au, 1680.0 g/t Ag and 8.0% Sb across 0.15 m.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
18	LT 1	LT 0.5	LT 0.5	21	38.0
19	1	LT 0.5	LT 0.5	19	35.0
20	1	GT 10.0	26.0	4	78.0
21	0.021opt	20.8opt	460.	4.31%	1.15%

	Cd ppm	Mn ppm	As ppm
18	1	610	5
19	LT 1	480	8
20	1	610	12
21	410	17	INF

	Sb ppm	Te ppm	Hg ppb	Tl ppm
18	38.0	LT 0.1	200	20
19	64.0	LT 0.1	260	LT 20
20	110.	LT 0.1	2700	LT 20
21	6.02%	LT 0.1	280 000	LT 20

	U ppm	Bi ppm	W ppm	Mo ppm
18	1.6	LT 0.1	4	5.0
19	2.5	LT 0.1	LT 1	3.0
20	3.5	0.3	5	3.0
21	7.8	0.3	INF	2.0

Sample Description:
18 - Green argillic and propylitic alteration of granodiorite;
19 - Brown argillic and propylitic alteration of granodiorite;
20 - Altered granodiorite with abundant quartz veinlets;
21 - Jamesonite-bearing quartz vein material from scree below adit dump;

Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated antimony-gold-silver-lead veins.

References:

INAC Reports: 1984 YEX, p. 71, 75
Assessment Reports: 091575; 091931
Other: Bostock (1941, p. 36-37); Bostock (1957, p. 335-336)
Recent References: 1987 YEX, p. 106

26. BECKER COCHRAN (105 D 3)

Geology: Cretaceous granodiorite containing remnants and roof pendants of older metamorphic rocks and intrusive to Jurassic Tantalus Group conglomerate forms the country rock that is intruded by a rhyolite porphyry plug of Eocene age. A black, pyritic shear zone at the southern margin of the plug trends 130 degrees and contains fine pyrite, stibnite and massive knots of coarse stibnite crystals as irregular lenses and patches in the quartz gangue within the shear zone.

Reserves: A 1974 estimate of probable and possible reserves is 140 000 tons of 4% Sb.
Geochemistry: Soil samples near the old workings have given values up to 1500 ppb Au and anomalies 1 km north, 1 km east and 2 km west have given values of up to 630 ppb, 895 ppb and 545 ppb Au respectively.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
9	18	1.0	41.0	18	220.
11	TRACE	0.17opt	67.0	0.07%	1.13%
12	LT 1	LT 0.5	LT 0.5	14	32.0
13	5	LT 0.5	6.0	35	85.0

	Cd ppm	Mn ppm	As ppm
9	2	20	9100
11	80	29	INF
12	LT 1	150	36
13	LT 1	420	65

	Sb ppm	Te ppm	Hg ppb	Tl ppm
9	820.	0.7	75 000	100
11	32.6%	0.7	130 000	LT 20
12	48.0	INF	480	LT 20
13	170.	LT 0.1	1800	LT 20

	U ppm	Bi ppm	W ppm	Mo ppm
9	2.8	1.3	5	5.0
11	0.1	1.0	INF	1.0
12	6.1	LT 0.1	LT 1	2.0
13	6.5	0.4	1	6.0

Sample Description:
9 - Grab sample from a lens of highly sheared altered chloritic (?) black rock immediately east of the Upper west adit;
11 - Grab sample of stibnite-arsenopyrite-quartz vein from dump area near the lower production adit;
12 - Grab sample from outcrop of argillically altered rhyolite 10 m west of the east adit;
13 - Grab sample of argillically altered conglomerate or breccia(?) 12 m west of the east adit;
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated antimony vein.
References:

INAC Reports: 1974 MIR, p. 147-148; 1976 MIR, p. 149-150; 1977 MIR, p. 60; 1983 YEG, p. 160; 1985-86 YEX, p. 159
Assessment Reports: 091473; 091820; 091931
Other: Smith (1982); Hylands (1966); Bostock (1957, p. 423-424); Wheeler (1961, p. 132); Bostock (1941, p. 35); Green (1965, p. 42); Green (1966, p. 52-55); Findlay (1967, p. 43-45); Findlay (1969a, p. 57)
Recent References: 1987 YEX, p. 106

28. MT. ANDERSON (105 D 3)

Geology: Cretaceous granodiorite of the Coast Plutonic Complex is intruded by a small plug of Eocene rhyolite, near which the former is fractured, altered and cut by quartz veins, basalt and andesite dykes. Quartz veins with pyrite, galena and sphalerite occur to the north whereas vuggy, banded and radial-colloform chalcedony-fluorite veins occur to the south.
Geochemistry: Drifting along the Whirlwind vein in the early 1900's led to average values of 2.7 g/t Au and 219 g/t Ag over a width of 0.5 m and a length of 24 m. A 9 by 15 m mineralized shoot had an average grade of 69 g/t Au and 1714 g/t Ag determined in 1968.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold-silver vein.
References:

INAC Reports: 1979-80 YGE, p. 166; 1985-86 YEX, p. 160-162
Assessment Reports: 091846; 091811; 090598; 092514; 092623
Other: Wheeler (1961, p .124-125); Bostock (1957, p. 334)
Recent References: 1988 YEX, p. 47

29. TALLY-HO (105 D 3, 6)

Geology: Limestone, siltstone and quartzite of the Triassic Lewes River Group is intruded by Cretaceous granodiorite and Eocene rhyolite and dacite dykes. Mineralization, principally argentiferous galena, occurs in a 4 to 5 foot wide quartz-impregnated fault-breccia zone cutting granodiorite of the Coast Plutonic Complex.
Geochemistry: The only documented shipment was from 1917 to 1918 with 10.371 tonnes assaying 80.23 g/t Au, 174.85 g/t Ag and 6.85% Pb. Five grab samples taken in 1966 from the adits averaged 120.57 g/t Au, 144.00 g/t Ag and 6.8% Pb.
Classification: Cretaceous to early Tertiary, magmato-hydrothermal, epizonal gold-silver-lead vein.
References:

INAC Reports: 1983 YEG, p. 160; 1985-86 YEX, p. 162-163
Assessment Reports: 091622; 091822; 092158
Other: Bostock (1957, p. 334, 419); Wheeler (1961, p. 123); Findlay (1967, p. 45); Findlay (1969a, p. 58)
Recent References: 1988 YEX, p. 47

30. MT. WHEATON (105 D 3)

Geology: Granitic rocks of the Coast Plutonic Complex intrude Mesozoic sedimentary and volcanic rocks and all are intruded by Eocene rhyolite dykes. Steep faults cut these rocks and are host to mineralized quartz veins.
Geochemistry: Trench samples across the Mt. Wheaton vein are presented below:

Dist. from end (m)	Width m	Au g/t	Ag g/t	Pb %	Cu %
0	0.3	294.8	144.0	-	0.3
8	0.8	26.7	50.1	-	-
10	0.7	116.6	82.3	1.32	-
11	0.5	144.0	63.8	0.18	-

Classification: Cretaceous to early Tertiary, magmato-hydrothermal, epizonal gold-silver vein.
References:

INAC Reports: 1983 YEG, p. 165; 1984 YEX, p. 77; 1985-86 YEX, p. 163-164

Assessment Report: 091626
Other: Wheeler (1961, p. 122-123)
Recent References: 1988 YEX, p. 47-48 (bulk sample assay)

31. BUFFALO (HUMP) (105 D 3)

Geology: Several quartz veins are situated within metamorphosed sedimentary and volcanic rocks of the Lewes River Group and intrusive granite on the north side of Mount Stevens. Free gold and electrum are reported from the Golden Slipper claim and galena and free gold on the Sunrise claim.
Geochemistry: Trenching in 1985 uncovered zones which assayed up to 2.5 g/t Au with 875 g/t Ag over 50 cm.
Classification: Cretaceous to early Tertiary, magmato-hydrothermal, epizonal gold-silver-lead vein.
References:
INAC Reports: 1985-86 YEX, p. 165
Assessment reports: 091794
Other: Bostock (1957, p. 333-334)
Recent References: Hart and Pelletier (1989a)

32. MT. STEVENS (MIDNIGHT, HIDDEN) (105 D 3)

Geology: Volcanic rocks of the Lewes River Group are cut by a 300 m wide dyke of late Cretaceous quartz diorite that is intruded by rhyolite porphyry and andesite dykes. Gold mineralization is localized within the rhyolite dykes which are extensively fractured, sericitized and mineralized with pyrite, galena and minor sphalerite. The mineralization is associated with quartz stockwork or intensive silicification along crosscutting fracture planes or shear zones. Galena-bearing quartz veins and galena-sphalerite-pyrite fracture fillings also occur within the quartz diorite.
Geochemistry: Rock chip samples from three rhyolite showings all assayed less than 0.10 g/t Au and silver ranged from 1.03 g/t over 15 m to 2.4 g/t over 5 m. A continuous chip sample across 1.1 m of quartz-veined rhyolite assayed 0.82 g/t Au. Fracture fillings in quartz diorite assayed 7.5 g/t Ag, 1.4 g/t Au, 0.48% Pb and 0.63% Zn and a grab sample of galena-bearing quartz vein in quartz diorite float assayed 486 g/t Ag, 22 g/t Au and 0.99% Pb.
Classification: Eocene, magmato-hydrothermal, epizonal, intrusive-proximal gold vein stockwork, disseminations and vein.
References:
INAC Reports: 1981 YEG, p. 115; 1984 YEG, p. 70; 1985-86 YEX, p. 165-167
Assessment Reports: 091548; 090894; 091841; 091844; 091874; 091910; 091991
Recent References: 1987 YEX, p. 23, 31, 107 (assays); 1988 YEX, p. 48 (assays); Hart and Pelletier (1989-1)

33. CROMWELL (105 D 2)

Classification: Silver-lead-copper vein.
References: N.C.M.I.

34. MILLHAVEN (105 D 2)

Geology: Quartz-carbonate veins cutting volcanic rocks carry minor arsenopyrite.
Geochemistry: A grab sample reported to assay 6.9% Cu, 4.6% Pb and 318.8 g/t Ag (?).

Classification: Late Cretaceous to early Tertiary magmato-hydrothermal copper-lead-silver vein.
References:
INAC Reports: 1985 YEX, p. 85, 1985-86 YEX, p. 163-164
Assessment Reports: 091626

35. GOLD HILL (DAIL CREEK) (105 D 6)

Geology: Upper Triassic andesite and Cretaceous granodiorite are intruded by an Eocene plug and cut by a 305 m long tetrahedrite-bearing quartz vein and a 30 m quartz-calcite-siderite vein. Silicified and carbonatized rhyolite locally contains tetrahedrite and is overlain by barite float.
Geochemistry: A grab sample of the altered rhyolite assayed 761 g/t Ag. The 30 m vein was chip sampled across in three places:

Dist. from End	Au g/t	Ag g/t	Pb %	Width m
0 m	10.20	555.4	3.76	0.48
8 m	203.99	3325.6	6.48	1.00
30 m	4.50	233.1		0.60

A chip sample collected by Morin was analysed as below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
22	0.095opt	0.55opt	33.0	350	200.
	Cd ppm	Te ppm	Mn ppm	As ppm	Tl ppm
22	8	12.0	120	LT 100	LT 20
	Sb ppm	Bi ppm	Mo ppm	Hg ppb	W ppm
22	2000.	2.8	3.0	5800	LT 100
	U ppm				
22	2.0				

Sample Description:
22 - Upper Dail Creek at 4880 ft. a.s.l.. Chip sample across 0.3 m wide quartz vein trending 105 degrees and dipping 80 degrees south and hosted in granodiorite;
Note high Te.
Classification: Eocene, magmato-hydrothermal, epizonal, intrusive-proximal gold-silver vein.
References:
INAC Reports: 1985-86 YEX, p. 163-164
Assessment Report: 091626
Other: Smith (1982)

36. GOLD REEF (105 D 6)

Geology: Cretaceous granodiorite and a northwest-trending belt of Triassic Lewes River Group metasedimentary and metavolcanic rocks including limestone, limestone breccia, quartzite, schist, andesite and andesite breccia are intruded by dykes and plugs of Eocene rhyolite porphyry. Locally, there is silicification and brecciation of the limestone and silicification of fractures and weakness zones

in the granodiorite. Quartz and quartz-calcite veins up to 2 m wide are present in granodiorite and Lewes River Group rocks. The Gold Reef vein is continuous over 300 m with an average width of 1.5 m. Native gold and telluride minerals are reported to occur in isolated pockets, but most of the quartz contains minor pyrite with trace amounts of gold and silver. Veins in limy metasediments are narrow and locally contain galena, tetrahedrite, malachite and azurite.
Geochemistry: Grab samples of silicified, brecciated limestone with narrow veins of quartz-galena-tetrahedrite, galena or tetrahedrite returned values up to 23 g/t Au and up to 1330 g/t Ag. Chip samples across a 5 m trench in narrow quartz-galena-tetrahedrite veins within carbonate-rich schist gave 377 g/t Ag with weakly to moderately anomalous Au, Pb and Cu.
A sample collected by Morin is listed below:

SAMPLE	Au opt	Ag ppm	Cu ppm	Pb ppm	Zn ppm
23	0.015	0.29opt	5.0	210	41.0
	Cd ppm	Te ppm	Mn ppm	As ppm	Tl ppm
23	2	3.5	84	3	LT 20
	Sb ppm	Sn ppm	Bi ppm	Hg ppb	U ppm
23	400.	0.4	0.2	2000	0.4

Sample Description:
23 - Chip sample across 0.5 m wide quartz vein in granodiorite flanked by propylitic alteration and trending 110 degrees and dipping vertically;
Note high Te.
Classification: Eocene, magmato-hydrothermal, epizonal, intrusive-proximal gold-silver vein.
References:
INAC Reports: 1985-86 YEX, p. 163-164, 167-168, 182-183
Assessment Reports: 091793; 091801; 091818
Other: Smith (1982); Cairnes 1916, p. 432
Recent References: 1988 YEX, p. 48 (assays)

37. IDAHO HILL (UNION MINES) (105 D 6)

Geology: The area is underlain by Lower Jurassic Laberge Group rocks consisting of massive, silicified arkose, greywacke and interbedded tuffs intruded by Cretaceous porphyritic granodiorite batholith and feldspar porphyry dykes and an Eocene rhyolite plug. Sheared veins of pyrite, arsenopyrite, quartz and calcite with galena and sphalerite are present, ranging from 1 to 40 ft. in width along a strike length of 1200 ft.
Geochemistry: Trench chip samples assayed 0.05 oz/ton Au, 2.22 oz.ton Ag and 0.36% Pb.
Classification: Eocene, magmato-hydrothermal, epizonal gold-silver-lead vein proximal to an intrusive plug.
Comments: Also known as Dumb Donkey.
References:
INAC Reports: 1971-72 MIR, p. 53; 1981 YEG, p. 117
Other: Smith (1982); Wheeler (1961, p. 135-136)

39. LEGAL TENDER (105 D 6)

Geology: Granitic rocks of the Coast Plutonic Complex host quartz veins up to 2.13 m wide.
Geochemistry: Grab samples are up to 326 g/t Au and 2204 g/t Ag. Grab samples taken by Whitehorse Copper Mine in 1976 assayed 0.06 oz/ton Au, 1.76 oz/ton Ag and 3.40% Pb from the No. 1 Vein and 0.41 oz/ton Au, 2.01 oz/ton Ag and 3.90% Pb from the Legal Tender vein (R. Strosbein, Personal Communication).
Classification: Late Cretaceous to early Tertiary magmato-hydrothermal, epizonal gold-silver-lead vein.
References:

INAC Reports: 1985-86 YEX, p. 163-164, 182-183, 200-201
Assessment Reports: 091626; 091949
Other: Cairnes (1916, p. 112-113)
Recent References: 1987 YEX, p. 30, 107-109 (Map, assays)

44. INGRAM (105 D 13)

Geology: Sedimentary rocks are intruded by granitic rocks which in turn are cut by a mineralized shear zone. The mineralized zone is 1 1/2 ft. wide, is bounded by 2 ft. of rusty sheared granitic rock and strikes 010 degrees with a dip of 80 degrees west.
Geochemistry: A selected sample assayed trace Au, 110.6 g/t Ag, 8.5% Zn, 1.89% Pb and 0.54% Cu.
Classification: Silver-lead-zinc-copper vein.
References:

Wheeler (1961, p. 136-137)

45. CUTOFF (105 D 14)

Classificaition: Silver-gold vein.
References:

N.C.M.I.

48. ACE (105 D 15)

Classification: Silver-gold-lead-zinc-copper vein.
References:

N.C.M.I.

49. LITTLE CHIEF (105 D 11)

See Whitehorse Copper showings, deposits.

63. MARSH (105 D 8)

Geology: Quartz-carbonate stockwork occurs in mariposite-rich carbonatized Taku Group volcanics of probable Pennsylvanian or Permian age. Several stockwork zones up to 30 m wide consist of chalcedony-siderite-calcite stringers up to 2 cm thick which may make up 80% of the rock. The

veins contain 10% pyrite, 1% arsenopyrite and some chromite and chalcopyrite. The host rock is dark green with a brecciated and sheared groundmass containing angular chert fragments, minor pyrite and magnetite.
Geochemistry: Samples from diamond drill core assayed up to 2.0 g/t Au in fractured and altered volcanic rocks.
Classification: Triassic (?) metamorpho-hydrothermal gold vein stockwork.
References:
INAC Reports: 1982 YEG, p. 114; 1985-86 YEX, p. 168-169
Assessment Reports: 091860; 091412; 091730
Recent References: 1987 YEX, p. 109-110, 139 (assays)

66. RAILROAD (105 D 2)

Geology: Three short pre-World War I adits and trenches are reported in sheared and silicified andesitic volcanic rocks with copper staining (malachite?) and are host to a silver-bearing vein.
Classification: Late Cretaceous to early Tertiary magmato-hydrothermal, shallow volcanic-hosted silver vein.
Comments: Also known as Dundalk.
References:
INAC Reports: 1985 YEX, p. 83-85
Assessment Report: 091626
Recent References: Hart and Pelletier (1989b)

67. GROUSE (105 D 11)

Geology: Erratic skarn zones up to 30.5 m thick and containing garnet, epidote, actinolite, diopside and magnetite with minor serpentine occur at the contact between Triassic Lewes River Group limestone and Cretaceous granodiorite and gabbro. Copper, gold and silver are associated with actinolite-diopside-magnetite skarn containing chalcopyrite, bornite and pyrrhotite.
Geochemistry: Several diamond drill intersections are noteworthy: 6.1 m in DDH KT 3 contained 5.6% Cu, 271 g/t Ag and 1.0 g/t Au; 4.6 m of DDH KT 7 contained 9.9 g/t Au within which 0.4 m assayed 87.4 g/t Au and 5.8% Bi.
Classification: Copper-gold-silver-bismuth skarn.
Comments: Also known as Jackson Lake property.
References:
INAC Reports: 1971-72 MIR, p. 52; 1974 MIR, p. 143-144; 1975 MIR, p. 101-104; 1976 MIR, p. 152; 1983 YEG, p. 161; 1984 YEX, p. 73; 1985-86 YEX, p. 169-170
Assessment Report: 091537; 091594; 091899; 091479
Recent References: Hart and Pelletier (1989b)

71. HARNIAK (105 D 11, 12)

Geology: Granite is cut by a bornite-bearing quartz vein up to 10 ft. thick and traceable along strike for about 100 ft.

Geochemistry: A grab sample taken in 1972 by Whitehorse Copper Mine is reported to assay 9.43% Cu, 0.02 oz/ton Au and 4.50 oz/ton Ag.
Classification: Mid-Cretaceous, magmato-hydrothermal, mesozonal copper-gold-silver vein.
References:
INAC Reports: 1984 YEX, p. 79
Other: R. Stroshein, Personal Communication.

72. SHAW (RIDGE) (105 D 3)

Geology: Intracaldera felsic ash flows of the Bennett Lake Cauldron Subsidence Complex overlie granitic rocks of the Coast Plutonic Complex and are intruded by dykes and sills, and are host to a swarm of veins 0.1 to 5.0 m in width. Argillic alteration and bleaching of country rocks occurs on either side of the veining. Mineralization is present as galena, stibnite, chalcopyrite, malachite, azurite, sphalerite, arsenopyrite, pyrite, scorodite, jarosite and pyrrhotite.
Geochemistry: Chip sample assays of 2.2% Cu, 1.7% Pb, 0.44% Zn, 654.9 g/t Ag and trace Au over 30 m (along vein length?); 1.54% Cu, 7.23% Pb, 1.48% Zn, 573.4 g/t Ag and 5.45 g/t Au over 1.2 m were reported. Analyses of samples collected by Morin are presented below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
42	0.006opt	0.34opt	290	1800	460
43	0.045opt	0.10opt	16.0	43	7.0
44	47	2.0	12.0	250	320.
	Cd ppm	Te ppm	Mn ppm	As ppm	Tl ppm
42	8	1.4	560	GT 10 000	LT 20
43	LT 1	1.0	8	GT 10 000	LT 20
44	5	LT 0.1	1100	290	LT 20
	Sb ppm	Hg ppb	Bi ppm	W ppm	Mo ppm
42	78.0	60	7.2	LT 100	13.0
43	460.	10	34.0	LT 100	LT 0.5
44	32.0	30	0.2	5	78.0
	U ppm				
42	4.3				
43	LT 0.1				
44	0.9				

Sample Description:
42 - Chip sample across 1 m interval of 14 cm wide quartz-arsenopyrite vein and flanking argillic wallrock alteration with manganese and limonite stain at 5450 ft. a.s.l.;
43 - Composite grab sample of quartz-arsenopyrite-fluorite vein mineralization;
44 - Banded chalcedony veinlets with vein breccia, cockscomb texture, fluorite and kaolinite at 6200 ft. a.s.l.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
Comments: The RIDGE claims are adjacent to the SHAW and contain similar mineralization.
References:
INAC Reports: 1981 YEG, p.116

Assessment Report: 090910; 092518
Other: Lambert (1974)
Recent References: 1988 YEX, p. 49

86. COMBS (105 D 10)

Classification: Gold vein.
References: N.C.M.I.

89. TONY (105 D 9)

Classification: Lead-zinc-silver vein
References: N.C.M.I.

91. PART (105 D 3)

Geology: Densely welded ignimbrite of the Eocene Bennett Lake Cauldron Subsidence Complex is cut by narrow fracture zones infilled with gold-bearing vein material.
Geochemistry: The best values were obtained from a 40 cm chip sample which assayed 57.94 g/t Au and 3583 g/t Ag. 1986 drilling found values up to 3.6 g/t Au and 50 g/t Ag in sulphide bearing quartz veins at depth.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
References:
INAC Reports: 1979-80 YGE, p. 167; 1985-86 YEX, p. 171
Assessment Report: 090592; 091792; 091926
Recent References: 1987 YEX, p. 30, 111 (assays); Doherty et al. (1988); 1988 YEX, p. 49

92. PROSE (105 D 5)

Geology: Metasedimentary rocks are intruded by Coast intrusions and Eocene felsic plugs. Galena and sphalerite occur within silicified diopside-garnet skarn developed within bands of crystalline limestone.
Geochemistry: The best chip sample from a trench contained 319.2 g/t Ag, 18.91 % Pb and 9.9% Zn across 2.5 m.
Classification: Cretaceous to early Tertiary, magmato-hydrothermal, epizonal, intrusive-distal lead-zinc-silver skarn.
References:
INAC Reports: 1978 MIR, p. 35; 1979-80 YGE, p. 165; 1982 YEG, p. 114-115
Assessment Reports: 090490; 090518

97. ART (105 D 2)

Geology: Granodiorite hosts several veins consisting of grey to white quartz with arsenopyrite, pyrite, galena, sphalerite and chalcopyrite.
Geochemistry: Drilling in 1979 intersected granodiorite with disseminated pyrite and pyrrhotite and strongly oxidized zones. A 1979 drill hole intersection gave 2.12 g/t Au and a trace of silver across 3.65 m.

Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-associated gold vein.
References:
INAC Reports: 1979-80 YGE, p. 167
Assessment Report: 090595; 091839
Other: Roots (1982)
Recent References: 1987 YEX, p. 112, 140

100. ABI (105 D 16)

Geology: Pink quartz monzonite contains sphalerite and galena with pyrite disseminated in a very fine grained, white to pink, siliceous shear zone. Manganese oxide staining is evident.
Geochemistry: Grab sample assayed 1.40% Pb, 0.44% Zn and 1.36 oz/ton Ag.
Classification: Silver-lead-zinc vein.
References:
INAC Reports: 1975 MIR, p. 108-109

104. BEN (105 D 2)

Classification: Gold-silver vein.
References:
INAC Reports: 1978 MIR, p. 33
Recent References: 1987 YEX, p. 30, 100, 114, 140

105. RAM (105 D 4)

Geology: Metasedimentary rocks are intruded by Coast intrusions and Eocene quartz feldspar porphyry plugs. Skarn zones up to 15 m in length occur in the metasedimentary rocks adjacent to quartz feldspar porphyry. They contain sphalerite and galena within assemblages of epidote-diopside-garnet-quartz-carbonate.
Classification: Eocene, magmato-hydrothermal, epizonal lead-zinc-silver skarn proximal to an intrusive plug.
References:
INAC Reports: 1978 MIR, p. 34-35; 1982 YEG, p. 114-115
Other: Watson, P.H., Godwin, C.I. and Armstrong, R.L., (1981, p. 123-127)

110. HODNETT (105 D 6)

Classification: Gold-silver-copper vein.
Recent References: 1988 YEX, p. 50

112. ODD (105 D 2)

Geology: Volcanic rocks of the Triassic Lewes River Group include feldspar porphyry dacite, basalt and volcanic breccia/conglomerate.
Geochemistry: A diamond drill intersection of 1.37 m through a quartz vein assayed 46.3 g/t Au and 19.9 g/t Ag.

Classification: Late Cretaceous to early Tertiary, epizonal gold-silver vein.
References:
INAC Reports: 1982 YEG, p. 115-116; 1985-86 YEX, p. 173
Assessment Reports: 091047; 091643
Recent References: 1987 YEX, p. 116; Doherty et al. (1988)

114. NAIAD (105 D 3)

Geology: Granitic and metavolcanic rocks of the Coast Plutonic Complex just outside the northwest boundary of the Bennett Lake Cauldron Complex are cut by andesite, rhyolite and aplite dykes of probable Eocene age.
Geochemistry: Samples of copper-stained quartz veins with trace galena contain 50.0 ppm Ag and GT 10 000 ppm Pb.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated silver-lead veins.
References:
INAC Reports: 1982 YEX, p. 116; 1985-86 YEX, p. 119
Assessment Reports: 091434; 092622
Recent References: 1987 YEX, p. 117-118 (assays); Doherty et al. (1988)

115. MT SKUKUM MINE (105 D 3)

Geology: The Eocene Mount Skukum Volcanic Complex unconformably overlies granitic and metamorphic rocks of the Cretaceous Coast Plutonic Complex. Flat-lying andesitic lava flows and volcaniclastic rocks are intruded by rhyolite and rhyolite breccia dykes and are cut by N-NE trending faults that host five significant veins. The three most important being the Main or Cirque Zone, Brandy Zone and Lake Zone. Vein mineralogy is quartz - calcite - electrum with rare to very minor sulphides. Textures are characteristically epithermal with cellular bladed calcite, vugs, colloform banding and chalcedony breccia. Several small heterolithic breccia bodies with siliceous matrices and a nearby higher elevation area of intense low-pH alteration (alunite, pyrophyllite, cryptocrystalline silica) suggest a paleo-hot springs environment.
Reserves: In 1986 and 1987, more than 2.4 million grams gold was recovered from 173 000 tonnes of ore from the Cirque Zone. Gold-silver ratio is about 1:1.2. In 1988, the mine ran until August 12. The mill was shut down on June 21, 1988 due to inconsistent mill feed. LAKE Zone ore reserves, drill proven at 202 000 tonnes of 10.6 g/t Au, were not confirmed by mining. Between January and June 1988, the CIRQUE and LAKE zones produced 28 603 milled tonnes containing 171 202 grams of gold. Remaining reserves are estimated at 36 000 tonnes grading 13.7 g/t Au.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
Comments: Also known as KUKU
References:
INAC Reports: 1982 YEG, p. 116; 1983 YEG, p. 162-164; 1984 YEX, p. 12, 71; 1985-86 YEX, p. 175
Assessment Reports: 091061; 091391; 091462; 091474; 091481; 091540; 091652; 091920
Other: Smith (1983); Pride (1986, 1985); McDonald and Godwin (1986); McDonald, Godwin and Stewart (1986); McDonald (1987)
Recent References: 1987 YEX, p. 14, 15, 17, 23, 30, 119, 140; Doherty et al. (1988); 1988 YEX, p. 50-51, 253

117. EVIEW (105 D 6)

Geology: Lower Jurassic Laberge Group siltstone and early Tertiary or older felsic volcanic rocks are intruded by granodiorite and sills of rhyolite and dacite porphyry and cut by prominent north and northwest trending faults. A 2 m wide shear zone at the intersection of a north-trending fault with the siltstone-rhyolite contact contains an oxidized breccia with quartz and rhyolite fragments in a matrix of fine to coarse crystalline pyrite with arsenopyrite, galena, sphalerite and minor chalcopyrite.
Geochemistry: Rock samples from the silicified contact zone contained 6600 ppm Pb, 990 ppm Zn and 176 ppm Ag.
Classification: Eocene, magmato-hydrothermal, epizonal, intrusive-proximal silver-lead-zinc vein breccia.
References:

INAC Reports: 1982 YEG, p. 117; 1985-86 YEX, p. 176
Assessment Reports: 091836; 091044; 091431
Recent References: 1987 YEX, p. 119; Doherty et al. (1988)

129. GLENLIVET (105 D 3)

Geology: Eocene pyroclastic rocks of the Bennett Lake Cauldron Complex unconformably overlie Cretaceous granodiorite and enclose remnants of metasedimentary Paleozoic (?) basement rocks. Two zones of mineralization have been determined. The "Scarlet Zone" is an area of red and orange gossan 600 m across over sericite- and clay-altered spherulitic rhyolite. Stringers of chalcedonic quartz and quartz breccia veins appear to be associated with the alteration and are related to numerous north- to northwest-trending faults, shears and fractures. The "After Eight Zone" is a fault zone in rhyolite lapilli tuff accompanied by strong argillic alteration associated with quartz stringers, patchy silicification and local concentrations of pyrite, jarosite and minor galena, fluorite, calcite and malachite.
Geochemistry: Rock and talus samples from the "Scarlet Zone" assayed up to 2350 ppb Au, 7.4 ppm Ag and 1000 ppm As, and from the "After Eight Zone" up to 220 ppb Au and 63 ppm Ag.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
References:

INAC Reports: 1982 YEG, p. 117-118; 1983 YEG, p. 161; 1985-86 YEX, p. 177-178
Assessment Reports: 091667; 091916
Other: Lambert (1974)
Recent References: 1987 YEX, p. 31, 120; Doherty et al. (1988); 1988 YEX, p. 51-52 (assays)

135. OLLIE (105 D 6)

Classification: Silver-copper-gold vein.
References:

INAC Reports: 1985-86 YEX, p. 179-180
Recent References: 1987 YEX, p. 30, 121, 140

136. JOE PETTY (105 D 2)

Geology: Grey intermediate lava flows with breccia and vesicular horizons host a vein 10 to 30 cm thick and traceable for 200 m. A 2 m thick oxide zone envelopes the vein. The vein appears parallel to flow contacts and blue-grey quartz occurs in the sheared parts. Galena and silver-bearing minerals are reported.

Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver-lead vein.
References:
Other: **Bostock** (1957, p. 151-156, 211-213, 252-256, 606-609); Roots (1981)
Recent References: Hart and Pelletier (1989a)

137. URANUS (105 D 2)

Geology: Breccia and streaky silicified intermediate to felsic (?) flows host a white quartz vein 30 to 130 cm thick bearing arsenopyrite, galena and pyrargyrite.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
References:
Bostock (1957, p. 151-156, 211-213, 252-256, 606-609); Roots (1981)

138. M & M (105 D 2)

Geology: Porphyry intermediate flow (or possible breccia body with felsic dyke sheets) hosts persistent quartz vein, 10 to 30 cm thick. Mineralogy includes arsenopyrite, pyrrhotite, stephanite and freibergite.
Classification: Late Cretaceous to early Tertiary, magmato-hydrothermal, shallow volcanic-hosted gold-silver vein.
References:
Bostock (1957, p. 151-156, 211-213, 252-256, 606-609); Roots (1981)

142. TYCON (105 D 3)

Geology: Cretaceous granodiorite is intruded by lamprophyre and feldspar porphyry dykes of probable Eocene age. Gold and silver occur in chalcedony stringers and iron oxides in shear zones within the granodiorite. Weak to intense propylitic alteration of the wall rocks, patchy silicification and minor argillic alteration accompanies veining.
Geochemistry: Best values from grab samples are 111.6 g/t Au and 9.6 g/t Ag. A 1986 diamond drill hole intersection over 2.9 m averaged 406 ppb Au and 24 ppm Ag within intensely clay-altered granodiorite with discontinuous silicification and some iron oxides.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold-silver vein and disseminations.
References:
INAC Reports: 1984 YEX, p. 72; 1985-86 YEX, p. 180
Assessment Reports: 091557; 091579; 091898
Recent References: Doherty et al. (1988)

143. LATER (105 D 5)

Geology: Paleozoic (?) metamorphic rocks are intruded by Cretaceous porphyritic granodiorite and overlain by an Eocene (?) volcanic centre outlier from the main Skukum Volcanic Complex. The

outlier is made up of a sequence of tuffs, flows, dykes and sills of rhyolite and andesite composition. Epithermal activity associated with the dyke intrusion has formed propylitic, argillic and skarn alteration and gold-silver mineralization in the volcanic rocks and underlying metasedimentary rocks. The 'skarn' zone consists of tremolite, wollastonite, garnet, diopside, epidote, calcite and quartz with galena, sphalerite, malachite, chalcopyrite and acanthite. The 'rhyolite' zone consists of strongly silicified and sericitized rhyolite lapilli tuff and the 'creek' zone consists of altered rhyolite with brecciated textures.
Geochemistry: Grab samples from the 'skarn' zone assayed up to 171 g/t Ag and 2430 ppb Au. A trench in the 'rhyolite' zone assayed 1550 ppb Au and 4800 ppm As over a width of 1.7 m and up to 600 ppb Au in adjacent altered and mineralized quartz-mica schist. Grab samples returned values up to 58 ppm Ag. Limonitic quartz stringers and stockwork with minor sericite and pyrite from float in the 'Creek' zone assayed 103 g/t Au and 6.5 ppm Ag.
Classification: Cretaceous, magmato-hydrothermal, katazonal, intrusive-proximal copper-lead-zinc-gold-silver skarn and Eocene, magmato-hydrothermal, shallow to surface gold-silver vein stockwork, breccia and replacement.
References:

INAC Reports: 1983 YEG, p. 162; 1985-86 YEX, p. 181-182
Assessment Reports: 091526
Recent References: 1988 YEX, p. 51, 53 (assays)

147. BEE (105 D 14)

Geology: Quartz-sulphide vein in hornfels zone peripheral to a granitic stock.
Geochemistry: In 1982, drilled core assayed 1.8% Pb, 1.58% Zn, 33.6 g/t Ag and 0.34 g/t Au over 1.5 m. 1985 work indicates the presence of a Tertiary (?) rhyolite plug and dykes. The plug is cut by an east-trending gold-bearing shear zone which contains veins of quartz-pyrite-pyrrhotite-galena-sphalerite with minor chalcopyrite and arsenopyrite. The longest vein has a 60 m strike length.
Classification: Silver-gold-lead-zinc vein. Copper skarn
References:

INAC Reports: 1983 YEG, p. 162; 1985-86 YEX, p. 184
Assessment Reports: 091489; 091682; 091948
Recent References: 1987 YEX, p. 122-123

153. SCAR (105 D 3)

Geology: A rhyolite porphyry plug of probable Eocene age intrudes Cretaceous granodiorite of the Coast Plutonic Complex. Near the contact, numerous rhyolite dykes are accompanied by quartz veins, basalt dykes and minor intrusive breccia. Mineralization consists of pyrite, galena, sphalerite and minor chalcopyrite disseminated within zones of intense silicification that appear unrelated to veins or fracture systems.
Geochemistry: Rock analyses yielded up to 28 000 ppm Zn, 2000 ppm Pb, 520 ppm Cu, 390 ppm Ag and 400 ppb Au.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated zinc-silver-gold dissemination and replacement.
References:

INAC Reports: 1985-86 YEX, p. 185-186
Assessment Reports: 091805
Recent References: Doherty et al. (1988)

166. JJ (105 D 4)

Geology: Cretaceous granite and granodiorite are intruded by Eocene andesite porphyry and diabase dykes of the Mount Skukum Volcanic Complex. Galena- and pyrite-bearing quartz veins about 0.5 m thick and 5 to 20 m long appear to be associated with the dykes. A 5 m wide rusty quartz vein with an 040 degree strike contains pods of galena, pyrite and chalcopyrite with traces of molybdenite.
Geochemistry: Grab sample of a quartz vein with galena and pyrite returned values of up to 2000 ppb Au, LT 50 ppm Ag, GT 10 000 ppm Pb, 580 ppm Zn and GT 1000 ppm As.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold-silver-lead vein.
References:
INAC Reports: 1985-86 YEX, p. 190
Assessment Reports: 091848
Recent References: 1987 YEX, p. 125-126

167. WAT (105 D 3)

Classification: Silver-lead-zinc-copper skarn, gold vein.
Recent References: 1988 YEX, p. 53-54

168. BOTWAT (105 D 5, 6)

Geology: Near the northern boundary of the Eocene Mount Skukum Volcanic Complex, felsic tuff and breccia and flow-banded spherulitic rhyolite overlie Cretaceous granodiorite. Quartz vein float material is vuggy and brecciated with chalcedonic banding.
Geochemistry: One rock chip sample of quartz vein float assayed 0.86 g/t Au.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-hosted gold vein.
References:
INAC Reports: 1985-86 YEX, p. 192
Assessment Reports: 091656; 091884; 092532
Recent References: 1988 YEX, p. 54-55

170. MR (105 D 3, 6)

Classification: Gold-silver vein.
References:
INAC Reports: 1985-86 YEX, p. 193
Recent References: 1987 YEX, p. 127; 1988 YEX, p. 55

173. WAL (105 D 3, 6)

Geology: The area covers part of the eastern boundary of the Mount Skukum Volcanic Complex. Eocene rhyolite flows, pyroclastics and associated syn-volcanic granodiorite breccia (epiclastic?) overlie Cretaceous granodiorite to the west. Andesite and rhyolite dykes and andesite porphyry plugs are abundant. A major north-trending fault is marked by a zone of granodiorite breccia, hematite staining

and intense clay alteration. Two veins of quartz-chalcedony breccia occur in northeast-trending, recessive-weathering granodiorite-hosted shear zones averaging 10 m wide. Minerals in the vein are quartz, pyrite, galena and chalcopyrite with minor carbonate, sphalerite and malachite.
Geochemistry: A grab sample of galena-bearing vein material assayed 93.1 g/t Au, 83.5 g/t Ag and 0.14% Pb. Elsewhere, quartz float containing 540 ppb Au occurs in a 600 by 1000 m area of microfractured hematite-stained granodiorite.
Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold-silver-lead vein and breccia.
References:
INAC Reports: 1985-86 YEX, p. 193, 195
Assessment Reports: 091666; 091912
Recent References: Doherty et al. (1988)

178. ROSSBANK (105 D 10)

Classification: Gold-silver vein.
References:
Assessment Reports: 092579
Recent References: 1988 YEX, p. 55-56 (map)

188. PEERLESS (105 D 2)

Classification: Gold-silver vein.
References:
INAC Reports: 1985-86 YEX, p. 206, 408-409
Other: Roots (1981)

189. PRIDE OF YUKON (105 D 2)

Classification: Gold-silver vein.
References:
Roots (1981)

WHITEHORSE COPPER BELT (105 D 10, 11, 14)

(includes occurrence numbers 49, 190-194, 200, 202-204, 206-211, 217, 225 and 226 - LITTLE CHIEF, RABBIT FOOT, PUEBLO, SCHEELITE, COPPER KING, CARLISLE, BEST CHANCE, ARCTIC CHIEF, SUBURBAN, VERONA, BIG CHIEF, MIDDLE CHIEF, VALERIE, NORTH STAR, PASS LAKE, COWLEY PARK (and SUE), BLACK CUB (and GRIZZLY CUB, BROWN CUB, RAILWAY), KEEWEENAW, KODIAK CUB, WAR EAGLE and ANACONDA)

Geology:. The following discussion is extracted from Tenney (1981, p. 2, 3): " The Whitehorse Copper Belt is within the Whitehorse Trough, a subdivision of the Intermontane Belt. The trough trends north-westwards through southcentral Yukon and represents an Island Arc Complex that ranges in age from upper Paleozoic through Jurassic in age. Within the Copper Belt, clastic and carbonate rocks of the Lower Jurassic Laberge Group are the dominant rock types. The copper bearing skarns

occur over a length of about 32 km along the western side of a Cretaceous diorite batholith of the Coast Plutonic Complex.

Geology of Deposits

The characteristics of deposits within the Whitehorse Copper Belt are as follows:

1. Ore bodies occur mainly within limestone of the Lewes River Group, adjacent to or within a few hundred feet of diorite contacts.
2. Limestone within the Lewes River Group varies from a fine-grained graphitic type to a pure, massive, white, coarsely crystalline variety. With the exception of Black Cub South, ore is not associated with strongly graphitic limestone.
3. Ore is associated with irregularities in the diorite contact and the largest deposits occur within roof or flank pendants.
4. Most ore zones have irregular boundaries and vary in width and grade over short distances, but they are generally tabular and oriented parallel to bedding.
5. Limestone is generally present on the hanging wall side of the ore and 'quartzite' or silicate skarn on the foot wall.
6. The most extensive ore zones are developed where a limestone/quartzite contact is parallel or nearly parallel to the intrusive contact.
7. Calc-silicate skarn ore bodies are associated with a relatively magnetic diorite, whilst serpentine-magnetite skarns are associated with relatively non-magnetic diorite. Meinert (1986, p. 22) discussed the skarn mineralogy: " The skarns are mineralogically and compositionally similar to typical copper skarns (Einaudi et al., 1981). The main prograde skarn minerals are andraditic garnet and diopsidic pyroxene, with significant forsteritic olivine in dolomitic host rocks. Locally, intense retrograde alteration has converted garnet to epidote +/- chlorite +/- hematite, pyroxene to actinolite +/- chlorite, and olivine to serpentine +/- chlorite +/- magnetite. The colour, composition and mineralogy of prograde and retrograde skarn minerals reflect the protolith composition.

The bulk of sulphide mineralization is associated with retrograde alteration. Chalcopyrite and pyrite are preferentially associated with actinolite and chlorite, whereas bornite and chalcocite are preferentially associated with epidote and locally serpentine. The other important copper mineral, valeriite, is restricted to magnesian rocks and is commonly associated with phlogopite, serpentine and chlorite. Overall, the Whitehorse system is copper-rich and sulphur-poor; iron-sulphide minerals are not abundant."

Reserves: Watson (1984) reports a total production from the Whitehorse Copper Belt during 1898 to 1982 of about 10 000 000 tonnes containing 1.5% Cu. Figures for some of the individual skarn bodies are presented below:

LITTLE CHIEF No. 49 - production during 1972 to 1982 of 7 407 900 tonnes containing 1.53% Cu, 0.75 g/t Au and 9.16 g/t Ag;

ARCTIC CHIEF No. 202 - production of 201 800 tonnes containing 1.44% Cu, 1.03 g/t Au and [illegible] g/t Ag;

WAR EAGLE No. 225 - production of 899 000 tonnes containing 1.25% Cu, 0.22 g/t Au and 8.57 g/t Ag;

COWLEY PARK No. 273 - open-pittable reserves estimated at 884 000 tonnes grading 1.04% Cu, 0.21 g/t Au and 3.77 g/t Ag.

Classification: Mid-Cretaceous, magmato-hydrothermal, mesozonal, intrusive-proximal copper-gold-silver-molybdenum skarns and veins.

Comments: Excellent summaries of Whitehorse Copper Belt geology and deposits are available in the listed references.

References:

Other: Meinert (1986, p. 19-43); Watson, P.H. 1984 (map and summary notes); Morrison, G.W. (1981); Tenney, D. (1981)
Recent References: 1987 YEX, p. 128-130; 1988 YEX, p. 55; Hart and Pelletier (1989b)

224. RED RIDGE (105 D 6)

Classification: Gold-silver vein.
References:
INAC Reports: 1971-72 MIR, p. 44
Assessment Reports: 092577
Recent References: 1987 YEX, p 131-132 (assays); 1988 YEX, p. 55, 57 (assays, diamond drilling); Doherty et al. (1988)

228. SAID (105 D 6)

Geology: The Mount Skukum Volcanic Complex is intruded by a synvolcanic alaskite pluton and rhyolite, trachyte and andesite dykes. Major vertical movement has taken place along north- and northeast-trending normal faults. Several zones of quartz veining and brecciated silicified wallrock occur along a 060 degree trend over a 3 km strike length. The quartz veins accompany argillically altered late-stage dykes and show sericite alteration and a variety of textures including brecciation, chalcedonic banding, fluorite molds and fine grained amethyst. Most of the gold mineralization occurs along faults separating rhyolitic pyroclastics from andesite flows.
Geochemistry: Several mineralized zones have been determined:

Description of Zone	Dimensions	Au (ppb)
Chalcedony-amethyst-fluorite vein	75 m long float train	up to 6450
Quartz-veined pyroclastics	800 m X 800 m	up to 540
Quartz veins & silicified quartz breccia	no data	up to 7900

Classification: Eocene, magmato-hydrothermal, shallow volcanic-hosted gold veins, stockwork and breccia.
References:
INAC Reports: 1985-86 YEX, p. 198-199
Assessment Reports: 091655; 091850; 091883; 091971; 092628; 092643
Other: Smith (1982)
Recent References: 1987 YEX, p. 132-133; Doherty et al. (1988); 1988 YEX, p. 57-58

229. EARL (105 D 3, 4)

Geology: Metamorphic and intrusive granitic rocks of the Coast Plutonic Complex are overlain by volcanic rocks at the western boundary of the Eocene Mount Skukum Volcanic Complex and intruded by dykes of andesite, dacite porphyry, diorite, rhyolite and quartz-feldspar porphyry. Northwest-trending quartz veins carry gold-silver mineralization: 1) The "Twist" zone consists of 3 northwest-trending quartz-pyrite-galena veins with minor arsenopyrite, sphalerite and tetrahedrite up to 2 m wide and 100 m long; 2) the "Rumba" zone contains quartz sheared and altered zones within granodiorite and 3) the "Skarn" zone consists of a magnetite skarn and quartz veins.
Geochemistry: Grab samples from the mineralized zones assayed the following:

Zone	Au (ppb)
Twist - sample of quartz stockwork in wallrock phyllite	up to 3650
Rumba - associated with pyrite, chalcopyrite and pyrrhotite	up to 400
Skarn - 100 X 30 m magnetite skarn	60 to 190
- quartz veins	45 to 60

Classification: Eocene, magmato-hydrothermal, shallow volcanic-associated gold veins and stockwork.
References:
INAC Reports: 1985-86 YEX, p. 199-200
Assessment Reports: 091824; 092595
Recent References: 1987 YEX, p. 133; 1988 YEX, p. 58-59 (assays, map); Doherty et al (1988)

258. CRAIG (105 D 3)

Classification: Silver-antimony-lead-zinc-copper vein.
References:
Doherty et al. (1988)

260. BOB (105 D 3)

Classification: Gold-silver-lead-zinc-antimony vein/breccia, copper molybdenum vein.
References:
Assessment Reports: 092625
Recent References: 1988 YEX, p. 60

273. MT. BYNG (105 D 16)

Classification: Gold-silver vein.
References:
Assessment Reports: 091940
Recent References: 1988 YEX, p. 60 (assays)

274. RUBY SILVER (RED DEER) (105 D 2)

Classification: Silver-lead vein.
References:
Other: Roots (1981)
Recent References: Hart and Pelletier (1989a)

274. HUMPER (105 D 2)

Classification: Silver-lead vein.
References:
Other: Roots (1981)
Recent References: Hart and Pelletier (1989a)

105 E

1. FLOAT (105 E 8)

Classification: Gold-silver-copper-lead vein.
References:
N.C.M.I.

3. LOON (105 E 1)

Geology: Sericite-chlorite schist and cherty quartzite are the country rocks. Disseminated chalcopyrite and minor pyrite occur in quartzite, crudely banded, patchy chalcopyrite and pyrite in schist and specks of chalcopyrite in quartz veinlets. Arsenopyrite-pyrite-quartz veins are also present, commonly poor in chalcopyrite.
Geochemistry: Old adits are reported to have cut an 80 to 90 ft. wide zone containing disseminated chalcopyrite which graded 2 to 2.5% Cu. A grab sample taken before 1970 assayed 4.7% Cu and 0.12 oz/ton Au. Resampling of the Main Zone in 1970 gave 0.58% Cu, 0.03 oz/ton Au and 0.3 oz/ton Ag over 100 ft.
Classification: Metamorpho-hydrothermal, copper-gold-silver vein and dissemination.
References:
1969-70 MIR, p. 119-120; 1974 MIR, p. 148; 1975 MIR, p. 109; 1978 MIR, p. 37; 1985-86 YEX, p. 212

10. SEMENOF (105 E 15)

Classification: Copper-gold-silver vein.
Recent References: 1987 YEX, p. 146-147

12. CASSIAR BAR (105 E 14, 15)

Classification: Copper-silver occurrence.
References:
N.C.M.I.

13. SYLVIA (105 E 8)

Classification: Lead-zinc-gold-silver-copper vein.
References:
N.C.M.I.

18. GEM (105 E 18)

Geology: Native gold was discovered in a rhyolite dyke cutting Mesozoic andesitic and basaltic volcanic rocks. Subsequent geological mapping and soil and silt sampling limited this mineralization to the initial discovery site.
Classification: Epizonal, magmato-hydrothermal dyke-hosted gold.
Comments: Also called MUSTARD.
References:
INAC Reports: 1975 MIR, p. 111

105 F

2. MCHAGEN-KELLY (MOBS) (105 F 4)

Geology: Biotite schist near a contact with granitic rocks is cut by argentiferous galena-bearing quartz vein with a little molybdenite.
Classification: Magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead vein.
References:
Green (1966, p. 60-62); Lees (1936, p. 24)

3. WOPUS (105 F 4)

Classification: Gold-silver vein.
References:
N.C.M.I.

4. GOPHER (105 F 4)

Geology: Quartz-feldspar-biotite gneiss, in part calcareous, is interbedded with minor sugary white dolomite and intruded by a quartz-feldspar porphyry sill. The showings are of two types: galena-bearing lenses in dolomite within the gneiss and quartz veins with galena. Both parallel the foliation of the enclosing rocks.
Geochemistry: An 18 inch interval within a trench across a galena-bearing dolomite lens partly altered to tremolite, assayed trace amounts of gold, 95.60 oz/ton Ag, 51.60% Pb and 0.3% Zn.
Classification: Magmato-hydrothermal, katazonal silver-lead vein and skarn.
References:
INAC Reports: 1982 YEG, p. 123-124
Other: Green (1966, p. 60-62)

10. MM (105 F 7)

Geology: Metamorphosed Mississippian volcanic, volcaniclastic and exhalative rocks underlie equally metamorphosed Siluro-Devonian quartzite, dolomite and graphitic schist and Lower Cambrian calc-silicate schist and phyllite. Mineralization consists of three separate lenses of baritic quartzite with associated horizons of massive sulphide material (mainly pyrite with subordinate sphalerite, galena and chalcopyrite). These lenses are each in the order of several tens of metres long and several metres thick and probably coalesce below surface to form one unit.
Geochemistry: Samples collected by Morin gave the following analyses:

Sample	Cu ppm	Pb ppm	Zn ppm	Cd ppm
3	16	260	23	1
4	490	3.2 %	6.4 %	370
5	38	0.40 %	0.37 %	14

	Bi ppm	$BaSO_4$ %	Hg ppb	Te ppm
3	LT 5	1.21	170	LT 0.5
4	LT 5	1.66	475	2.5
5	LT 5	53.8	500	0.5

	Au ppb	Ag ppm
3	5	1.3
4	40	36
5	95	22

Description of samples:
3 - MZ-3; grab sample of pyritic quartzite, cliff showing area;
4 - MZ-1; grab sample of massive sulphide from cliff showing;
5 - MZ-2; grab sample of barite horizon, cliff showing area.

Classification: Mississippian, tectono-hydrothermal, volcanogenic lead-zinc-silver-copper massive sulphide.

References:

INAC Reports: 1978 MIR, p. 60

Other: Morin (1977, p. 83-97 includes map); Mortensen (1979 includes map); Mortenson and Godwin (1982)

Recent References: 1988 YEX, p. 70-72 (map, assays)

11. CPA (105 F 8)

Classification: Silver-lead-zinc vein.

References:

INAC Reports: 1977 MIR, p. 80-81

12. SONNY (105 F 8)

Geology: Country rocks are Lower Cambrian limestone intruded by a Cretaceous mafic dyke. Three mantos comprised mainly of siderite and pyrrhotite and some pyrite and quartz are exposed over a strike length of about a kilometre. The largest and westernmost of the three is exposed for a length of about 75 m and a width of 2 or 3 m. Recent geophysics, geochemistry and geology indicate a possible 1.2 km length, and average width, greater than 8 m. The deposits are probably tubelike, but their orientation is unknown.

Geochemistry: Trenches on the MAIN showing exposed manto material grading up to 9.9 g/t Au, while the GRAY showing results gave up to 274.3 g/t Ag and 1.5% Pb.

Classification: Cretaceous, magmato-hydrothermal, mesozonal, intrusive-distal gold-silver-lead replacements, copper vein.

References:

INAC Reports: 1983 YEG, p. 90

Assessment Reports: 092103

Other: Abbott (1986a)

Recent References: 1987 YEX, p. 32, 151-153, 163 (map, assays)

13. KAY (105 F 8)

Geology: Country rocks are Siluro-Devonian dolomite and limestone situated on the southeast side of the Ketza Uplift. Galena, sphalerite, chalcopyrite and tetrahedrite with lesser amounts of pyrite, pyrrhotite, and manganiferous siderite, and minor quartz and barite form veins and breccias along fractures and faults, or replace limestone.
Classification: Mid-Cretaceous, magmato-hydrothermal, intrusive-distal lead-zinc-copper-silver vein, breccia and replacement.
References:
Findlay (1969a, p. 76-77); Abbott (1986a)

14. SHARON (KET) (105 F 9)

Geology: On the southeast edge of the Ketza Uplift, Cambro-Ordovician phyllite is cut by two north-trending quartz veins about 450 m apart.
Geochemistry: One trench interval of 1.75 m is reported as 476.6 g/t Ag and 20% Pb. A grab sample of trench float with quartz-galena veining gave 917.8 g/t Ag, 25.1% Pb, 0.14% Cu and 0.07% Zn. 1987 trenching showed 2 m of 68.25% Pb, 2.02% Zn and 2069 g/t Ag; and a 3.5 m width 25 m along strike with 18.89% Zn, 7.38% Pb and 191 g/t Ag.
Classification: Cretaceous, magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
INAC Reports: 1985 YEX, p. 120
Other: Abbott (1986a, p. 63); Findlay (1969a, p. 76-77)
Recent References: 1987 YEX, p. 164; 1988 YEX, p. 72 (assays)

15. OXO (105 F 9)

Geology: A lens of pyrrhotite, galena, sphalerite and pyrite is exposed over 15 m by 30 m at the contact between Lower Cambrian limestone and overlying black shale. Next to the massive sulphides, in the same position, a quartz vein up to 2 m wide and 50 m long contains some chalcopyrite and pyrite.
Classification: Cretaceous, magmato-hydrothermal, mesozonal, intrusive-distal lead-zinc-silver skarn.
References:
Green (1965, p. 42-43); Abbott (1986a, p. 56-66)

17. KETZA RIVER MINE (105 F 9)

Geology: Lower Paleozoic and upper Proterozoic rocks are exposed in the Ketza River Uplift and interpreted to lie above a buried pluton. Biotite in hornfels was dated as mid-Cretaceous. Gold - bearing veins and replacement bodies of arsenopyrite and pyrrhotite ('sulphide ore') occur within Lower Cambrian carbonate or at the contacts between carbonate and clastic units. Locally, the sulphides have been altered to extensive zones of limonite ('oxide ore').
Reserves: At the beginning of 1988, oxide reserves from the PEEL, RIDGE and BREAK zones were estimated at 390 000 tonnes grading 15.3 g/t gold. However in November, 1988 recalculation of these reserves using 20% lower specific gravity gave new estimates of 230 to 250 thousand tonnes grading 12.0 to 13.1 g/t gold. Sulphide reserves in the PEEL zone are estimated at 480 000 tonnes grading 10.7 g/t gold. Underground mining of oxide ore commenced and the mill was commissioned in early March, 1988 and the first gold-silver bar was poured on April 28, 1988. Production by year-end 1988 was 86 664 tonnes containing 635 349 grams of gold and 6 804 grams of silver.

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold vein and massive sulphide replacement.
Comments: The mantos may be peripherally zoned about a zone of auriferous quartz vein stockwork (Shamrock Zone). Also known as the BOOM. The mine is presently fully owned and operated by Canamax Resources Inc.
References:
INAC Reports: 1985-86 YEX, p. 218
Other: Abbott (1986a); M. Cathro (1988); Morin (1981a)
Recent References: 1987 YEX, p. 17, 24, 153, 156; 1988 YEX, p. 72-75, 253 (reserves)

18. JD (105 F 9)

Classification: Lead-zinc-silver vein.
References:
N.C.M.I.

19. BOX (MAT & GULL) (105 F 10)

Geology: On the southeast side of the Seagull Uplift, graphitic slate and quartz-eye tuff of the Mississippian volcanic assemblage are host to a lens of massive sulphides about 50 m long and up to 1 m thick that trends northerly and dips moderately east. Forming the lens are galena, pyrite, arsenopyrite and crushed vein quartz.
Geochemistry: Grab samples have assayed as high as 1584.6 g/t Ag, 21% Pb, 1.03 g/t Au and 0.25% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc-gold vein and replacement.
Comments: The highly brecciated and altered nature of the host rocks suggests that they have been affected by thrust faulting. Fluids moved along the thrust interface and down into the Mississippian volcanics of the lower plate. Subsequent erosion of the overlying Siluro-Devonian carbonate sequence in the upper plate exposed the mineralized rocks in the lower plate.
References:
INAC Reports: 1975 MIR, p. 162; 1976 MIR, p. 193-194; 1977 MIR, p. 79-80
Other: Abbott (1986a); Morin (1977)

20. GRAYLING (105 F 10)

Geology: On the northeast side of the Seagull Uplift, upper plate Siluro-Devonian dolomite and interbedded limestone overlie lower plate 'shattered' syenite of Mississippian age. Two lenses of massive sulphides (pyrrhotite, pyrite, sphalerite, galena, minor chalcopyrite and arsenopyrite) occur along the north-trending contact which dips moderately to the east. Manganiferous siderite, calcite and quartz are associated with the sulphides.
Geochemistry: Continuous chip samples across the two lenses gave the following:

Zone	Interval	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Upper	6.2 m	522	6.03	21.82	1.60
Lower	1.6	620	3.7	27.25	2.23

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal gold-silver-lead-zinc replacement, veins.
Comment: This occurrence is a good example of fluid flow along a thrust fault. The lower plate syenite exhibits brittle deformation and hydrothermal alteration whereas the upper plate carbonates show veining and replacement. Also known as RAM property.
References:
INAC Reports: 1981 YEG, p. 127; 1985-85 YEX, p. 219-221
Assessment Report: 091768
Other: Abbott (1986a, p. 56-66)
Recent References: 1987 YEX, p. 154-155 (maps, assays); 1988, p. 75 (drilling, assays)

22. TYRO (105 F 10)

Classification: Zinc-silver-copper-lead vein.
References: N.C.M.I.

23. HADYN (105 F 10)

Geology: On the northwestern side of the Seagull Uplift, Siluro-Devonian dolomite is cut by a vein with partially oxidized float boulders up to 1 m across containing pyrite, galena and minor chalcopyrite, sphalerite and tetrahedrite in a siderite and quartz matrix.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References: Abbott (1986a, p. 53)

24. GROUNDHOG (SILVER CREEK) (105 F 10)

Geology: On the northwest side of the Seagull Uplift, four sets of north-trending, steeply to vertically-dipping veins cut Siluro-Devonian dolomite in the upper plate of the Seagull Thrust. They consist of galena and variable amounts of tetrahedrite in massive white quartz and lesser siderite.
Reserves: Reserves of 2558 tonnes grading 695 g/t Ag and 42.5% Pb were established in 1969 on the largest vein.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Assessment Reports: 092097; 092539
Other: Abbott (1986a); Findlay (1969a, p. 77-78); Findlay (1969b, p. 46-47)
Recent References: 1987 YEX, p. 156-157 (assays); 1988 YEX, p. 75-76 (drilling, assays)

26. PONY (105 F 11)

Classification: Silver-lead-zinc vein.
References: Kindle (1945, p. 24)

29. AMBROSE (105 F 9)

Geology: Situated in the upper plate of the Cloutier Thrust and on the north edge of the Ketza Uplift, Siluro-Devonian dolomite hosts a quartz vein with pyrite and lesser amounts of chalcopyrite. The vein is up to 2.5 m thick and more than 1 km long.

Classification: Copper-silver vein.
References:
Abbott (1986a)

34. CANUSA (105 F 15)

Classification: Lead-silver-gold vein.
References:
Assessment Reports: 091737
Recent References: 1987 YEX, p. 157

35. PESCOD (105 F 9)

Geology: On the southeast margin of the Ketza Uplift, Upper Cambrian to lower Ordovician, medium grey to brown recessive weathering, chlorite-quartz phyllites with fine carbonate laminations are thrust over and normally faulted against Devonian to Mississippian shales and volcanic rocks. Northwest-trending normal faults appear to be important in controlling mineralization in nearby vein showings. Two veins have been located: a 110 degree-trending galena-sphalerite vein up to 2.5 m thick and a north-trending quartz vein with clots of galena and sphalerite.
Geochemistry: The former vein has a weighted average across its width of 1210 g/t Ag, 27.08% Pb, 16.48% Zn, 0.45% Cu and 0.38% Sb and a sample across 50 cm of the latter vein assayed 40.1 g/t Ag, 0.9% Pb and 0.69% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1985-86 YEX, p. 221-222
Assessment Reports: 091858
Other: Abbott (1986a, p. 56-66); Wheeler et al. (1960)
Recent References: 1987 YEX, p. 221-222

37. LAPIE (105 F 15)

Classification: Gold-silver vein.
References:
Kindle (1945, p. 25)

40. MT. ROSS (105 F 15)

Classification: Gold-silver vein
References:
Kindle (1945, p. 25)

44. MT. MISERY (105 F 9)

Geology: Upper Cambrian to Lower Devonian phyllites, carbonates and quartzites are overlain by Mississippian volcanic rocks. Galena-bearing rubble is found near the summit of Mt. Misery.

Geochemistry: A grab sample of float assayed 44.04% Pb and 613.0 g/t Ag.
Classification: Silver-lead-copper vein.
References:
INAC Reports: 1985-86 YEX, p. 223-224
Assessment Reports: 091724

45. KEY 3 (SILVER RIDGE) (105 F 9)

Geology: The Cloutier Thrust has emplaced upper plate Cambro-Ordovician phyllitic rocks with some contained volcanic rocks over lower plate Devono-Mississippian black shale with minor chert and black quartzite. The fault contact strikes east to southeast and dips about 30 degrees south to southwest and the rocks are located on the northeast side of the Ketza Uplift. The shale hosts a vein striking south and dipping 38 degrees west. Mineralization consists of quartz, galena, sphalerite, pyrite, siderite, tetrahedrite and chalcopyrite.
Geochemistry: A bulk sample averaged 1114.3 g/t Ag, 4.8% Pb and 0.35% Cu. Underground sampling indicated a Ag:Pb ratio (oz/ton Ag:% Pb) from 1.13 to 5.00. A grab sample of massive galena assayed 0.01 oz/ton Au, 76.7 oz/ton Ag, 67.4% Pb and trace Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal intrusive-distal silver-lead vein.
References:
Green (1966, p. 65-66); Abbott (1986a, p. 56-66); Green (1955, p. 64-68); Findlay (1969, p. 44-46)

46. LAP 10 (105 F 9)

Geology: In the north-central area of the Ketza Uplift, a northeast-trending fault zone cuts Devono-Mississippian finely laminated phyllite and shale. The zone contains siderite with pods of massive galena up to 30 cm across as well as smaller lenses and stringers of galena and quartz. The vein strikes about 040 degrees and dips about 35 degrees northwest.
Geochemistry: Channel samples indicated a grade of 1200 g/t Ag and 38.5% Pb over a width of 1 m and a strike length of 137 m. A grab sample of massive galena assayed 0.005 oz/ton Au, 69.2 oz/t Ag and 74.5% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
Findlay (1969b, p. 44-46); Abbott (1986a, p. 56-66)

47. HOEY (F-2, F-3) (105 F 9)

Geology: Several veins situated on the eastern edge of the Ketza Uplift include two that are important. The eastern (F-3) vein is in a northwest-trending fault that juxtaposes Ordovician-Silurian black shale against Siluro-Devonian dolomite and consists of siderite, galena, sphalerite and pyrite. Nearby, galena also occurs in veinlets and replaces dolomite. The western (F-2) vein is in a steep north-trending fault zone. The vein is about 2 m thick, and contains mainly quartz with some pyrite, siderite and a little galena.
Geochemistry: Surface exposures contain silver, but underground workings in the F-2 intersected a zone that assayed 23.3 g/t Au, but no silver, across 0.73 m and a length of 9.1 m.

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
Comments: Dramatic vertical zonation between gold and silver may be present.
References:
INAC Reports: 1985-86 YEX, p. 224-225
Other: Abbott (1986a); Findlay (1967, p. 56-58); Findlay (1969b, p. 44-46)

48. STUMP (105 F 9)

Geology: A north-striking mineralized fracture zone cuts Cambro-Ordovician fine-bedded silty limestone, grey sericitic phyllite and graphitic argillite containing local quartz bands and lenses on the east side of the Ketza River Uplift. The A-1 vein is a fairly strong and continuous structure that has an average width of about 4 ft. and that dips about 55 degrees west. Typically, the vein consists of quartz-siderite carrying a band of massive galena within it that ranges from 4 in. to 1 ft. in thickness.
Reserves: Proven reserves in 1975 were 36 280 tonnes grading 8.4% Pb and 353 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
Other: Abbott (1986a, p. 56-66); Findlay (1969b, p. 44-46)
Recent References: 1987 YEX, p. 158-159

49. KETZA KEY (K 18 ZONE) (105 F 9)

Geology: Cambro-Ordovician phyllite on the northeast flank of the Ketza Uplift is host to a north-trending pod of galena and pyrite with minor tetrahedrite and sphalerite in a gangue of quartz and siderite. The pod is 1.5 m wide and 32 m long and cuts across foliation at a shallow angle.
Reserves: Proven and possible reserves in 1975 were 10 702 tonnes grading 545.1 g/t Ag and 12.15% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1978 MIR, p. 61; 1979-80 YGE, p. 174
Other: Abbott (1986a, p. 56-66); Findlay (1967, p. 56-58); Findlay (1969a, p. 75-76); Findlay (1969b, p. 44-46)

56. FURY (105 F 9)

Classification: Gold-silver-copper vein/replacement.
References:
Assessment Reports: 091933; 092147; 092690
Recent References: 1987 YEX, p. 159; 1988 YEX, p. 76 (drilling, assays)

61. H (PEAK) (105 F 10)

Geology: On the northwestern side of the Seagull Uplift, Siluro-Devonian carbonates are cut by a vein of arsenopyrite, pyrite, quartz and pyrrhotite.
Classification: Silver-lead-zinc vein.
References:
INAC Reports: 1976 MIR, p. 196; 1977 MIR, p. 84; 1978 MIR, p. 63; 1979-80 YGE, p. 175
Other: Abbott (1986a, p. 56-66)
Assessment Reports: 090529; 090572; 090701

75. GULL (105 F 10)

Geology: On the southeast side of the Seagull Uplift, reddish-brown felsic volcanics of Mississippian age with stringers and clots of calcite and quartz are intruded by a syenite plug. Galena and minor sphalerite occur in veinlets and clots within intermittent northwest-trending zones of clay alteration and chalcedonic veining.
Geochemistry: A grab sample assayed 6.20% Pb, 0.70% Zn, 1.8 oz/ton Ag and 0.005 oz/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
Comments: Similar to the MAT, this mineralization may be related to a thrust contact.
References:

INAC Reports: 1975 MIR, p. 162
Assessment Reports: 090007
Other: Abbott (1986a); Morin et al. (1978, p. 79-80)

77. CHZERNOUGH (105 F 9)

Geology: Felsic volcaniclastic rocks of Mississippian age include lapilli tuff with abundant carbonate in the matrix. The tuff hosts mineralization consisting of a sugary-textured barite unit with disseminated sphalerite, galena and fluorite.
Classification: Mississippian tectono-hydrothermal, volcanogenic, exhalative lead-zinc-silver massive barite.
References:

1976 MIR, p. 192-193; 1977 MIR, p. 81

81. WIMP (105 F 15)

Geology: Four thin (20 - 30 cm) flat-lying zones of fine-grained galena, sphalerite and tetrahedrite in quartz-carbonate gangue occur in a grey phyllite.
Classification: Silver-lead-zinc vein.
References:

1977 MIR, p. 62

84. DROC (105 F 9)

Classification: Gold vein.
References:

1977 MIR, p. 81

85. HOWRU (105 F 9)

Geology: Country rocks are shale, sandstone and carbonates of Upper Cambrian to Triassic age. They are located within the upper plate of the Cloutier Thrust and the lower plate of the Porcupine Thrust and are situated distal and northeast of the Ketza Uplift. Mineralization is of three types:

1) small copper-bearing sphalerite-galena veins
2) disseminated galena in quartzose sandstone
3) stratiform pyrite with traces of galena and sphalerite in Mississippian shale.

Geochemistry: The sandstone-hosted mineralization has an overall grade of less than 1% combined Pb-Zn over a stratigraphic interval up to 46 m thick.
Classification: Cretaceous (?) magmato-hydrothermal, epizonal (?), intrusive-distal lead-zinc-(silver) disseminated replacement.
References:
INAC Reports: 1978 MIR, p. 62
Other: Abbott (1986a)

92. ANGIE (105 F 15, 16)

Geology: A sequence of shales, limestones and argillites of Paleozoic age form the Front Ranges of the Pelly Mountains. Sphalerite, smithsonite and native silver occur as pelletoidal disseminations concentrated at the base of the DVc unit (Tempelman-Kluit 1977, GSC Open File 486) in bands parallel to bedding and in veinlets in silty limestone and sooty calcareous siltstone of Devonian age. Mineralized zones are lenticular and stratiform and stratigraphically transgressive and variable in width along the 280 m long strike.
Geochemistry: The best assay results were 3.58 oz/ton Ag and 5.8% Zn over 3.2 m.
Classification: Cretaceous (?) magmato-hydrothermal, epizonal, intrusive-distal silver-zinc replacement and veinlets.
References:
INAC Reports: 1978 MIR, p. 38-39
Recent References: 1988 YEX, p. 77

100. LORNE (105 F 10)

Geology: On the northwestern side of the Seagull Uplift, Cambrian phyllites with some greywacke and/or tuffs and Siluro-Devonian dolomite are cut by quartz veins up to 1m thick. Galena occurs in boulders of massive sulphide float up to 30 cm by 10 cm, in narrow fracture fillings and as blebs up to 3 cm in size in the dolomite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
INAC Reports: 1981 YEG, p. 130
Assessment Reports: 090979
Other: Abbott (1986a)

101. MOX (105 F 11)

Geology: A roof pendant of banded skarn and calc-silicate is intruded by a quartz monzonite body. Fine-grained, disseminated galena and sphalerite occur in discontinuous lenses hosted within calc-silicate rock commonly within 5 m of the intrusive contact. The maximum strike length of the known occurrences is in the order of a few tens of metres.
Geochemistry: The best sampling results are up to 1693 g/t Ag and 3% Pb-Zn over 2.50 m or 776 g/t Ag and 2.2% Pb-Zn over 10.4 m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc skarn.
References:
INAC Reports: 1979-80 YGE, p. 176 (LAST property); 1981 YEG, p. 130-131; 1985-86 YEX, p. 225
Assessment Reports: 090641; 090832; 090554; 091675

109. TAY (LP) (105 F 10)

Classification: Gold vein.
References:
INAC Reports: 1985-86 YEX, p. 225-226; 1984 YEX, p. 90
Assessment Reports: 092610; 092081; 092777; 091674
Recent References: 1987 YEX, p. 161; 1988 YEX, p. 77, 80

110. GP (105 F 9)

Classification: Silver-lead-zinc vein/breccia.
References:
Assessment Reports: 092476
Recent References: 1988 YEX, p. 80 (assays)

111. SOUTH FAULT (F-4) (105 F 9)

Geology: Small lenses and pods of galena with lesser amounts of sphalerite and traces of tetrahedrite occur along a steep east-trending fault in Cambro-Ordovician phyllite on the eastern edge of the Ketza Uplift. Black dolomite interbedded with the phyllite is highly fractured and healed with secondary dolomite and is host to the sulphide minerals. In the 1965 MIR, Green observed some nearby "small showings all of which appear to occur in black dolomite near the contact with overlying buff phyllite".
Geochemistry: Selected specimens ranged from 2228.5 to 7714.1 g/t Ag. Green's composite sample of material from the trenches, rich in galena, assayed trace amounts of gold, 20.0 oz/ton Ag, 28.1% Pb and 8.1% Zn. Another composite sample from the nearby "small showings" assayed 0.005 oz/ton Au, 54.5 oz/ton Ag, 24.2% Pb and 8.4% Zn. The F-6 occurrence located 1 km farther south consists of galena float assaying 4967.9 g/t Ag, 71.4% Pb and 0.17 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1985-86 YEX, p. 229
Other: Abbott (1986a, p. 56-66); Green (1966, p. 67-68)
Recent References: 1988 YEX, p. 80

112. K33 (105 F 9)

Classification: Silver-lead vein.
References:
Abbott (1986a)

113. TROUT (105 F 10)

Classification: Silver-lead vein.
References:
1985-86 YEX, p. 220 (assays)

115. CARL (105 F 9)

Geology: On the southeast side of the Ketza Uplift, Upper Proterozoic quartzite and phyllite are overlain by Lower Cambrian mudstone, phyllite and limestone, and separated from overlying shale by an erosional unconformity. Mineralization is hosted by Lower Cambrian carbonates and consists of veins and replacements, and Siluro-Devonian carbonates host galena- and sphalerite-bearing quartz veins.
Geochemistry: Grab samples from a 30 m wide zone of narrow quartz veins with galena and sphalerite assayed 506.4 g/t Ag, 16.0% Pb, 7.73% Zn and 0.1% Cu. About 1.5 km to the northwest, grab samples of coarse-grained galena and black sphalerite rubble below cliffs of Lower Cambrian carbonate assayed 1230.1 g/t Ag, 42.8% Pb and 4.76% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins and replacements.
References:

INAC Reports: 1985-86 YEX, p. 226-227
Assessment Reports: 091687; 091863
Other: Abbott (1986a, p. 56-66)
Recent References: 1987 YEX, p. 32, 153

118. PIKA (105 F 10)

Classification: Silver-gold-lead-zinc-copper vein.
References:

1985-68 YEX, p. 220 (assay)

119. LOON (105 F 10)

Classification: Silver-gold-zinc-lead-copper-barite vein.
References:

1985-86 YEX, p. 220 (assay)

121. BEAR (105 F 10)

Classification: Silver-gold vein.
References:

1985-86 YEX, p. 220 (assays)

122. GOAT (105 F 10)

Classification: Silver-gold-zinc vein.
References:

1985-86 YEX, p. 220 (assays)

123. LEAPER (105 F 10)

Classification: Lead-silver-gold vein.
References:
1985-86 YEX, p. 220 (assays)

124. RAVEN (105 F 10)

Classification: Lead-silver-gold replacement.
References:
1985-86 YEX, p. 220 (assays)

126. LYNX (105 F 10)

Classification: Lead-silver-gold vein.
References:
1985-86 YEX, p. 220 (assays)

127. BID (105 F 10)

Classification: Lead-silver-copper-antimony vein.
References:
1985-86 YEX, p. 220 (assays)

128. LOWER SWITCHBACK (105 F 9)

Geology: Situated on the east edge of the Ketza Uplift, this vein may be an extension of the HOEY. Diamond drilling intersected interbedded stylolitic dolomite, shale and phyllitic dolomite locally brecciated with quartz, dolomite, ankerite, pyrite and galena in the matrix and intruded by a sanidine porphyry dyke.
Classification: Cretaceous (?) magmato-hydrothermal, intrusive-distal, mesozonal lead-silver vein.
References:
INAC Reports: 1985-86 YEX, p. 230
Assessment Reports: 091834

129. PIZZA (105 F 9)

Geology: Situated on the northeast side of the Ketza Uplift, the vein is located along a northwest-trending normal fault (east side down) that separates lower Cambrian calcareous phyllites to the west from Silurian dolomitic siltstone and sandstone to the east. From 1 to 5% galena and sphalerite occur as veins and veinlets hosted in brecciated dolomite with a matrix of oxide minerals, calcite and rock flour.
Geochemistry: Best grab sample assayed 505.0 g/t Ag, 1.88% Pb and 1.43% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein and breccia.
Comments: Hereafter included with No. 111 South Fault.

References:
INAC Reports: 1985-86 YEX, p. 229
Assessment Reports: 091859

135. MPR (105 F 10)

Classification: Gold-silver-lead vein.
References:
Assessment Reports: 092658; 092124; 092091
Recent References: 1987 YEX, p. 162-163; 1988 YEX, p. 80-82 (maps, assays)

139. EAGLE (105 F 8)

Classification: Silver-lead-zinc vein/replacement.
References:
Assessment Reports: 092662
Recent References: 1988 YEX, p. 82 (assays)

140. HELO (105 F 12)

Classification: Zinc-silver-copper skarn.
References:
Assessment Reports: 092647
Recent References: 1988 YEX, p. 82-83 (assays)

142. PASS PEAK (105 F 10)

Classification: Lead-zinc-silver vein.
References:
Assessment Reports: 092145; 091735
Recent References: 1987 YEX, p. 161-162; 1988 YEX, p. 83

143. WHITE WEST (105 F 9)

Classification: Gold vein.
References:
Assessment Reports: 092656; 091996
Recent References: 1987 YEX, p. 160 (assays); 1988 YEX, p. 77

145. MATHEW (105 F 7, 8)

Classification: Iron-silver stratabound concordant, silver-lead-zinc vein.
References:
Assessment Reports: 092685
Recent References: 1988 YEX, p. 83-84 (assays)

147. SILVER (105 F 16)

Classification: Silver-lead-zinc-copper vein.
References:
Assessment Reports: 092644
Recent References: 1988 YEX, p. 84 (assays)

105 G

2. BLUEBERRY (105 G 2)

Classification: Silver-lead-zinc-copper-tungsten vein.
References:
N.C.M.I.

4. EAGLE (TINTINA) (105 G 3)

Geology: A plug of Cretaceous granodiorite is intrusive to Lower Cambrian carbonates and fine-grained clastics and is flanked by garnet-diopside-epidote skarn and an extensive hornfels zone. Mineralization can be broken into four types:
1) Massive to disseminated sphalerite, galena and freibergite within grey to light grey upper limestone with minor argillite. It is mottled due to secondary stringers and patches of calcite and quartz, and appears to be the most favourable host for mineralization. The sulphide occurrences are best developed in the crests of small anticlinal folds and at or close to the contact with overlying graphitic argillite;
2) Disseminated sphalerite within a mottled or streaky and locally argillaceous lower limestone;
3) Pods and discontinuous lenses of massive galena with minor sphalerite-calcite-quartz veins associated with thrust faults at the base of an argillaceous limestone;
4) Quartz veins with minor chalcopyrite cutting mainly argillaceous limestone.
Geochemistry: Some favourable intersections from 1974 diamond drilling:

Drill Hole	Intersection	Ag (oz/ton)	Pb (%)	Zn (%)
A-8	15.0 ft.	79.27	0.83	6.20
A-41	11.7 ft.	127.28	11.44	19.60
A-41	7.0 ft.	6.77	1.76	8.46

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc veins and replacement.
References:
INAC Reports: 1974 MIR, p. 156-158; 1975 MIR, p. 164-165; 1976 MIR, p. 199-203 (includes map)
Other: Skinner (1962, p. 37-39); Green and Godwin (1963, p. 26-29)
Recent References: 1987 YEX, p. 168 (drilling, assays)

5. PLUMB (NOLE) (105 G 6)

Geology: Paleozoic fine-grained clastics and carbonates underlie the area. Mineralization consists of patches of fracture controlled sphalerite, galena and pyrite in Siluro-Devonian sandy dolomite unit up to 15 m in thickness. The poorly exposed unit is brecciated and sporadically mineralized for about 2 km along the northwest strike.
Classification: Cretaceous magmato-hydrothermal, intrusive-distal, epizonal lead-zinc-(silver) veins.
Comments: Probably a distal fluid similar to HOWRU and possibly related to the pluton at the Eagle occurrence.
References:
INAC Reports: 1977 MIR, p. 86

6. FH (JOE) (105 G 5)

Geology: Mississippian felsic volcanic rocks are host to four types of mineralization: 1) Pods or lenses of barite with disseminated and interbedded laminations of pyrite, galena and sphalerite; 2) Sphalerite and/or galena with pyrite in brecciated felsic volcanic rocks; 3) Laminations of galena and sphalerite interbedded with tuff and, 4) Vugs with pyrite and trace galena and sphalerite in chert within a zone of altered volcanic rocks.
Geochemistry: A sample of the third type assayed 34.3 g/t Ag, 0.3% Pb and 0.26% Zn over 1.5 m.
Classification: Mississippian tectono-hydrothermal, volcanogenic exhalative silver-lead-zinc massive sulphide and barite.
References:
INAC Reports: 1977 MIR, p. 86; 1978 MIR, p. 64-65; 1983 YEG, p. 176-177
Assessment Reports: 091465
Other: Morin (1977, p. 83-97)

11. PICK (105 G 6)

Classification: Silver-lead vein.
References:
N.C.M.I.

15. ZIELINSKI (105 G 6)

Classification: Lead-zinc-copper-silver vein.
References:
N.C.M.I.

19. PIT (105 G 7)

Classification: Zinc-copper-silver-gold vein.
References:
N.C.M.I.

20. ROB (105 G 7)

Classification: Copper-lead-silver vein.
References:
N.C.M.I.

22. FYRE (105 G 2)

Geology: Amphibolite facies cataclastic rocks represent the Nisutlin Allochthon in this area. A mineralized unit is underlain by chlorite-quartz-schist and amphibolite, and overlain by biotite-quartz-feldspar phyllite and gneiss. It consists of massive pyrite with minor quartz and chalcopyrite in the east, and quartz-magnetite-chlorite-chalcopyrite in the west.

Geochemistry: The best diamond drill interval (DDH 66-3) is 0.81% Cu, 0.2 g/t Au and 5.1 g/t Ag over 12.5 m of banded magnetite-bearing quartzite with up to 20% disseminated sulphides (pyrite, pyrrhotite and chalcopyrite). Gold is associated with the sulphide-rich rock where an average of three samples gave 766 ppb.
Classification: Devono-Mississippian (?) tectono-hydrothermal, volcanogenic exhalative copper-gold-silver massive sulphide.
References:
INAC Reports: 1981 YEG, p. 135
Assessment Reports: 090920
Other: Morin (1981b, p. 91-97 includes map)

23. TOP (105 G 1)

Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

29. CHOW (105 G 13)

Classification: Lead-zinc-silver vein.
References:
1977 MIR, p. 88

33. PAY (105 G 15)

Geology: The discovery outcrop is a small knoll of grey-weathering, blue-grey, silicified limestone or dolomitic limestone, locally brecciated and impregnated with fine quartz and carbonate stockworks. In places, replacement lenses and patches of sphalerite with minor galena occurs in the brecciated host rock.
Geochemistry: A grab sample of galena-bearing stockwork material assayed 0.10 oz/ton Au, 3.64 oz/ton Ag, 17.2% Pb and trace Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal lead-silver-gold vein stockwork and replacement.
References:
Findlay (1969a, p. 81-83)

36. JAKE (105 G 16)

Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

37. MAP (105 G 1)

Classification: Silver-lead vein.
References:
N.C.M.I.

38. WATERS (105 G 1)

Classification: Silver-lead vein.
References:
N.C.M.I.

105 H

1. JAN (105 H 1)

Geology: Metasedimentary rocks are intruded by the Mount Billings Batholith and copper-gold-bearing pyrite, pyrrhotite and chalcopyrite occur in skarn developed in limestone.
Geochemistry:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
41	66	LT 0.5	220	111	82
39	81	2.1	68	390	79
40	498	LT 0.5	76	195	78
42	110	LT 0.5	2100	103	153
43	34	0.5	2700	1669	130

	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
41	LT 1	130	1205	60.1	LT 5
39	LT 1	100	44	379.0	LT 5
40	LT 1	100	2049	187.0	LT 5
42	LT 1	110	1056	64.2	LT 5
43	LT 1	100	443	42.0	LT 5

	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
41	2.2	LT 10	440	15	3
39	25.8	LT 10	190	15	2
40	17.3	LT 10	1100	LT 5	3
42	2.5	LT 10	500	15	3
43	1.6	LT 10	1100	LT 5	2

	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
41	22	LT 10	29	LT 1	LT 1
39	22	LT 10	23	5	5
40	14	LT 10	7	LT 1	LT 1
42	15	LT 10	65	271	LT 1
43	13	LT 10	31	44	4

	Na %	Br ppm	Fe %	Th ppm	U ppm
41	0.62	LT 2.0	5.1	15.0	3.8
39	1.40	3.6	2.4	7.8	1.1
40	0.21	3.2	11.0	7.2	2.0
42	0.32	LT 2.0	18.0	8.4	2.4
43	0.19	LT 2.0	29.0	5.6	1.3

Sample Description:
41 - Diopside-quartz tactite; flaser texture; 1% disseminated pyrrhotite;
39 - Quartz vein, rusty weathering and rusty coated fracture surfaces; highly fractured; no visible sulphides;
40 - dark gray quartz-actinolite (?) siliceous hornfels with minor patchy pyrrhotite;
42 - Actinolite-quartz-pyrrhotite skarn; weathered with limonite coating on fracture surfaces;
43 - pyrrhotite-actinolite skarn with minor chalcopyrite
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal copper-gold skarn.
Comments: More skarn is located to the north about 5 km (MIDAS).
References:
INAC Reports: 1979-80 YGE, p. 185; 1981 YEG, p. 139; 1982 YEG, p. 131
Assessment Reports: 091066; 090534; 090927

3. FLIP (MTB) (105 H 2)

Geology: Skarn developed along contact of limestone and clastics near Mount Billings Batholith. Sphalerite-galena-chalcopyrite as disseminations and massive lenses within the skarn.
Classification: Cretaceous magmato-hydrothermal, katazonal (?) intrusive-proximal lead-zinc-silver-tungsten skarn.
References:
INAC Reports: 1979-80 YGE, p. 185
Assessment Reports: 090209; 090934

4. DC (105 H 2)

Geology: On the northwestern flank of the Billings Batholith, granitic rock and alaskite sills intrude a sequence of metamorphosed sedimentary rocks. Sphalerite, galena, chalcopyrite and calc-silicate minerals (epidote, garnet, diopside) occur in a recrystallized limestone bed that underlies an alaskite sill.
Geochemistry: Some trench samples assayed the following:

Sample #	DC 12	DC 14
Au (oz/ton)	Trace	0.005
Ag (oz/ton)	0.70	6.62
Pb (%)	9.2	11.3
Zn (%)	8.0	10.1
Cu (%)	2.04	Trace
Cd (%)	-	0.06

Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal silver-lead-zinc skarn.
References:
Assessment Reports: 017579
Other: Green (1966, p. 72)

5. MIKO (105 H 7)

Geology: Epidote-dominant skarns located near the Mount Billings Batholith. Mineralization occurs in fissures in the skarn zone, possibly related to post-skarn emplacement fracture patterns.
Classification: Lead-zinc-silver-gold skarn near batholith.
References:
INAC Reports: 1982 YEG, p. 140
Assessment Reports: 091171; 060700

6. GLENNA (105 H 7)

Geology: Epidote-magnetite skarns within 120 m of contact with Mount Billings Batholith. Sphalerite, galena, pyrrhotite, magnetite, chalcopyrite and scheelite occur as pods, lenses and disseminations within the skarns.
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal lead-zinc-silver skarn.
References:
INAC Reports: 1981 YEG, p. 141
Assessment Reports: 018910; 091176

17. MATT BERRY (105 H 6)

Geology: Pods of sphalerite-galena occur within phyllite on the west side of the Mount Billings Batholith.
Reserves: Estimated reserves in 1977 including a combination of drill-indicated and inferred was 534 000 tonnes of 6.1% Pb, 4.6% Zn and 100 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal lead-zinc-silver replacement.
Comments: Probably a skarn related to Mount Billings Batholith.
References:
INAC Reports: 1979-80 YGE, p. 185; 1981 YEG, p. 141
Assessment Reports: 062299
Recent References: 1987 YEX, p. 172; 1988 YEX, p. 97

18. FLUKE (105 H 7)

Classification: Lead-zinc-silver-copper-tungsten skarn.
Comments: Mineralogy of ore minerals (magnetite, pyrrhotite, sphalerite, galena, chalcopyrite and scheelite) suggests that there may be gold potential, i.e., a copper-iron skarn confused by lead-zinc-tungsten.
References:
INAC Reports: 1979-80 YGE, p. 186
Assessment Report: 090702

19. CANYON (105 H 1)

Geology: Two mineralized zones occur in sedimentary rocks near a granitic intrusion. The Upper Skull Zone is galena-sphalerite-pyrite mineralization in sheared shale, phyllite, graphitic schist and argillaceous sedimentary rocks with quartz veins accompanied by skarn. The Lower Skull Zone is a flat-lying lens of disseminated galena-sphalerite-pyrite-pyrrhotite interbedded in skarn in quartz phyllite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal lead-silver skarn.
References:

INAC Reports: 1982 YEG, p. 132
Assessment Report: 091060; 091072

26. RON (105 H 7)

Geology: Sedimentary rocks of the Upper Proterozoic and Lower Cambrian 'Grit Unit' are intruded and metamorphosed by the Cretaceous Billings Batholith. Locally, paragneiss contains scattered, discontinuous epidote- and clinopyroxene-rich bands with pyrrhotite, galena, sphalerite and minor pyrite and chalcopyrite. The bands can locally be traced into granitic zones where they lens out.
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal lead-zinc-silver skarn.
References:

Green (1966, p. 70-71)

28. BROD (105 H 9)

Geology: Skarn developed near limestone - intrusive contact on the northeast side of the Mount Billings Batholith. One skarn is mineralized with pyrite-pyrrhotite-sphalerite-galena.
Classification: Cretaceous magmato-hydrothermal, intrusive-proximal, silver-lead-zinc skarn.
References:

INAC Reports: 1979-80 YGE, p. 186
Assessment Report: 090599

29. RAIN (105 H 9)

Classification: Copper skarn, gold-silver veins.
References:

Assessment Reports: 092148
Recent References: 1988 YEX, p. 97-99 (map included)

31. TOY (REA) (105 H 10)

Geology: Sedimentary rocks of the Upper Proterozoic and Lower Cambrian 'Grit Unit' are intruded and metamorphosed by the Cretaceous Billings Batholith. The metasediments are silicified and intruded by sills and dykes near the granodiorite contact. Mineralization consists of erratically distributed zones of pyrrhotite, minor chalcopyrite, sphalerite and galena within the silicified parts of some metasedimentary units. Several of the small local fold crests contain silicified and oxidized zones of pyrrhotite.
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal zinc-lead-silver replacement.
References:

1976 MIR, p. 210-211

38. TED (105 H 12)

Geology: Lead-zinc-silver-gold mineralization occurs within massive stratabound barite (not sure if a vein or a bed) in calcareous siltstone that may be within the Canol Formation.
Classification: Stratabound condordant barite-lead-zinc-silver-gold vein.
References:
1979-80 YGE, p. 186; 1981 YEG, p. 142

40. LEE (105 H 14)

Classification: Zinc-lead (silver, antimony) skarn.
References:
N.C.M.I.

44. HITCH HIKER (105 H 14)

Geology: A sequence of thick-bedded limestones, carbonaceous and graphitic schists are intruded by a small Cretaceous granite stock. Galena, sphalerite and chalcopyrite occur as veins and replacement lenses in fractured limestone.
Geochemistry: Selected rock samples assayed 5-10% combined Pb-Zn-Cu and up to 994 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc veins and replacement lenses.
References:
INAC Reports: 1985-86 YEX, p. 241
Assessment Reports: 091689

51. LAN (105 H 1)

Geology: Cretaceous granodiorite to quartz-feldspar-biotite porphyry intrusive (lobe of Mount Billings Batholith) to Hadrynian clastic and carbonate rocks; disseminated pyrite-pyrrhotite in some of the intrusive rocks and pyrrhotite-galena-sphalerite in epidote-diopside-wollastonite skarn; also bands of magnetite up to 2m wide.
Geochemistry:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
44	56	29.8	1100	GT 10 000	GT 20 000
45	LT 2	9.8	400	5410	4140
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
44	80	110	10 070	29.0	LT 5
45	19	250	9335	21.0	LT 5

	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
44	3.2	LT 10	LT 50	10	LT 1
45	1.2	LT 10	LT 50	LT 5	1
	B ppm	**Sn ppm**	**Bi ppm**	**W ppm**	**Mo ppm**
44	11	LT 10	89	3	2
45	14	LT 10	24	LT 1	LT 1
	Na %	**Br ppm**	**Fe %**	**Th ppm**	**U ppm**
44	0.06	LT 2.0	8.9	1.1	LT 0.2
45	0.18	LT 2.0	19.0	14.0	3.4

Sample Description:
44 - North skarn lens; actinolite-epidote-quartz-(chlorite) skarn with disseminated sphalerite, galena and pyrite;
45 - actinolite-epidote-chlorite skarn with disseminated pyrite, sphalerite and galena
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal lead-zinc-silver skarn.
Comments: This showing appears to be on trend with the JAN.
References:
1979-80 YGE, p. 187

53. VIKING (105 H 15, 14)

Geology: Mineralization occurs in a 20 m thick pyrite-sericite phyllite horizon bounded by quartzite and consists of discontinuous pods and bands of sphalerite and galena concordant with the schistosity. Reflected by a patchy gossan up to 15 m wide and 80 m long; the thickest pod 1 m thick and the longest is 2 m. This area is the northwestern apical tail end of the Mount Billings Batholithic Terrane.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal lead-zinc-silver skarn.
Comments: Small stock 6 km to the southeast; host rocks on map are folded into antiform; perhaps stock intrusion reflected by antiformal structure? Is there a stock at depth here? Perhaps the antiforms in this region are worth prospecting for distal skarns above subjacent igneous bodies?
References:
INAC Reports: 1979-80 YGE, p. 187
Assessment Report: 090498

55. JULIA (105 H 5)

Geology: Volcanic rocks of the Anvil-Campbell Allochthon include basaltic and andesitic pillow lavas, pillow breccias and tuffs intercalated with beds of argillaceous and cherty, tuffaceous sedimentary rocks and beds of massive pyrite with minor chalcopyrite and sphalerite. Disseminated and stockwork type mineralization is also present consisting of pyrite with minor chalcopyrite and traces of sphalerite in quartz-clay altered tuffaceous sediment.
Geochemistry: Selected grab samples of massive sulphide assayed up to 2.05 g/t Au, 28.39 g/t Ag and 2.06% Cu. Diamond drill hole intersections included the following:

DDH	Intersection	Au (oz/ton)	Ag (oz/ton)	Cu (%)	Zn (%)
1	9.1 m	0.001	0.11	0.076	0.15
2	1.2 m	0.022	1.02	0.620	0.15
3	33.5 m	0.002	0.13	0.141	0.18

Classification: Proterozoic or Paleozoic volcanogenic, exhalative copper-zinc-gold-silver massive sulphide.
References:
INAC Reports: 1981 YEG, p. 143
Assessment Reports: 090858

61. SUZANNE (105 H 2)

Geology: On the eastern flank of the Billings Batholith, metamorphosed sedimentary rocks are intruded by granite to quartz monzonite. Mineralization consists of minor pyrrhotite and chalcopyrite in hornfels and several areas of galena-sphalerite mineralization with accessory pyrite, pyrrhotite and chalcopyrite in a limestone skarn.
Geochemistry: The following two samples are representative of the mineralization:

Sample #	Width	Au (oz/ton)	Ag (oz/ton)	Pb (%)	Zn (%)	Cu (%)
9776	4 ft.	0.004	0.45	11.55	12.75	0.01
9777	2 ft.	0.003	1.02	6.30	7.23	0.01

Classification: Cretaceous magmato-hydrothermal, katazonal (?), intrusive-proximal lead-zinc-silver skarn.
References:
INAC Reports: 1976 MIR, p. 207-208
Assessment Reports: 090128

63. MAXI (105 H 11)

Geology: Sedimentary rocks of Proterozoic to Mississippian age are intruded by granodiorite of the Cretaceous Billings Batholith. Mineralization consists mainly of quartz and sphalerite with lesser amounts of galena, magnetite and rare chalcopyrite. These occur along the foliation, in minor fold crests and in joint intersections within the black graphitic phyllite of Ordovician-Silurian age. Mineralized bands are very narrow and seldom exceed several centimetres in thickness.
Classification: Cretaceous magmato-hydrothermal, intrusive-distal, mesozonal zinc-lead-silver replacement and veins.
References:
INAC Reports: 1977 MIR, p. 90; 1978 MIR, p. 67-68
Other: Dawson (1979, p. 375-376)

105 I

1. NAR (105 I 4)

Classification: Copper-lead-silver-zinc vein and skarn.
References:
N.C.M.I.

4. PELLY RIVER (NOM, SEL) (105 H 13)

Geology: Host rocks are a sequence of Devonian-Mississippian shale, limy shale, minor limestone and sandstone grit. Disseminated pyrite occurs on bedding planes in black argillite and pyrite and arsenopyrite with traces of gold occur in a quartz vein crosscutting black shale.
Classification: Gold vein.
References:
1974 MIR, p. 165-166; 1983 YEG, p. 183

5. HOWARD'S PASS (105 I 6)

Geology: The property lies within the Selwyn fold belt and is underlain by northwest-trending Cambrian to Devonian sedimentary rocks tightly folded into a broad synclinorium. An Ordovician limestone grades to a 1000 m sequence of Ordovician to Mississippian shales, sandstones and conglomerates. Sixty metres above the limestone-shale contact, a graphitic laminated shale-mudstone contains extremely fine-grained sphalerite and galena in complex saucer-shaped bodies up to 30 m thick.
Reserves: Evaluation based on underground work resulted in 115 million tonnes indicated reserves and 365 million tonnes inferred reserves of 5.4% Zn and 2.1% Pb. The laminated to massive sulphides have assayed up to 50% combined lead and zinc, with the highest values occurring in thin calcareous lenses. Average grades are 7.15% combined lead and zinc with 17 g/t Ag.
Classification: Early Silurian syn-sedimentary, exhalative lead-zinc-silver massive sulphide deposit.
References:
INAC Reports: 1985-86 YEX, p. 243-244
Assessment Reports: 091690
Other: Goodfellow et al. (1983); Norford and Orchard (1985); Morganti (1985); Goodfellow (1984); Goodfellow and Jonasson (1986); Jonasson and Goodfellow (1986)

8. WISE (105 I 12)

Classification: Stratabound concordant lead-zinc-silver mineralization.
References:
N.C.M.I.

105 J

3. PIKE (105 J 2)

Geology: Copper-silver and minor lead-zinc mineralization occurs near the top of a steeply dipping coarse rhyolite ignimbrite sheet about 100 m thick that is overlain by tuff, dacite and andesite (1978 MIR). Others report an elongate acidic stock or plug ranging from medium-grained granodiorite or quartz monzonite to porphyritic with quartz and plagioclase phenocrysts. Sulphides, including arsenopyrite, chalcopyrite, pyrite, galena and sphalerite occur disseminated through a rusty, gossanized zone along the contact of the intrusion and in its strongly fractured marginal rocks.
Geochemistry: A 1981 drill hole intersected pyrite, arsenopyrite and minor chalcopyrite mineralization filling fractures in porphyritic granite. This Zone #1 averaged 0.513% Cu and 45.7 g/t Ag over 17.5 m.
Classification: Eocene (?) magmato-hydrothermal, mesozonal, intrusive-proximal copper-silver vein stockwork and dissemination.
References:

INAC Reports: 1978 MIR, p. 71; 1981 YEG, p. 149
Assessment Reports: 090902
Other: Chisholm and Brock (1967); Findlay (1967, p. 60-61); Findlay (1969a, p. 80)

6. DRAGON (105 J 12)

Geology: A hornfels zone is developed within Grit Unit rocks next to a quartz monzonite stock. Three types of mineralization were identified: 1) narrow arsenopyrite-quartz-sericite veins in gritty quartzite; 2) quartz-sericite-pyrite +/- scheelite veins in the sericitized margins of the quartz monzonite and 3) pyrrhotite-pyroxene skarn pods up to 2 x 5 m in area.
Geochemistry: Samples collected by Morin and Emond gave the following results:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
3	LT 4	15.7	67	2517	909
4	71	7.8	282	1888	668
5	34	7.4	284	1665	318
6	160	14.8	2817	1991	125
7	120	2.4	1699	622	718
8	232	2.8	5090	145	206
9	249	15.5	159	654	43

	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
3	7	630	401	69.9	LT 5
4	4	450	6708	65.8	LT 5
5	2	760	4760	12.0	LT 5
6	LT 1	420	1653	11.0	7
7	5	550	11157	7.7	LT 5
8	LT 1	160	6650	6.9	LT 5
9	LT 1	380	258	18.0	LT 5

	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
3	78.5	LT 22	400	50	1
4	42.5	LT 10	LT 50	35	LT 1
5	52.1	LT 10	LT 50	25	LT 1
6	42.0	LT 10	LT 50	15	LT 1
7	17.0	LT 10	LT 50	15	LT 1
8	2.6	LT 10	LT 50	5	LT 1
9	22.8	LT 10	200	10	2

	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
3	39	LT 10	9	16	LT 1
4	22	LT 10	27	3	LT 1
5	21	23	LT 2	LT 1	LT 1
6	20	77	LT 2	8	LT 1
7	19	LT 10	21	LT 1	LT 1
8	13	LT 10	199	171	LT 1
9	45	LT 10	535	131	LT 1

	Na %	Br ppm	Fe %	Th ppm	U ppm
3	0.58	LT 2.0	2.6	18.0	5.2
4	0.09	LT 2.0	17.0	3.3	1.3
5	0.07	LT 2.0	15.0	0.9	1.1
6	0.02	LT 2.0	34.0	2.2	3.1
7	0.08	LT 2.0	12.0	0.9	0.8
8	0.06	LT 2.0	39.7	4.0	2.1
9	0.20	LT 2.0	1.5	13.0	2.1

Sample Description:
3 - Quartz-sericite-pyrite altered quartz monzonite; limonite disseminated and along fractures; orange weathering;
4 - quartz-pyrrhotite diopside (?) skarn;
5 - pyrrhotite-quartz-diopside (?) skarn;
6 - pyrrhotite-actinolite skarn;
7 - actinolite-calcite skarn; highly oxidized;
8 - proximal actinolite-pyrrhotite skarn;
9 - greisen-like quartz-sericite-pyrite alteration in quartz monzonite and 1 cm wide quartz-calcite vein with trace molybdenite;
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-lead-zinc-gold-silver skarn.
References:
INAC Reports: 1983 YEG, p. 187; 1984 YEX, p. 105
Assessment Report: 091533

14. ITSI (105 J 16)

Geology: Middle Paleozoic chert and black shale are intruded by a granodiorite stock. Three northeasterly-trending quartz veins between 0.2 m and 2.5 m thick are exposed for lengths of 20 m to 200 m and contain pyrite, arsenopyrite, pyrrhotite, chalcopyrite and galena.

Geochemistry: The No. 2 vein, the largest, was chip sampled over a strike length of 250 m in 15 locations with thicknesses between 0.6 m and 2.5 m. The weighted average of assays was 48.9 g/t Ag, 0.47% Pb, 0.13% Zn, 0.2% Cu, 0.97% As and 0.16% Sn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc vein.
References:
INAC Reports: 1979-80 YGE, p. 193
Assessment Reports: 090779

15. COSTIN (105 J 16)

Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

18. HENCH (105 J 3)

Geology: Sedimentary rocks ranging from Ordovician to Mississippian are intruded by granitic rocks and diorite dykes. Calcareous phyllite, altered porphyritic diorite and calc-silicate schist are host to thin (less than 15 cm) quartz veinlets bearing sphalerite, galena and minor chalcopyrite.
Geochemistry: The best reported assay is of a 15 cm thick vein - 18.8% Pb, 14.8% Zn, 2.36 oz/ton Ag and 0.06% Cu.
Classification: Cretaceous or Tertiary magmato-hydrothermal, mesozonal, intrusive-proximal lead-zinc-silver veins.
References:
INAC Reports: 1978 MIR, p. 71; 1979-80 YGE, p. 193-194
Assessment Reports: 090526

23. TRAFFIC (MARYLOU) (105 H 1)

Geology: Coarse clastic sedimentary rocks and intercalated slate of the Proterozoic "Grit Unit" are intruded by small plugs of porphyritic biotite-quartz monzonite. The showings are similar and consist of lenses and cavity fillings of sulphides in the hornfelsed country rocks close to the intrusive bodies. On the peak of Traffic Mountain are several lenses of massive arsenopyrite, galena, sphalerite and chalcopyrite up to 2 m thick and traced for 10 m. The lenses are within a 12 m thick quartzite bed and may be breccia or cavity fillings.
Geochemistry: A chip sample across 2 m returned 454 g/t Ag, 1.01% Cu, 5.10% Pb and 1.96% Zn.
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal copper-lead-zinc-silver vein and/or replacement.
References:
INAC Reports: 1979-80 YGE, p. 194
Assessment Reports: 090704

24. PIG (105 J 2)

Geology: Lower Paleozoic sedimentary rocks are intruded by dykes and sills of Tertiary (?) diorite. The sedimentary rocks include calc-silicates, marble, amphibolite, shale, chert and limestone. Mineralization is of several types: pyrite, pyrrhotite, chalcopyrite, galena and sphalerite within the

calc-silicate unit; float boulders of layered sphalerite and galena in black shale; quartz-arsenopyrite-galena veins interpreted to occur above buried intrusions.
Classification: Tertiary (?) magmato-hydrothermal, mesozonal, intrusive-proximal (?) silver-lead-zinc vein and replacement.
References:
1975 MIR, p. 169-170; 1976 MIR, p. 214; 1977 MIR, p. 93

27. AM (105 J 4)

Classification: Copper-molybdenum porphyry; gold-silver-lead-zinc-copper vein/breccia and skarn.
References:
INAC Reports: 1981 YEG, p. 150; 1982 YEG, p. 138-139 (assays)
Assessment Reports: 092485
Recent References: 1988 YEX, p. 103-105 (assays, map)

105 K

14. JO AND ED (SPUR) (105 K 2)

Geology: Altered schist adjacent to an altered granodiorite contains pyrite, galena and sphalerite.
Geochemistry: A diamond drill intersection assayed 70 g/t Ag, 2.3% Pb, 1.3% Zn and 0.03% Cu over an interval of 0.45 m.
Classification: Cretaceous to Tertiary magmato-hydrothermal mesozonal, intrusive-proximal silver-lead-zinc mineralization.
References:

Findlay (1969a, p. 47-48)

21. SEA (105 K 2)

Classification: Lead-zinc-silver stratabound concordant.
References:

INAC Reports: 1982 YEG, p. 18, 154-155
Other: Green (1965, p. 36-37); Jennings & Jilson (1986)

22. BS (105 K 2)

Classification: Lead-zinc-copper-silver (barite) stratabound concordant.
References:

1973 MIR, p. 58

25. SWIM (105 K 3)

Geology: A pyritic and baritic massive sulphide deposit is hosted in noncalcareous phyllite immediately below thick graphitic phyllite unit of the Anvil District. Silver is largely in galena, but there are no data on the systematics of silver and gold distribution.
Reserves: Geological reserves are shown in the table on the next page.
Classification: Upper Proterozoic to Lower Cambrian tectono-hydrothermal, synsedimentary, exhalative lead-zinc-silver massive sulphide.
References:

INAC Reports: 1982 YEG, p. 18, 154-155
Other: Jennings and Jilson (1986); Shanks et al. (1987)

27. MUR (105 K 6)

Classification: Silver-lead-zinc vein.
References:

N.C.M.I.

29. VANGORDA (105 K 6)

Geology: A massive sulphide deposit is hosted at and near the top of the noncalcareous phyllite unit of the Anvil District. Silver is hosted in galena. There is a suggestion of gold enrichment in pyritic quartzites in the structural footwall (stratigraphic hanging wall) of the main horizon that is spatially coincident with the thickest development of baritic ore. These quartzites are in the stratigraphic footwall of higher smaller ore lenses, but their position is uncertain.
Reserves: Geological reserves are listed in the table on the next page. 1988 reserve estimates indicate 7.5 million tonnes of 3.8% Pb, 4.9% Zn, 54 g/t Ag and 0.8 g/t Au, of which 6 million tonnes is mineable by open pit.
Classification: Hadrynian to lower Cambrian synsedimentary, exhalative lead-zinc-silver-gold massive sulphide deposit.
References:

Tempelman-Kluit (1972, p. 46-47); Jennings and Jilson (1986)

30. GRUM (105 K 6)

Geology: Several massive sulphide horizons are hosted in noncalcareous and calcareous phyllite below the main graphitic phyllite unit of the Anvil District. Silver is in galena and tennantite and enriched in the massive sulphide facies. The over-all distribution of silver and gold is unknown in the individual horizons, wallrocks or the deposit as a whole, but it tends to follow the total sulphide content and to some extent the grade.
Reserves: Geological reserves are listed in the table on the next page. Recent (1988) reserve estimates are 30.6 million tonnes grading 3.4% Pb, 5.8% Zn, 57 g/t Ag and 1.0 g/t Au. Approximately 24 million tonnes are mineable by open pit methods.
Classification: Upper Proterozoic to Lower Cambrian synsedimentary, exhalative lead-zinc-silver-gold massive sulphide deposit.
References:

INAC Reports: 1982 YEG, p. 142-143
Other: Jennings and Jilson (1986); Shanks et al. (1987)

31. KULAN (105 K 6)

Classification: Lead-zinc-copper-silver (barite) stratabound concordant.
References:

Tempelman-Kluit (1972, p. 32)

34. FARO (105 K 6)

Geology: A massive sulphide deposit is hosted in noncalcareous phyllite of lower Cambrian to Hadrynian (?) age beneath a graphitic schist unit. Silver is largely structurally bound in galena and enriched in the massive sulphide facies of the deposit. The distribution of gold is uncertain but appears to be lower grade than other deposits in the Anvil District.
Reserves: At the beginning of 1988, open pit reserves were 17.5 million tonnes grading 3.04% Pb, 4.77% Zn and 38 g/t Ag and underground reserves were 2 million tonnes grading 4.5% Pb, 7.0% Zn and 61 g/t Ag. Production from the FARO deposit in 1988 was 4.1 million tonnes of ore containing 149.3 million kg lead, 200.9 million kg Zn and 214 million g of silver.
Classification: Hadrynian to Lower Cambrian synsedimentary, exhalative lead-zinc-silver-barite massive sulphide deposit.

References:
INAC Reports: 1984 YEX, p. 111
Other: Jennings and Jilson (1986); Shanks et al. (1987)
Recent References: 1988 YEX, p. 109-110

SUMMARY OF TONNAGE AND GRADE FIGURES FOR ANVIL DISTRICT ORE DEPOSITS AS OF JUNE 1983 (From Jennings and Jilson, 1986, Table 8)

Deposit	Tonnage (million tonnes)	Pb %	Zn %	Ag g/t	Cutoff (% Pb+Zn)
Faro					
Geological reserves before mining:	57.6	3.4	4.7	-	5.0
Remaining geological reserves (1983):	33.0	3.0	4.6	36	4.0
Remaining open pit reserves (1983):	25.2	2.9	4.3	36	4.0
Grum					
Geological reserves:	30.8	3.1	4.9	49	4.0
Open pit reserves:	16.9	3.0	4.9	47	4.0
Vangorda					
Geological reserves:	7.1	3.4	4.3	48	4.0
Open pit reserves:	5.2	3.4	4.2	47	4.0
Dy					
Geological reserves:	20.3	5.7	7.0	82	9.0
Swim					
Geological reserves:	4.3	3.8	4.7	42	6.0
Total					
Geological reserves before mining:	120.1	3.7	5.6	-	N/A
Remaining geological reserves (1983):	95.5	3.7	5.2	51	N/A
Remaining open pit reserves (1983):	47.3	3.0	4.5	41	4.0

*For more recent information see under each deposit.

37. JACOLA (105 K 5, 6)

Geology: Silver-lead-zinc vein.
Comment: Also known as KIM.
References:
Findlay (1969a, p. 45)

43. OWL (105 K 11)

Geology: Upper Devonian and Lower Mississippian sedimentary rocks are cut by veins containing sphalerite, galena, chalcopyrite and arsenopyrite with a maximum width of 1 ft.
Geochemistry: Sample assays have returned the following values: 0.01 oz/ton Au, 7.68 oz/ton Ag, 0.25% Cu, 4.0% Pb and 20.2% Zn.
Classification: Copper-lead-zinc-silver vein.
References:

Craig and Laporte (1972, p. 93-94)

51. LAD (105 K 16)

Classification: Silver-lead-zinc-copper vein.
References:

Other: N.C.M.I.
Assessment Reports: 091710
Recent References: 1987 YEX, p. 181 (drilling, assays)

52. SOLO (105 K 16)

Geology: Argillite, quartzite and interbedded argillite and conglomerate of Ordovician or Silurian age are intruded by granodiorite and rare narrow dykes of quartz porphyry. Galena, boulangerite and sphalerite fill fractures and faults in the quartzite.
Geochemistry: A grab sample assayed 87.98 oz/ton Ag, 75% Pb, 0.2% Zn, 0.11% Sn and 0.9% Sb.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead vein.
References:

Craig and Laporte (1972, p. 97-98)

57. BRAB (105 K 12)

Geology: A series of thin (less than 2 m) skarn beds occur in the limy to pelitic sediments of the Upper Vangorda Formation rocks within the contact metamorphic aureole of the Cretaceous quartz monzonite Anvil Batholith. Pyrrhotite, pyrite, chalcopyrite, sphalerite, arsenopyrite and molybdenite locally comprise up to 25% of the skarn bands but generally average 3-5% over the total width of the bands. Minor scheelite was also noted.
Classification: Cretaceous magmato-hydrothermal, katazonal, intrusive-proximal copper-zinc-silver-tungsten skarn.
References:

INAC Reports: 1981 YEG, p. 155.
Assessment Report: 090831

80. MAY (105 K 4)

Classification: Zinc-lead-(silver-antimony) skarn.
References:

1978 MIR, p. 42

86. LADY DI (105 K 13)

Geology: Stratabound mineralization occurs in Devono-Mississippian rocks near the top of a siltstone unit and is capped by massive unfossiliferous Kalzas Formation limestone. The main showing is 200 m long and consists of a series of pyrrhotite, sphalerite and galena bodies up to 3 m by 16 m.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal lead-silver-zinc skarn.
References:
INAC Reports: 1982 YEG, p. 145
Assessment Reports: 091081, 091420

88. GREW CREEK (105 K 2, 3; 105 F 15)

Geology: Eocene volcanic rocks and fluvioclastic sediments are enclosed in downdropped fault blocks within Tintina Trench. The volcanic rocks are bimodal in composition and include basaltic and rhyolitic flows, dykes and volcaniclastics. Extensive silicic and advanced argillic alteration is accompanied by hydrothermal breccias with chalcedony and comminuted rock matrix, veins and veinlets within welded rhyolitic ash flow tuff. Disseminated gold mineralization is associated with the silicification, veining and breccia. The MAIN zone has a strike length of approximately 550 m with a vertical depth of 175 m, and is open to the northwest (April, 1988)
Geochemistry: The best drill intersection by the end of 1987 was 103.3 ft. of 0.34 oz/ton Au and 4.4 oz/ton Ag (DDH 87-29).
Analyses of samples collected by Morin are presented below:

	83-22	83-23	83-24	83-25	83-26	M-30
Au ppb	1600	-	170	-	480	-
Au oz/t	-	0.360	-	1.25	-	1.17
Mn ppm	12	24	10	14	16	30
Cu ppm	5.5	65.0	3.0	4.5	5.5	9.0
Zn ppm	9.5	21.0	6.0	6.0	8.5	6.0
As ppm	180	170	190	140	140	250
Ag ppm	2.0	4.5	1.0	62.0	1.5	-
Ag oz/t	-	-	-	-	-	6.43
Sn ppm	LT 3	LT 3	LT 3	LT 3	LT 3	LT 3
Sb ppm	36.0	19.0	15.0	17.0	17.0	29.0
Ba ppm	560	320	180	140	360	340
W ppm	7	7	7	4	11	8
Hg ppb	170	-	80	-	170	
Hg ppm	-	1.2	-	3.6	-	13.0
Pb ppm	26	16	10	10	16	28
Bi ppm	0.3	0.3	0.2	0.4	0.5	0.3

	87-22	87-23
Au ppb	31	78600
Sb ppm	13.4	38.7
As ppm	33.0	95.4
Ba ppm	1300	LT 160
Br ppm	LT 2.0	LT 2.0
Cd ppm	LT 5	LT 11
Ce ppm	130.0	LT 54.0
Cs ppm	13.0	8.1
Eu ppm	LT 1	LT 1
Hf ppm	6	LT 4
Ir ppb	LT 50	LT 140
Fe %	0.4	1.1
La ppm	68	6
Lu ppm	LT 1.0	LT 1.0
Mo ppm	3	LT 5
Ni ppm	LT 20	20
Rb ppm	734	110
Sm ppm	4.20	0.84
Sc ppm	3.0	LT 0.2
Se ppm	LT 5	LT 26
Ag ppm	LT 2	190
Na %	0.18	0.06
Ta ppm	2.0	LT 0.5
Te ppm	LT 10	LT 59
Tb ppm	0.7	LT 0.5
Th ppm	27.0	LT 1.5
Sn ppm	LT 100	LT 480
W ppm	4	LT 1
U ppm	12.0	LT 1.2
Yb ppm	3	LT 4
Zn ppm	LT 100	LT 100
Zr ppm	460	LT 480
Cu ppm	7	1
Pb ppm	153	67
Zn ppm	53	21
Mo ppm	1	1
Co ppm	3	LT 1
Ni ppm	1	3
Cr ppm	51	187
Mn ppm	13	19
Cd ppm	LT 1	LT 1
Bi ppm	3	LT 2
Sb ppm	LT 5	19
B ppm	19	14

Sample Description:

83-22 - Argillized rhyolite breccia, clasts several mm to a few cm, pervasively argillized; very earthy rock; highly limonitized and oxidized.

83-23 - Grey-milky white chalcedony vein, clasts of argillized breccia and some argillized wall rock.
83-24 - Relatively fresh, porphyritic grey quartz eye rhyolite, highly fractured, limonitized along fractures. Some leached out, now limonite-filled cavities several mm across.
83-25 - Banded vein chalcedony breccia.
83-26 - Rhyolite ash flow tuff with carbonized wood fragments.
M-30 - Banded chalcedony vein from trench vein showing approx. 8 cm thick; moderately argillized; superficially looks like banded rhyolite.
87-22 - Silicified vuggy breccia zone (Discovery outcrop); pale grey with pale yellow alteration near some vugs.
87-23 - Banded chalcedony vein breccia, 8 cm wide.; from Discovery outcrop.
Classification: Eocene magmato-hydrothermal, shallow to surface, volcanic-hosted disseminated, vein, stockwork and hydrothermal breccia gold-silver deposit.
Comments: The combination of high grade breccias within lower grade silicified wall rocks is comparable to other hydrothermal breccia - related deposits such as the Cannon Mine at Wenatchee, Washington where breccias are hosted in silicified Eocene sandstone. In both places, breccias can be flanked by symmetrical chalcedony veins which suggest breccia emplacement into veins by forceful wedging upwards.
References:

INAC Reports: 1985-86 YEX, p. 251-252
Other: Tempelman-Kluit (1972); Pride (1988); Northern Miner, Vol. 73, No. 44; Duke and Godwin (1986, p. 72-82); Jackson et al. (1986, p. 139-147)
Assessment Reports: 091611; 091673; 091672; 091587; 091637; 091727; 091843; 091885; 091861; 091886; 092002; 092099
Recent References: 1987 YEX, p. 182-183; 1988 YEX, p. 110-111 (drilling, assays)

89. PELLY RIDGE (LYN) (105 K 3)

Classification: Silver-lead-zinc vein.
References:

Assessment Reports: 092540
Recent References: 1988 YEX, p. 111 (drilling, assays)

90. DY (105 K 3, 6)

Geology: A pyritic and baritic massive sulphide deposit is located at the transition between noncalcareous phyllite and calcareous phyllite of the Anvil District. Silver is associated with galena which is preferentially enriched in the massive sulphide facies and particularly in the baritic facies. Gold follows the same trend.
Reserves: Geological reserves are shown in the table on the previous page. Recent reserve estimates are 21 million tonnes grading 5.5% Pb, 6.7% Zn, 84 g/t Ag and 1.0 g/t Au.
Classification: Hadrynian to Lower Cambrian tectono-hydrothermal, synsedimentary exhalative lead-zinc-silver massive sulphide.
References:

INAC Reports: 1982 YEG, p. 105, 143
Other: Jennings and Jilson (1986); Tempelman-Kluit (1972)

93. CODY (105 K 6)

Geology: The mid-Cretaceous Anvil Batholith is intruded by Eocene (?) rhyolite and andesite dykes and cut by quartz vein breccias containing sphalerite, galena, pyrargyrite, diaphoreite and rhodochrosite. Up to 12 veins are reported with widths ranging from 1 to 4 m.
Geochemistry: Channel samples across the veins ranged from 5 to 40 oz/t Ag and 0.009 to 0.22 oz/t Au with no positive correlation between gold and silver. Best grab samples have assayed in excess of 1000 oz/t Ag.
Classification: Cretaceous to Tertiary magmato-hydrothermal mesozonal, intrusive-proximal silver-gold-lead-zinc veins.
References:

Other: B. Lueck, Personal communication 1988
Recent References: 1988 YEX, p. 111-112 (assays)

105 L

2. LITTLE SALMON LAKE (105 L 1)

Geology: Contact skarn developed above a quartz-feldspar porphyry contains dominant magnetite with pyrrhotite, pyrite and galena, sphalerite, chalcopyrite and fluorite. Other mineral assemblages include calcite-garnet-chlorite-scheelite; magnetite-sulphides-dolomite-diopside; feldspar (mainly orthoclase) -diopside. Anthraxolite is also reported. Above the skarn, the Cliff showing is a vein of siderite, sphalerite, galena and pyrite.
Classification: Cretaceous to Tertiary magmato-hydrothermal, mesozonal, intrusive-proximal zinc-lead-silver skarn.
Comments: Similarity to No. 24 DRURY.
References:
Green (1965, p. 38-40)

14. FRONT (105 L 10)

Classification: Copper-silver vein.
References:
N.C.M.I.

17. CLEAR LAKE (105 L 14)

Geology: Rocks of Devono-Mississippian age include black shale and siltstone, chert pebble conglomerate, lapilli tuff, chert and limestone. They host a proximal, exhalative, pyritic massive sulphide deposit situated between a basal chert and tuff and a black pyritic shale cap.
Geochemistry: Two intervals within a diamond drill hole intersection (DDH 79-14) of the massive sulphide gave the following assay.

Interval (m)	Pb (%)	Zn (%)	Ag (g/t)
121.6 - 132.6	1.55	5.63	24.7
151.8 - 221.0	0.89	5.62	20.9

Two grab samples of DDH 79-19 were analysed (Morin, 1981):

Sample	Au (ppb)	Ag (g/t)	Cu (ppm)	Pb (%)
6	50	86.9	TRACE	3.45
7	14	9.6	NIL	0.06

	Zn (%)	As (ppm)	Mn (ppm)	Hg (ppb)
6	23	200	100	35 000
7	0.11	110	130	19 000

Sample Description:

6 - Massive sphalerite, pyrite and galena at 214.0 m;
7 - Breccia with pyrite clasts in graphitic argillite matrix at 230.1 m.

Classification: Devono-Mississippian synsedimentary, exhalative lead-zinc-silver massive sulphide.
References:

INAC Reports: 1975 MIR, p. 129; 1976 MIR, p. 164; 1977 MIR, p. 69; 1978 MIR, p. 34; 1979-80 YGE, p. 200-201; 1981 YEG, p. 160; 1982 YEG, p. 148; 1983 YEG, p. 196; 1984 YEX, p. 114

Assessment Reports: 091554; 091511; 091411; 091036; 090659; 090851; 090852; 090853; 090859; 090932; 090478

Other: Grapes (1987); McColl (1981); Morin (1981e, p. 85-90); Findlay (1967, p. 34)

Recent References: Grapes and Dickinson (1987)

24. DRURY (105 L 1)

Geology: Devono-Mississippian calcareous chert is domed into an anticline, the core of which contains a Cretaceous - Tertiary quartz-feldspar porphyry. Garnet-diopside-calcite-quartz-magnetite skarn is developed in the chert for up to 60 m from the intrusive contact.
Classification: Cretaceous to Tertiary magmato-hydrothermal, mesozonal, intrusive-proximal zinc-lead-silver skarn.
Comments: At southern tail end of Glenlyon Batholith.
References:

INAC Reports: 1982 YEG, p. 148.

Assessment Reports: 091372

29. ONE HUMP (105 L 15)

Geology: Seven skarn showings occur along a 2 km strike length; they are up to 1 m thick and several tens of m in strike length. The lenses contain some pyrrhotite with lesser pyrite, sphalerite, galena and chalcopyrite. Also a narrow quartz-arsenopyrite-galena vein in hornfels of Kechika Group rocks on Lone Mountain.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal zinc-lead-copper skarn and silver-lead-zinc vein.
References:

INAC Reports: 1983 YEG, p. 196-197

Assessment Report: 091468

105 M

UNITED KENO HILL MINES - This includes many deposits in the Keno Hill and Galena Hill area which are described later in this section. The following table was compiled by Ken Watson, Chief Geologist at Elsa for United Keno Hill Mines Limited. The data represents total minehead production up to December 31, 1986 and are sorted on ounces of silver produced.

MINE	TONS	oz/t Ag	% Pb	% Zn
HECTOR-CALUMET	2,706,742.00	35.47	7.42	6.17
ELSA	481,475.00	62.02	4.91	1.40
HUSKY	426,697.00	41.83	3.83	0.00
SADIE-LADUE	244,330.36	52.08	6.53	0.00
KENO	282,918.00	44.34	10.64	3.74
LUCKY QUEEN	123,529.70	88.72	6.95	2.69
SILVER KING	196,279.00	53.71	7.98	0.89
NO CASH	157,625.00	30.30	3.60	1.89
GALKENO	167,063.00	27.20	5.22	2.69
BERMINGHAM	181,896.60	20.53	4.23	0.58
BELLEKENO	18,516.50	55.50	12.06	1.85
RUBY	38,921.00	25.27	3.02	1.25
COMSTOCK	22,862.60	39.68	10.70	3.76
SHAMROCK	5,035.80	175.79	35.37	0.36
ONEK	33,036.30	18.31	8.06	8.86
DIXIE	23,872.00	20.19	3.80	5.14
BLACK CAP	9,530.75	43.71	3.17	0.33
TOWNSITE	18,570.00	16.45	4.26	1.97
MILLER (UN-DRAGON)	9,390.00	15.05	2.23	0.74
MT. KENO	1,292.00	50.00	3.68	0.00
YUKENO (FORMO)	340.00	48.88	11.08	0.00
GAMBLER	246.00	190.09	56.15	0.00
STONE	149.45	126.01	30.28	0.00
CARIBOU HILL	86.96	177.12	71.60	0.30
DUNCAN	14.54	744.29	22.35	0.00
VANGUARD	35.11	297.72	51.75	0.51
FLAME & MOTH	406.00	20.41	1.39	0.72
LOOKOUT (MT. HALDANE)	29.50	93.86	53.60	0.00
CROESUS	10.30	238.93	0.00	0.00
SILVER BASIN	12.45	167.73	41.07	0.00
CORAL-WIGWAM	7.50	258.00	61.00	0.00
SILVER SPRING (PADDY-CAROL)	247.00	6.79	2.10	0.70
KLONDIKE-KENO	5.72	124.78	49.63	0.00
TOTAL	5,151,173	40.68	6.72	3.97

MINE	oz Ag	lbs Pb	lbs Zn	Ag/Pb	Pb/Zn
HECTOR-CALUMET	96,019,433	401,842,201	333,991,891	4.8	1.20
ELSA	29,861,754	47,272,242	13,448,226	12.6	3.52
HUSKY	17,849,431	32,710,264		10.9	0.00
SADIE-LADUE	12,725,633	31,923,607		8.0	0.00
KENO	12,543,566	60,212,265	21,168,174	4.2	2.84
LUCKY QUEEN	10,959,368	17,163,250	6,653,462	12.8	2.58
SILVER KING	10,541,706	31,324,305	3,488,927	6.7	8.98
NO CASH	4,776,122	11,345,171	5,965,157	8.4	1.90
GALKENO	4,544,142	17,437,410	8,999,204	5.2	1.94
BERMINGHAM	3,734,511	15,388,361	2,113,088	4.9	7.28
BELLEKENO	1,027,631	4,464,335	683,453	4.6	6.53
RUBY	983,425	2,349,551	969,789	8.4	2.42
COMSTOCK	907,176	4,891,434	1,719,131	3.7	2.85
SHAMROCK	885,219	3,562,279	36,523	5.0	7.54
ONEK	604,879	5,325,854	5,854,659	2.3	0.91
DIXIE	481,942	1,813,155	2,455,694	5.3	0.74
BLACK CAP	416,605	605,044	62,474	13.8	9.68
TOWNSITE	305,423	1,583,393	730,014	3.9	2.17
MILLER (UN-DRAGON)	141,358	419,702	139,638	6.7	3.01
MT. KENO	64,600	95,000		13.6	0.00
YUKENO (FORMO)	50,620	75,365		13.4	0.00
GAMBLER	46,762	276,265		3.4	0.00
STONE	18,832	90,495		4.2	0.00
CARIBOU HILL	15,402	124,524	522	2.5	238.55
DUNCAN	10,822	6,500		33.3	0.00
VANGUARD	10,453	36,336	360	5.8	100.93
FLAME & MOTH	8,286	11,325	5,880	14.6	1.93
LOOKOUT (MT. HALDANE)	2,769	31,628		1.8	0.00
CROESUS	2,461			0.0	0.00
SILVER BASIN (PADDY - CAROL)	2,089	10,227		4.1	0.00
CORAL-WIGWAM	1,935	9,150		4.2	0.00
SILVER SPRING	1,676	10,374	3,458	3.2	3.00
KLONDIKE-KENO	714	5,680		2.5	0.00
TOTAL	209,546,744	692,416,691	408,489,724	6.1	1.70

References:

INAC Reports: 1979-80 YEG, p. 3-6, 8; 1981 YEG, p. 3-4, 105-167; 1982 YEG, p. 4-5, 154-156; 1983 YEG, p. 5, 7, 205-208; 1984 YEX, p. ; 1985-86 YEX, p. 13-14, 264-267
OTHER: Watson (1986); Franzen (1986); Lynch (1986); Boyle (1965)
Recent References: 1987 YEX, p. 13, 15, 17, 24-25, 34; 1988 YEX, p. 252

1. KENO 700 (105 M 14)

Geology: See table.
Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

2. FAITH (105 M 14)

Geology: Quartzite and phyllite are cut by quartz veins from 8 to 18 cm thick and a vein fault containing a few small pods of siderite, galena, limonite, cerussite and anglesite.
Geochemistry: A grab sample assayed 0.75 g/t Au, 224.8 g/t Ag and 1.19% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-gold veins.
References:

INAC Reports: 1979-80 YGE, p. 206; 1985-86 YEX, p. 264-267
Other: Boyle (1965, p. 52)
Assessment report: 090538

3. DUNCAN (105 M 14)

Geology: Schist and quartzite country rocks are cut by a number of veins and fractures. Vein material on the dumps consists of limonite, wad, siderite, galena and freibergite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:

Boyle (1965, p. 56)

4. GOLDEN QUEEN (105 M 14)

Geology: Quartzite is cut by two or more veins containing limonite, siderite, sphalerite, galena and some freibergite.
Geochemistry: A grab sample assayed 1138 g/t Ag, 0.2% Pb and 0.3% Sb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:

Green (1966, p. 18-19); Boyle (1965, p. 52)

5. SILVER BASIN (105 M 14)

Geology: Quartzite and schist are cut by several narrow vein faults with varying mineralogy: No. 1 vein - galena, siderite and freibergite; No. 2 vein - quartz, arsenopyrite and galena; No. 3 vein - galena, siderite and freibergite; No. 4 vein - quartz, galena, siderite and freibergite; No. 5 vein - quartz, arsenopyrite, galena, freibergite, siderite, barite and rare native silver. See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:

INAC Reports: 1984 YEX, p. 123
Assessement Reports: 092159
Other: Boyle (1965, p. 51-52)
More Recent References: 1988 YEX, p. 122-124

6. NABOB NO. 2 (105 M 14)

Classification: Silver-lead-zinc vein.
References:
Boyle (1965, p. 51)

7. LADUE FRACTION (105 M 14)

Geology: Schist is cut by a vein containing siderite, quartz, limonite, cerussite, anglesite, galena, freibergite and arsenopyrite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
Geochemistry: A grab sample assayed 3943 g/t Ag and 78.9% Pb.
References:
Boyle (1965, p. 40)

8. COMSTOCK KENO (105 M 14)

Geology: The vein fault is a breccia zone 8 to 10 ft. wide with two periods of mineralization. The first is represented by small quartz-pyrite-arsenopyrite veins and lenses, and the second by pods of galena with disseminated sphalerite, siderite and oxidation products.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 42-43)

9. APEX (105 M 14)

Geology: Vein mineralogy is mainly manganese oxide and siderite.
Comments: Part of Comstock-Porcupine silver-lead vein fault.
References:
Boyle (1965, p. 42-43)

10. VANGUARD (105 M 14)

Geology: The vein fault may be the northern extension of the RUNER vein. It contains siderite, limonite and minor galena and freibergite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
Boyle (1965, p. 47)

11. HOMESTAKE (105 M 14)

Geology: Thick-bedded quartzite is cut by several veins made up of manganiferous siderite cementing fragments of quartzite and some galena, freibergite and sphalerite. Quartz may also form part of the veins.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Findlay (1969a, p. 25)

12. CHRISTINE SILVER (105 M 14)

Geochemistry: A trench sample is reported to have assayed 1303 g/t Ag over 6.4 m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
Findlay (1969a, p. 22)

13. MO (105 M 15)

Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

14. MAYBRUN (105 M 14)

Geology: Quartzite, graphitic phyllite, phyllite, quartz-sericite schist and graphitic schist are cut by a vein fault. Mineralogy includes freibergite, galena, pyrrhotite, arsenopyrite and chalcopyrite.
Production: Ore from underground production of 270 tonnes in 1920 averaged 6857 g/t Ag and 40% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
INAC Reports: 1979-80 YGE, p. 206
Assessment Reports: 090544

15. HOGAN (MOUNT KENO) (105 M 14)

Geology: The Hogan vein fault consists of highly brecciated and comminuted quartzite, graphitic schist and some greenstone. It contains coarse siderite, pyrite and a little sphalerite and galena with secondary limonite and manganese oxides.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
Comments: The HOGAN vein fault is the western fault in the Mount Keno vein system.
References:
Boyle (1965, p. 46-47)

16. RUNER (105 M 14)

Geology: A vein fault is expressed as a breccia zone from 1 to 5 ft. wide in the quartzite and a sheeted zone of similar width in the greenstone. Vein mineralogy is oxidized siderite, limonite, galena, sphalerite, freibergite, pyrite, anglesite and cerussite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:

Boyle (1965, p. 46-47)

17. WERNECKE (105 M 14)

Geology: Quartz-sericite-chlorite schist, greenstone, quartzite and graphitic quartz-mica schist are cut by quartz-carbonate-galena stringers.
Geochemistry: A grab sample of oxidized vein material assayed 116.8 oz/ton Ag and 72.4% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:

Findlay (1969b, p. 12-13)

18. FORMO (105 M 14)

Geology: Thin-bedded quartzite and graphitic schist with a few narrow lenses of greenstone and a sill of lamprophyre host a vein along which are scattered several small lenses and pods of ore. The lenses are irregular and contain much brecciated sphalerite and pyrite in addition to galena, freibergite, siderite, calcite and quartz.
Production: See table for production.
Reserves: Reserves are estimated at 40 000 tonnes of 550 g/t Ag, 6.9% Pb and 10.7% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
Comments: Also known as YUKENO.
References:

INAC Reports: 1981 YEG, p. 167; 1984 YEX, p. 123
Assessment Reports: 092159
Other: Boyle (1965, p. 67-68)
More Recent References: 1988 YEX, p. 122-4

19. PADDY-CAROL (SILVER SPRING) (105 M 14)

Reserves: Estimated reserve is 3630 tonnes grading 1115 g/t Ag and 8.4% Pb.
Classification: Silver-lead-zinc vein.
References:

Craig and Laporte (1972, p. 14)

20. EAGLE (105 M 14)

Geology: Quartzite and sericite schist are cut by two vein faults consisting of siderite, quartz, pyrite, galena, sphalerite, arsenopyrite, freibergite, limonite and manganese oxides.
Geochemistry: The best drill intersection is 1886 g/t Ag, 12.8% Pb and 4.2% Zn over 2.1 m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.

References:
INAC Reports: 1979-80 YGE, p. 206
Assessment Reports: 090486
Other: Boyle (1965, p. 77-78)

21. FISHER (105 M 14)

Geology: Quartzite, phyllite, quartz-graphite schist and limestone are cut by veins of galena, sphalerite and freibergite in a gangue of quartz, calcite, pyrite and siderite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
INAC Reports: 1979-80 YGE, p. 207; 1984 YEX, p. 124
Assessment Reports: 090545
Other: Boyle (1965, p. 78-79)

23. CREAM & JEAN (105 M 14)

Geology: Wallrocks near the vein are thin-bedded quartzites, phyllites and graphitic schist with thin lenses of greenstone and a few thick beds of quartzite. Vein mineralogy is galena, freibergite, pyrargyrite and chalcopyrite in a gangue of siderite, calcite, quartz, pyrite and limonite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 78)

24. NORD (105 M 15)

Geology: Chloritic diorite intrudes graphitic schist, thin-bedded quartzite, quartz-mica schist, phyllite, calcareous schist and quartzite of Precambrian and/or Paleozoic age. Vein-filled zones in the northwest-trending fault system in the area commonly contain quartz, siderite, galena, sphalerite and freibergite. These zones are silver-bearing with a silver to lead ratio of 3:1.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
INAC Reports: 1969-70 MIR, p. 13-14

25. GERLITZKI (105 M 13)

Geology: Quartz vein in quartzite with mineralogy of galena, sphalerite and tetrahedrite.
Geochemistry: A grab sample assayed 503 g/t Ag, 6.50% Pb and 4.95% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1981 YEG, p. 165-166; 1985-86 YEX, p. 268
Assessment Reports: 091694
Other: Green and Godwin (1963, p. 8-9)

26. UR (105 M 13)

Geology: A quartz-siderite vein-fault cuts sedimentary and metamorphosed intrusive rocks. Vein mineralogy includes galena, sphalerite, pyrite, cerussite and angiesite.
Geochemistry: The best assay is 59 ppm Ag, 0.40% Pb and 0.57% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:

INAC Reports: 1981 YEG, p. 165-166
Other: Green and Godwin (1964, p. 12-13)

27. SHANGHAI (104 M 13)

Geology: Quartz-carbonate veins occur in sheared sedimentary rocks. Vein mineralogy includes quartz, carbonate, sphalerite, pyrite and galena.
Geochemistry: The most silver-rich sample is from a panel 9 m x 1.5 m: 1182 g/t Ag, 8.2% Pb and 7.2% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:

INAC Reports: 1983 YEG, p. 209; 1984 YEX, p. 123
Other: Findlay (1967, p. 24-25)

28. WAYNE (CHISHOLM-RICH) (105 M 13)

Geology: A late Cretaceous rhyolite porphyry body (nearby similar rocks to south and west about 85 Ma) intrudes interbedded fine clastic and carbonate rocks. Thin carbonate interbeds are altered to marble and garnet-diopside skarn, and the rhyolite is locally pervasively altered to quartz-sericite-pyrite. Chalcopyrite and pyrrhotite, and retrograde actinolite, chlorite and epidote are superimposed on the skarn in places. The sedimentary rocks are cut by a vein breccia with quartz, siderite, galena and sphalerite.
Geochemistry: Analyses of samples collected by Morin and Emond are presented below.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
62	32	LT 0.5	32	173	265
63	434	0.9	34	386	331
64	12 700	0.6	520	206	227
65	239	3.9	67	191	212
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
62	1	160	941	8.6	LT 5
63	2	580	1566	28.0	LT 5
64	LT 1	160	1084	LT 1.7	36
65	3	580	434	3000.	12
	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
62	3.1	LT 10	460	25	LT 1
63	4.3	LT 10	550	30	LT 1
64	4.2	LT 39	LT 110	80	2
65	12.3	LT 33	490	15	3

	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
62	LT 10	LT 10	5	2	2
63	33	LT 10	23	3	LT 1
64	15	LT 10	389	2450	8
65	43	LT 10	LT 2	20	LT 2
	Na %	Br ppm	Fe %	Th ppm	U ppm
62	0.19	LT 2.0	1.3	5.2	2.3
63	0.36	LT 2.0	3.3	10.0	2.4
64	0.70	LT 2.0	21.2	1.4	1.5
65	0.39	21.0	2.8	10.0	5.1

Sample Description:
62 - DDH 83-1; grey marble;
63 - DDH 83-1; marble with diopside-calcite bands and 5% actinolite;
64 - DDH 83-1; actinolite-pyrrhotite skarn;
65 - rhyolite with pervasive quartz-sericite-pyrite alteration;
A high grade shipment of 5.88 tonnes from the vein breccia graded 4577 g/t Ag, 55.9% Pb, 4.4% Zn and 1.9 g/t Au.
A drill intersection (1981) of skarn assayed 0.48% W and 33.3 g/t Au across 1.0 m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-tungsten skarn and intrusive-distal (?) silver-lead-zinc vein.
References:
INAC Reports: 1981 YEG, p. 11, 167; 1983 YEG, p. 202, 206
Assessment Reports: 090933; 091497
Other: Findlay (1969a, p. 26)

29. ARGENT (105 M 13)

Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

30. STREBCHUK (JOUMBIRA) (105 M 13)

Geology: Quartzite of Mississippian age has been intruded by lenses and sills of mafic 'greenstone', thin granite and biotite-quartz porphyry dykes and numerous irregular quartz veins. Commonly, greisen occurs at the contacts of the quartz veins and intrusions with the quartzite country rock. Cassiterite occurs in accessory amounts on the margin of a quartz porphyry dyke (89.0 +/- 2.6 Ma, K-Ar biotite, W.D. Sinclair, Personal communication) and in sheeted fractures with chlorite and tourmaline. Scheelite occurs associated with quartz porphyry dykes and late, vuggy, quartz veins. Arsenopyrite, sphalerite and galena have been identified in quartz veins and greisen veins associated with the main intrusive stock.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc veins, antimony greisen and tungsten veins.

References:
INAC Reports: 1978 MIR, p. 6; 1981 YEG, p. 156-157; 1982 YEG, p. 156-157
Assessment Reports: 091053
Other: Emond (1986)
More Recent References: Potter (1987); 1988 YEX, p. 124, 126-127

31. MT. HALDANE (LOOKOUT) (105 M 13)

Geology: Quartz veins occur in sheared fine-grained clastic sedimentary rocks and metamorphosed intrusive rocks. Vein mineralogy includes quartz, galena, limonite, pyrite, sphalerite, siderite and chalcopyrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1979-80 YGE, p. 207
Assessment Reports: 090623

32. LAYSIER (105 M 13)

Classification: Silver-lead-zinc vein.
References:
1985-86 YEX, p. 268-269

33. COBALT (105 M 15)

Geology: A fracture zone cuts thinly bedded, medium to dark grey phyllitic quartzites separated by lesser amounts of grey, crumpled phyllite and three greenstone bodies. The fracture system appears to be a group of branching and joining, subparallel breaks filled with a gouge of crumpled phyllite and massive galena, with lesser amounts of siderite. Much of the vein material has been heavily oxidized, the galena being partly altered to anglesite and the siderite to limonite and hydrous manganese oxides.
Geochemistry: Green (1971, p. 61) reported that ..."Two picked samples composed mainly of galena, the first from the adit and the second from the upper dump, assayed as follows:"

Au (oz/ton)	Trace	Trace
Ag (oz/ton)	31.34	44.93
Pb %	73.1	71.8
Zn %	n.d.	0.10
Cu %	0.02	0.05
Sb %	0.42	0.39
Cd %	0.01	0.02

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
INAC Reports: 1985-86 YEX, p. 271-272
Other: Green (1971, p. 61)

38. HOT SPRING (105 M 14)

Classification: Silver-lead vein.
References:
N.C.M.I.

41. MOON (105 M 14)

Classification: Silver-lead vein.
References:
N.C.M.I.

42. MT. ALBERT (105 M 15)

Classification: Silver-lead vein.
References:
N.C.M.I.

43. MCKIM (105 M 15)

Classification: Silver-lead vein.
References:
N.C.M.I.

44. NERO (105 M 14)

Classification: Silver-lead vein.
References:
N.C.M.I.

45. FREISEN (105 M 4)

Classification: Copper-tungsten-molybdenum-silver-gold skarn.
References:
N.C.M.I.

46, 54, 132, 136 MOUNT HINTON (105 M 14)

Geology: Intercalated quartzites, graphite and sericite schists and greenstone are cut by northeast-trending veins. Mineralogy includes quartz, calcite, scorodite, arsenopyrite, galena, jamesonite, limonite, anglesite, pyrite, sphalerite, siderite and gold. The veins vary in length from less than 30 m to more than 600 m. The ore shoots are structurally controlled, sulphide-rich and occur mainly at greenstone-quartzite contacts and under bedding faults marked by graphite schist.
Geochemistry: Ore shoot assays are up to 691 g/t Au and 8962 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-lead-zinc veins.

References:
INAC Reports: 1985-86 YEX, p. 270-271
Assessment Reports: 091633
More Recent References: 1987 YEX, p. 192

49. YONO (105 M 14)

Classification: Silver-lead vein.
References:
N.C.M.I.

51. GUSTAVUS (105 M 15)

Classification: Silver-lead vein.
References:
N.C.M.I.

53. DOROTHY (CHRISTAL) (105 M 14)

Geology: Country rocks of quartzite, sericite schist and graphitic schist are cut by a vein fault. Vein mineralogy includes massive and coarsely crystalline siderite with a little galena and freibergite and some quartz with pyrite and arsenopyrite.
Geochemistry: A trench sample assayed 68.57 g/t Ag, 0.63% Pb and 0.2% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
INAC Reports: 1979-80 YGE, p. 208
Other: Boyle (1965, p. 40, 56)

55. IRONCLAD (105 M 14)

Classification: Silver-lead-zinc vein.
References:
N.C.M.I.

57. ZAP (105 M 13)

Classification: Silver-lead-zinc vein.
References:
INAC Reports: 1981 YEX, p. 168

65., 127. CRO-MUR, GAMBLER (105 M 14)

Geology: Thick-bedded quartzites with interbeds of graphitic schist and phyllite are cut by a breccia-type vein fault with local sheeted zones in the quartzites. Mineralogy is quartz, pyrite, arsenopyrite, siderite, calcite, galena, sphalerite and freibergite.
Geochemistry: See table for geochemistry.

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-laed-zinc veins.
References:
INAC Reports: 1979-80 YGE, p. 209
Assessment Reports: 090690
Other: Boyle (1965, p. 37-39, 50, 52)

66-69. BE NO. 1, 2, 3, 4 (105 M 14)

Geology: Quartzite and schists are host to three mineralized vein structures. Two of the occurrences are quartz stockwork vein systems with minor galena disseminations. The third occurrence is a quartz vein with minor disseminated arsenopyrite enveloped by a 5 m long quartz stockwork.
Geochemistry: Grab samples of the former two veins ranged from 6.3 to 490.3 g/t Ag and of the latter vein 194.1 g/t Ag and 31.5 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-gold veins.
References:
INAC Reports: 1981 YEG, p. 168; 1982 YEG, p. 157
Assessment Reports: 090995; 091386

70. DIAMOND (105 M 14)

Classification: Silver-lead-zinc vein.
References:
INAC Reports: 1979-80 YGE, p. 210

79. LEOV (105 M 13)

Classification: Zinc-silver-lead vein.
References:
P. Watson (Personal communication)

85. SADIE - LADUE (105 M 14)

Geology: According to Boyle (1965, p. 32): "The productive part of the main vein fault occurred where it cut greenstones, thin-bedded quartzites, phyllites, and interbedded schists. The vein fault in this part dips 60 to 70 degrees and consists of a breccia and sheeted zone 5 to 40 feet wide with several subsidiary faults that branch from and rejoin the plane of the main vein fault. ... According to Wernecke the ore shoots, which consisted of irregular bodies of siderite, galena, sphalerite and freibergite, tended to occur where the vein fault crossed quartzites and phyllites or where greenstone formed one or both walls.....Another favourable site for pods of ore was at the intersection of the main vein fault and branches that strike northward into the foot-wall or hanging-wall." See table.
Geochemistry: See table.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
INAC Reports: 1983 YEG, p. 208-209
Other: Boyle (1965, p. 31-34)

86. SILVER KING (105 M 13)

Geology: A quartz-carbonate vein occurs in sedimentary rocks and its mineralogy includes galena, native silver, cerussite, sphalerite and pyrite. See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Natural Mineral Inventory, 105 M 13, AG 1

87. HUSKY (105 M 13)

Geology: Quartzite with interbedded graphitic and micaceous schist and some greenstone sills host two principal veins with up to four parallel to sub-parallel vein or fracture/breccia structures. Vein mineralogy is siderite, quartz, calcite, barite and argentiferous galena, pyrargyrite, stephanite and polybasite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Watson (1986)

88. REX (105 M 13)

Geology: Quartz-siderite vein in fault in sedimentary and metamorphosed intrusive rocks. Vein mineralogy includes quartz, siderite, galena, sphalerite, pyrite, cerussite and anglesite.
Geochemistry: A 75 m trench sample contained 0.34 g/t Au, 1508 g/t Ag, 7.79% Pb and 4.35% Sb over 1.6 m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
N.C.M.I.

89. RUBY FRACTION (105 M 14)

Geology: The vein strikes 050 degrees and dips 65 degrees southeast with width varying from 1 to 3 ft. Vein minerals include siderite, galena, freibergite and pyrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 61-62)

90. KLONDYKE - KENO (BLUE ROCK) (105 M 14)

Geology: Greenstone, graphitic schist and phyllite are cut by a vein a few inches to 3 ft. wide. Hypogene minerals occur mainly in massive or brecciated quartz veins and lenses and some fill clear prismatic quartz vugs. They consist of quartz, arsenopyrite, pyrite, galena, sphalerite, siderite, meneghinite, bournonite, chalcopyrite and tetrahedrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Boyle (1965, p. 50)

91. TOWNSITE (105 M 14)

Geology: Silver-lead-zinc vein.
References:
N.C.M.I.

92. HIGHLANDER, CUB & BUNNY (105 M 14)

Geology: Three vein faults are hosted respectively in quartzite, greenstone, and sericite- and graphitic schists. Vein mineralogy is siderite, pyrite, galena, freibergite and sphalerite.
Production: Small scale high grade mining of 46 tonnes averaged 8914 g/t Ag and 65% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 35-36)

93. BLACK CAP, SHEPPARD (105 M 14)

Geology: Quartzite hosts a vein fault containing limonite, siderite, quartz, galena and a little freibergite.

Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 35)

94. BELLEKENO (105 M 14)

Geology: Quartzite hosts veins of siderite, galena and freibergite with minor other minerals.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 47-50)

95. HECTOR-CALUMET (105 M 14)

Geology: Thick- and thin-bedded quartzite and graphitic schist are cut by several vein faults. Hypogene vein mineralogy is quartz, pyrite, siderite, sphalerite, galena and freibergite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 60-67)

96. MOTH (105 M 14)

Geology: Silver-zinc-lead vein with a mineralogy that includes quartz, arsenopyrite, pyrite, sphalerite and galena.
Geochemistry: See table for geochemistry.
References:
Natural Mineral Inventory, 105 M 1, AG 20

97. NO CASH (105 M 14)

Geology: Massive thick-bedded quartzite interbedded with several beds of graphitic schist, phyllite and thin-bedded quartzite are cut by a complex, fractured and brecciated zone 5 to 15 ft. thick. Mineralogy is galena, sphalerite, freibergite, anglesite, cerussite and Ag-bearing iron oxides and sulphates in a gangue of limonite, Mn-oxide, altered siderite, some crushed and crystalline quartz, pyrite and arsenopyrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 75-76)

97. BETTY VEIN (105 M 14)

Geology: Greenstone hosts a narrow vein of quartz, calcite, galena, sphalerite, arsenopyrite, pyrrhotite, cerussite and limonite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
Comments: The vein probably represents the northeast extension of the No Cash vein (#97).
References:
Boyle (1965, p. 76)

98. CARIBOU (105 M 14)

Geology: Vein mineralization consists of galena and freibergite in a gangue of carbonates, oxides and quartz.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Other: Boyle (1965, p. 56-57)
Recent References: 1988 YEX, p. 122-124

99. BERMINGHAM MINE (105 M 14)

Geology: Quartzite and graphitic schist host a vein of galena, freibergite, siderite and minor other minerals.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 62)

100. SHAMROCK (105 M 14)

Geology: Boyle (1965, p. 38-39) reported as follows: "The Shamrock system of vein faults consists of a main vein fault into the foot-wall....The strike of the main vein is N 40 degrees E and the dip is 60 degrees SE. The strikes of the subsidiary veins are a little east of north; the dips are unknown. All veins lie in massive quartzite with interbeds of graphitic schist and phyllite...
The main vein fault is of the breccia type, 4 to 10 feet wide, and is severely disrupted by cross-fractures and longitudinal slips. The ore shoots favour the hanging wall of the fault and tend to be sporadic and small, seldom more than 3 feet wide. They are highly oxidized and contain mainly galena, cerussite, limonite, malachite and manganese oxides."
See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 37-39, 50, 52)

101. DIXIE (105 M 14)

Geology: Grey and cherty white quartzite beds are cut by a northeast-striking, steeply southeast-dipping vein. Vein mineralogy is siderite, galena, freibergite, sphalerite, pyrite and limonite, manganese oxides, cerussite and anglesite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 74-75)

102. HUSKY S.W. (105 M 13)

Geology: Quartzite with interbedded graphitic and micaceous schist and some greenstone sills host a vein zone made up of "a highly fractured breccia structure with a quartz-rich gangue. Mineralization occurs as native silver with some acanthite and stephanite within fracture veinlets with a pyrite/graphite matrix."
Geochemistry: Watson (1986) reported "The first stope level on ore above the 250 level has now been mined and returned an average grade of 1584 g/t Ag (46.2 oz/ton) over a 5.2 m (17.1 ft) width and a 38.7 m (127 ft.) strike length." He further reported "The amount of lead and zinc within the Husky S.W. deposit is very low (0.2% Pb and 0.03% Zn). The galena in Husky S.W. has a silver to lead ratio of 1:1. Gold occurs in this deposit and appears to be tied closely to silver. The silver:gold ratio varies from 1200:1 in the upper portions of the deposit to 300:1 in the lower portions. These ratios are preliminary; further work is required to develop a statistically valid data base."
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
P. Watson (1987, personal communication)

103. ELSA (105 M 14)

Geology: Massive thick-bedded grey quartzite, siliceous white quartzite and greenstone lenses are cut by two main vein faults made up of fractured and brecciated zones 10 to 40 ft. wide. Vein mineralogy includes siderite, galena, pyrite, freibergite, cerussite, anglesite, native silver, pyrargyrite, acanthite, beulandite, bindheimite, silver-bearing jarosites, quartz, limonite and manganese oxides.

Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 72-74)

104. CORAL-WIGWAM (105 M 14)

Geology: Quartzite, mica- and graphite schist host a vein of galena and freibergite in a gangue of siderite, quartz and pyrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Boyle (1965, p. 63)

105. ONEK (105 M 14)

Geology: The main vein fault is a breccia zone 10 to 20 ft. wide. Mineralogy includes siderite, sphalerite and a little quartz, galena, freibergite, chalcopyrite, anglesite, cerussite, oxidized siderite and various other secondary minerals.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 43-46)

106. LUCKY QUEEN (105 M 14)

Geology: A breccia vein fault cuts quartzite with interbedded graphitic schist and a greenstone lens. Ore shoots consist of veins, stringers and bunches of ore and gangue minerals. Vein mineralogy includes siderite, galena, sphalerite, freibergite, pyrargyrite and native silver with highly oxidized assemblages of limonite, jarosite, beudandite, cerussite, anglesite, manganese oxides and nodules of oxidized siderite, galena and freibergite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Boyle (1965, p. 34-37)

107. GALKENO (105 M 14)

Geology: Thick-bedded quartzite and schist are cut by vein faults with a hypogene mineralogy of galena, sphalerite, freibergite, quartz, siderite, pyrite and small amounts of arsenopyrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 58-59)

108. DRAGON (105 M 14)

Geology: A quartzite hanging wall and schist footwall host a 016 degree-trending vein fault that dips 65 degrees southeast. Vein mineralogy includes siderite, quartz, galena, freibergite, boulangerite, sphalerite, limonite, manganese oxides, jarosite, bindheimite, cerussite and anglesite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 60-61)

109. CROESUS (105 M 14)

Geology: The south-striking vein fault has greenstone on the east wall and graphitic schist on the west wall. Vein mineralogy is siderite with minor galena and freibergite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 56, 78)

110. LAKE (105 M 14)

Geology: Schist is cut by two parallel vein faults containing a little siderite, quartz, galena, sphalerite, freibergite, chalcopyrite and pyrite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
Boyle (1965, p. 32)

111. DEVON (105 M 14)

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins
References:
National Mineral Inventory 105 M 14, AG 28

112. KIJO (105 M 14)

Geology: Schist is cut by a narrow breccia fault that contains siderite and galena.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead vein.
References:
Boyle (1965, p. 35)

113. BLUEBIRD (105 M 14)

Geology: Greenstone hosts a vein of galena, sphalerite and pyrite in a gangue of ankerite, calcite, quartz, limonite and manganese oxide
Geochemistry: The galena is reported to assay 292 oz/t Ag and 77% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 68)

114. TIN CAN (105 M 14)

Geology: Boyle (1965, p. 77) reported as follows: "The Tin Can veins cut greenstone, thin-bedded quartzites, phyllites and graphitic schists. The principal vein fault has been investigated along strike by several pits and shafts. It is regular in the greenstones, but irregular where it passes into thin-bedded quartzites and graphitic schist, and apparently splits into several branches along strike. The well-defined part of the vein in the greenstones strikes about N 60 degrees E, dips steeply southeast, is 2 to 5 feet wide, and has been mineralized principally with ankerite, calcite, quartz, sphalerite and pyrite. Small amounts of siderite, limonite, manganese oxides, cerussite, anglesite and galena lie on the dumps."
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 76-77)

115. DUNCAN CREEK (105 M 14)

Geology: Wallrocks of phyllite, graphitic schist, limestone and thin-bedded quartzite host a vein of siderite, pyrite, pyrrhotite, galena and sphalerite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 79)

116. STONE (105 M 14)

Geology: A 10 ft. thick vein fault has a greenstone and schist hanging wall and a schist footwall. Vein mineralogy includes siderite, quartz, galena, freibergite, sphalerite and chalcopyrite.
Geochemistry: See table for geochemistry.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 36)

117. NO. 1 VEIN FAULT (105 M 14)

Geology: Thick-bedded quartzite is cut by a vein fault 5 to 10 ft. thick. Vein material on the dumps included quartz, oxidized siderite, sphalerite, galena, freibergite, pyrite and arsenopyrite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 37)

118. HELEN FRACTION (105 M 14)

Geology: Thick-bedded quartzite, schist and greenstone are cut by a vein fault 2 to 5 ft. thick. The vein consists of lenses of fractured quartz and some siderite, galena, freibergite, arsenopyrite and meneghinite. The main secondary minerals are anglesite, cerussite, limonite, manganese oxides and beudandite.

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead veins.
References:
Boyle (1965, p. 50)

119. GOLD HILL NO. 2 (105 M 14)

Classification: Silver-lead-zinc vein.
References:
Boyle (1965, p. 40-42)

120. FOX (105 M 14)

Classification: Silver-lead-zinc vein.
References:
National Mineral Inventory 105 M, AG 55

121. "C" STRUCTURE (105 M 14)

Classification: Silver-lead vein.
References:
P. Watson (personal communication)

122. DIVIDE (105 M 14)

Geology: Phyllite and sericite schist are cut by irregular vein faults that contain pods and short irregular veins of quartz (including massive and prismatic varieties) with siderite, galena, arsenopyrite (?) and sphalerite.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 50, 52)

123. OK (105 M 14)

Geochemistry: A grab sample assayed 6137 g/t Ag and 78.4% Pb.
Classification: Silver-lead vein.
References:
National Mineral Inventory 105 M, AG 62

124. PORCUPINE (105 M 14)

Geology: Sericite schist, limy schist and greenstone are cut by a vein of paragenetically early quartz, pyrite, arsenopyrite followed by later siderite, galena, sphalerite and freibergite.
Geochemistry: The vein "ore" is reported to average about 60 to 70 oz/ton Ag to 10 to 12% Pb.
Reserves: Reserves were estimated in 1982 at 13 531 tonnes of 956.6 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.

References:
Boyle (1965, p. 42-52)

125. NABOB, BUCANEER & RUM TUM (105 M 14)

Geology: The vein fault is a breccia and sheeted zone and contains quartz, some oxidized siderite, limonite, anglesite, cerussite and a little galena.
Geochemistry: A high grade sample assayed 53 621 g/t Ag and 30 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins.
References:
Boyle (1965, p. 40)

126. MCLEOD (105 M 14)

Classification: Silver-lead vein.
References:
Boyle (1965, p. 58)

134. KAC (105 M 14)

Geology: Mississippian quartzite and graphite and sericite schist, striking southeast and dipping about 20 degrees southwest are intruded by sills of quartz-feldspar porphyry, diorite and gabbro. The main quartz vein occurs in foliated quartzite and contains local concentrations of massive to disseminated pyrite and galena associated with silver and gold.
Geochemistry: Seven chip samples across the main vein at 2 to 3 metre intervals gave the following assay results:

Sample	Au (g/t)	Ag (g/t)	Width (cm)
Tr-S-1	2.3	140.2	91
Tr-S-2	0.3	23.0	97
Tr-S-3	5.5	36.3	31
Tr-S-4	0.9	3374.3	127
Tr-S-5	1.3	759.4	86
Tr-S-6	2.8	254.4	147
Tr-S-7	0.2	372.3	183

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-lead veins.
References:
INAC Reports: 1985-86 YEX, p. 271-272

105 N

2. PLATA, INCA (105 N 9, 105 O 12)

Geology: A sequence of Lower Cambrian and Proterozoic(?) fine-grained clastics and carbonates is overlain by Devonian shale, sandstone and chert and intruded by a Cretaceous quartz-feldspar porphyry dyke. The sedimentary rocks are folded and cut by thrust and normal faults. Two clusters of veins about 5 km apart occur along both types of faults, but mainly the normal faults. Vein mineralogy is galena, sphalerite and tetrahedrite in a gangue of siderite and quartz with minor barite and calcite. The two veins along the thrust fault contain arsenopyrite and pyrite with minor galena, tetrahedrite, sphalerite and boulangerite in a quartz gangue. These latter contain gold and are more consistent laterally than the galena- and sphalerite-rich veins (Abbott, 1986b).
Geochemistry: Abbott (1986b) infers from mineral zoning that fluid movement may have been from SE to NW.
Production: In 1976 and 1983 to 1986, a total of about 3000 tonnes of ore were mined with grades ranging from 60-70% Pb and 2995-9599 g/t Ag from six veins.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal gold-silver-lead-zinc-copper veins.
Comments: Zoning pattern is consistent with a buried pluton.
References:
INAC Reports: 1976 MIR. p. 111-114; 1983 YEG, p. 211
Other: Abbott (1986b)
Assessment Reports: 061092; 061152

11. PLEASANT (105 N 5)

Classification: Copper-tungsten-silver skarn.
References:
N.C.M.I.

105 O

1. TOM (105 O 1)

Geology: Fine- to coarse-grained clastics of Middle to Upper Devonian age host two stratiform zones: Tom West and Tom East. The Tom West Zone is a steeply dipping lens of bedded and interlaminated barite-sphalerite-galena-witherite-chert underlain at the southern end by cross-cutting vein and breccia mineralization of pyrite-chalcopyrite-galena-sphalerite-quartz and carbonate. The Tom East Zone consists of several lenses of complexly folded and faulted, bedded and laminated barite-sphalerite-galena-chert.
Reserves: Geological reserves are estimated at 9 283 700 tonnes, shale-hosted lead-zinc-silver deposit grading 6.19% Pb, 7.49% Zn and 69.4g/t Ag.
Classification: Middle to Upper Devonian tectono-hydrothermal, synsedimentary submarine exhalative lead-zinc-silver massive sulphide and barite.
References:

Other: McClay and Bidwell (1986, p. 100-114)
Recent References: 1988 YEX, p. 132

4. ALP (105 O 2)

Geology: Fine grained clastics are intruded by a granitic stock and associated dykes. A quartz-feldspar porphyry dyke is altered to kaolinite and sericite with vugs and stringers of arsenopyrite. The dyke trends southeasterly, dips from near vertical to steeply to the southwest and ranges from 8 ft. to 15 ft. in width over a distance of 1300 ft. The arsenopyrite-filled fractures range from under 1 in. to more than 6 in., are spaced from 5 ft. to 50 ft. apart and occur throughout the length of the vein.
Geochemistry: A 12.5 ft. channel sample collected up-strike assayed 0.040 oz/ton Au and 1.16 oz/ton Ag and a 6 ft. channel sample taken on a small parallel dyke assayed 0.120 oz/ton Au and 0.14 oz/ton Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted gold-silver stockwork.
Comments: Style of mineralization is similar to BRICK-NEVE .
References:

INAC Reports: 1982 YEX, p. 163
Assessment Reports: Assessment report by P.G. Marshall (1970) for Canadian Industrial Gas & Oil Ltd. "Geological Report on the Alp Claims, Hess Mountain Area, Yukon"

7. EMERALD (105 O 11)

Geology: Paleozoic (?) buff and red weathering sandstone interbedded with dark grey shale are intruded by a small Cretaceous stock. The stock consists of four phases: equigranular, medium-grained, hornblende-biotite granodiorite; medium- to coarse-grained hornblende syenite with flow foliation; porphyritic granodiorite and aplite dykes and its margins. The stock is cut by potash feldspar-tourmaline-biotite-quartz veins with molybdenite and chalcopyrite, and by minor massive chalcopyrite veins. Chalcopyrite also occurs locally as disseminations and veinlets in the intrusion. Gold values are associated with bismuthinite and arsenopyrite which fill joints and fractures in the intrusion and adjacent hornfelsed sedimentary rocks.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted gold-silver veins.
References:

INAC Reports: 1979-80 YGE, p. 215-216; 1981 YEG, p. 174; 1982 YEG, p. 163-164; 1983 YEG, p. 216
Assessment Reports: 090693; 090857; 090866; 091058; 091055; 091429; 091430
Other: Smit et al. (1985)

8. HORN (105 O 12)

Geology: Shale and chert of the Upper Proterozoic to Lower Cambrian 'Grit Unit" are overlain by Hadrynian (?) mafic volcanics. The contact between the sedimentary and volcanic rocks has previously been interpreted as an unconformity but may rather be a thrust fault. The 'lower plate' chert exhibits tight minor folds and the 'upper plate' volcanics are intensely jointed with sulphide mineralization common as disseminated pyrite, pods and lenses of pyrrhotite and pyrite, and veins of pyrrhotite, pyrite, minor chalcopyrite and euhedral quartz associated with shearing. The main mineralization is in a 350 degree trending vein with up to 40% pyrrhotite, lesser interstitial pyrite and patchy chalcopyrite in a euhedral quartz gangue. A series of shear zones striking 320 degrees cut across the vein and mineralization appears concentrated along the shear surfaces. Cross fractures and associated aplitic quartz veins up to 6 " wide are common between the shearing surfaces.
Geochemistry: No assays for gold or silver available, but a 5 ft. vertical sample across a second vein assayed 0.49% Cu.
Classification: Cretaceous (?) magmato-hydrothermal (?) mesozonal, intrusive-distal copper veins.
Comments: This showing is significant because it appears to represent local mineralization along a regional thrust fault that may also have been exploited by precious metals elsewhere.
References:

INAC Reports: 1971-72 MIR, p. 17
Other: Hart (1986)

12. HESS (105 O 7)

Geology: A sequence of Ordovician-Silurian and Devonian-Mississippian clastic sedimentary rocks with interbedded volcanic rocks is thrust faulted. Within the Ordovician-Silurian rocks are extensive beds of barite, calcite and witherite up to 100 m thick with a discontinuous strike length of approximately six km. Pyrite, sphalerite and galena are associated with two of the barite occurrences.
Geochemistry: Chip samples from laminated to bedded witherite with disseminated sphalerite, galena and tetrahedrite contained up to 122.0 ppm Ag, 42 000 ppm Pb, 11 350 ppm Zn and 273 ppm Cu.
Classification: Ordovician to Silurian tectono-hydrothermal, synsedimentary submarine exhalative lead-zinc-silver sulphides, witherite and barite.
References:

INAC Reports: 1977 MIR, p. 34; 1978 MIR, p. 10; 1981 YEG, p. 174; 1983 YEG, p. 216-217
Assessment Reports: 090922; 091490
Other: Hart (1986)

13. INCA (105 O 12)

Classification: Silver-lead-zinc vein.
Comments: See 105 N - No. 2. PLATA
References:

1973 MIR, p. 18

14. STANDARD (105 O 1)

Classification: Lead-zinc-silver vein/replacement.
References:
N.C.M.I.

15. ODD (105 O 13)

Classification: Zinc-silver stratabound concordant.
References:
N.C.M.I.

16. JASON (105 O 1)

Geology: Fine- to coarse-grained clastics of Middle to Upper Devonian age host massive to laminated deposits of pyrite, pyrrhotite, galena, sphalerite and barite that are underlain by crosscutting, discontinuous zones of brecciated, silicified and carbonatized rock cut by veinlets of quartz, ankerite and lesser galena, sphalerite, chalcopyrite and pyrrhotite.
Reserves: Diamond drilling has determined three zones with geological reserves of 14.1 million tonnes grading 7.09% Pb, 6.57% Zn and 79.9 g/t Ag.
Classification: Middle to Upper Devonian tectono-hydrothermal, synsedimentary submarine exhalative lead-zinc-silver massive sulphide and barite.
References:
INAC Reports: 1985-86 YEX, p. 278
Other: Bailes et al. (1986, p. 87-99); Smee and Bails (1986); Winn et al. (1987); Turner et al. (1986)
Recent References: Turner (1987); Turner et al. (1989)

20. NIDD (105 O 1, 2)

Geology: Fine to coarse grained clastics and volcanic rocks of the Road River and Earn Groups host stratiform bedded to massive pyrite-galena-sphalerite mineralization.
Geochemistry: 1984 diamond drill hole assay results include a 2 m intersection of 6.3% Zn, 2.5% Pb, 27.43 g/t Ag, 119 ppm Cu and 24% Fe in grey siliceous lapilli tuff with local iron carbonate.
Classification: Middle to Upper Devonian tectono-hydrothermal, synsedimentary submarine exhalative lead-zinc-silver massive sulphide.
References:
1977 MIR, p. 34; 1981 YEG, p. 175; 1982 YEG, p. 164; 1983 YEG, p. 217; 1984 YEX, p. 133

22. BORD (105 O 8)

Geology: Hadrynian or Cambrian shales and siltstones are intruded by a Cretaceous biotite quartz monzonite stock with a peripheral hornfels zone up to 1 km thick. Gold-bearing quartz-pyrite veins occur along concentric fractures in the hornfels parallel to the intrusive contact. Radial fractures contain quartz and tourmaline but are barren of mineralization. The main system is within 100 m of the stock and is 325 m long with an average width of 10 to 20 cm. It is discontinuous and pinches and swells horizontally and vertically. Vein mineralogy is arsenopyrite, quartz and clay with minor pyrite, muscovite and tourmaline. Gold is present in arsenopyrite and as native gold. Wall rock

alteration extends up to 1 m from the vein with the development of muscovite, clays and iron oxides. Other gold-bearing arsenopyrite veins are erratic and discontinuous and extend for less than 50 m along strike.

Geochemistry: One sample across 1 m of arsenopyrite vein assayed up to 17.8 g/t Au.
Samples collected by Morin were analysed with the following results:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
17	62	LT 0.5	44.0	26	35.0
18	2400	3.0	150.0	90	18.0
19	31	LT 0.5	8.5	12	74.0
20	3	LT 0.5	22.0	16	86.0
21	42	LT 0.5	83.0	16	20.0

	Sb ppm	Mn ppm	Ba ppm	Hg ppb	As ppm
17	15.0	100	760	10	GT 1000
18	150	54	40	LT 10	GT 1000
19	3.1	42	40	20	GT 1000
20	0.8	710	960	20	130
21	3.8	60	200	10	GT 1000

	Sn ppm	Bi ppm	W ppm
17	30	13.0	28
18	10	INF	INF
19	5	1.1	14
20	3	0.3	3
21	25	0.9	15

Sample Descriptions:
17 - Stockwork of chlorite and/or tourmaline in hornfelsed grit; veinlets with 1 to 3 mm width and 1 cm spacing; trace scorodite;
18 - Leached, porous, friable, crumbly quartz vein breccia with several cm-sized lenses of fine-grained galena and pyrite or pyrrhotite; from trench on vein;
19 - Massive glassy colourless to milky white quartz vein; no sulphides but lensy boxwork present; some chlorite-tourmaline veinlets;
20 - Brownish-green hornfelsed siltstone with chlorite - tourmaline (?) stockwork with 1 to several cm fracture spacing;
21 - Breccia with clasts of phyllic-altered granitoid in a quartz chlorite and/or tourmaline matrix; from stockwork in contact zone of pluton

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver veins.
References:

INAC Reports: 1983 YEG, p. 217
Assessment Reports: 091494

24. NEVE (105 O 7)

Geology: Open-folded, Ordovician to Permian shale, limestone, siltstone, sandstone and conglomerate are cut by several highly altered, Cretaceous (?) quartz-feldspar porphyry and unaltered biotite quartz monzonite sills and dykes and also by a series of north- and east-trending faults. Sill emplacement is controlled by the east-trending cleavage and faulting. Two major north-trending faults show offset of rock units and structure (including east-trending faults) and are associated with veining, alteration and geochemical anomalies. Quartz, realgar and stibnite occur in veinlets cutting the porphyry intrusives. Clay alteration, silicification, sericitization, bleaching and graphite remobilization are common within the fault zones.
Geochemistry: 1985 diamond drill intersections include 30.5 m in the Main fault zone grading 0.311 g/t Au and 2.59 g/t Ag and in the Boundary fault zone six intersections between 0.7 and 9.7 m wide containing up to 0.944 g/t Au and 9.34 g/t Ag.
Samples collected by Morin were analysed with the following results:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
1	390	2.0	13.0	86	30.0
2	63	2.5	11.0	80	32.0
3	19	3.0	69.0	56	61.0
4	58	1.0	71.0	46	2100
5	3	LT 0.5	33.0	80	94.0
6	LT 2	LT 0.5	8.0	54	13.0

	Sb ppm	Mn ppm	Ba ppm	Hg ppb	As ppm
1	300.	30	1520	9700	GT 1000
2	27.0	32	1280	15 700	98.0
3	32.0	54	1520	1600	270.
4	8.1	140	1920	300	860
5	1.7	130	1300	1100	26.0
6	9.4	12	1140	1800	22.0

	Sn ppm	Bi ppm	W ppm
1	17	6.9	7
2	17	1.3	11
3	20	2.7	28
4	3	1.0	5
5	LT 3	0.2	8
6	5	0.5	4

Sample Description:
1 - Quartz-feldspar porphyry, pervasive phyllic alteration; veinlets of realgar, orpiment and quartz;
2 - Quartz-feldspar porphyry with predominant type of pervasive phyllic alteration less advanced than 3 and more advanced than 1; feldspar phenocrysts remain discrete;
3 - Quartz-feldspar porphyry highly altered and recrystallized to muscovite-quartz assemblage (greisen?);
4 - Silicified and bleached hornfels next to quartz-feldspar porphyry contact, has blebs of minor disseminated pyrite;
5 - Quartz-feldspar porphyry, relatively unaltered with trace disseminated pyrite and possible potassic alteration;
6 - Quartz-feldspar porphyry dykelet with intense argillic alteration and earthy texture

Classification: Cretaceous magmato-hydrothermal, mesozonal to epizonal, intrusive-hosted gold-silver-antimony stockwork.
References:
INAC Reports: 1981 YEG, p. 175; 1982 YEG, p. 164; 1983 YEG, p. 217-218; 1984 YEX, p. 140-141; 1985-86 YEX, p. 280
Assessment Reports: 091770; 091544; 091455; 091056; 091388; 091389

36. OLD CABIN (105 O 11)

Geology: A sequence of Proterozoic and/or lower Paleozoic fine-grained clastics and cherts and mafic flows, tuffs, breccias and agglomerates is intruded by a mid-Cretaceous granodiorite stock (K-Ar bio. 94.9 Ma). The stock and country rocks are displaced by north- and northwesterly striking faults. Gold-bearing arsenopyrite veins occur at six localities cutting the country rocks. Veins crosscutting the sedimentary rocks or occupying the faults tend to be continuous along strike and range between 1 cm and 15 cm in width. Veins cutting mafic and intermediate volcanics are smaller, more erratically distributed and numerous. Associated vein sulphides are pyrite and interstitial argentiferous galena and chalcopyrite. Molybdenite-bearing quartz veins also cut the stock.
Geochemistry: Grab samples of vein material assayed up to 22.42 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-lead-copper-molybdenum veins.
References:
INAC Reports: 1981 YEG, p. 176; 1982 YEG, p. 165
Assessment Reports: 091076; 091404
Other: Hart (1986)

42. EMMY (105 O 6)

Geology: Chert, quartzite and black shale of Paleozoic age are intruded, sandwiched and hornfelsed by two Cretaceous quartz monzonite plugs. Two major deformational features in the country rocks are a "black breccia" made up of brecciated quartzite, crushed chert, gossan quartz, sheared black shales and black clay gouge transected by quartz veins and a "cataclastic zone" adjacent to a major fault. Quartz veins and stockwork occur within these features as well as within nearby smaller, parallel subsidiary faults, en echelon tension gashes and associated with altered felsic dykes. Hornfels in the cataclastic zone is variably altered with silicification common and local kaolinite development minor. Epithermal vein characteristics are present, including: banded ribbon quartz, cockscomb textures, small vugs lined with drusy quartz and irregular white to grey chalcedonic patches. Visible sulphides include pyrite and arsenopyrite.
Geochemistry: Two veins gave the following analyses: 3400 and 3130 ppb Au, 5.9 and 775.6 ppm Ag, 23 and 139 ppm Cu, 116 ppm and 1.7% Pb, 132 and 7 ppm Zn, 4703 and 2618 ppm As, 102 and 795 ppm Sb, 2 and 375 ppm Bi.
Classification: Cretaceous magmato-hydrothermal, mesozonal to epizonal, intrusive-proximal gold-silver-lead veins.
Comments: The 'black breccia' may represent part of a regional thrust zone that is locally mineralized.
References:
INAC Reports: 1982 YEG, p. 166-167
Assessment Reports: 091377

46. ETZEL (105 O 12)

Geology: A sequence of Hadrynian clastics, Silurian volcanic rocks and Devonian fine- to coarse-grained clastic sedimentary rocks is intruded by a mid Cretaceous granodiorite stock. Quartz veins are largely restricted to the granodiorite and occupy joints. These are cut by a later generation of quartz veining with associated hydrothermal alteration. Associated sulphide minerals include pyrite, arsenopyrite, stibnite, chalcopyrite, galena and sphalerite.
Geochemistry: A grab sample of a quartz-arsenopyrite-pyrite-stibnite vein contained 1400 ppb Au, 12.1 ppm Ag, 825 ppm Cu, 1.2% Pb, 2.2% Zn, 1.4% As, 237 ppm Cd and 2404 ppm Sb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted gold-silver-lead-zinc veins.
Comments: This showing is NE of the PLATA by 5 to 10 km and a zonation may be present.
References:
INAC Reports: 1982 YEG, p. 167-168
Assessment Reports: 091378

48. NUT (105 O 7)

Geology: A porphyritic biotite quartz monzonite stock (approximately 400 m diameter) intrudes clastic and carbonate strata of lower Paleozoic age. The stock is surrounded by a discontinuous zone of contact breccia up to 100 m wide that consists of angular, bleached calc-silicate fragments in a clastic matrix. A contact hornfels aureole extends 800 to 1000 m away from the stock. Three types of mineralization are present: 1) pyrrhotite-pyroxene skarn lenses up to several m wide, with accessory chalcopyrite, scheelite, galena and arsenopyrite in three areas; 2) quartz-sericite veins up to 12 cm wide containing galena, arsenopyrite, sphalerite and chalcopyrite occur near the margins of the stock, within breccia and immediately adjacent unbrecciated hornfels; and 3) galena as interstitial disseminations in the contact breccia.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-tungsten-lead skarn, lead-copper-zinc-gold-silver veins and silver-lead disseminations.
References:
INAC Reports: 1983 YEG, p. 218-219; 1984 YEX, p. 141
Assessment Reports: 091493; 091567

51. J.K. (105 O 1)

Geology: Fine grained clastics and carbonates of the Road River and Earn Groups host a laminated barite bed with a strike length of 2 km and a thickness up to 3 m. They are intruded by a Cretaceous quartz monzonite stock with associated pyrrhotite-rich skarns, porphyritic dykes and quartz-sulphide veins.
Geochemistry: A quartz-tetrahedrite vein contained 0.16% Cu, 570.8 g/t Ag and 186 ppb Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-copper-gold vein.
References:
INAC Reports: 1982 YEG, p. 168; 1984 YEX, p. 131-133
Assessment Reports: 091539

52. NUKE (105 O2)

Geology: Devonian to Permian chert, shale, siltstone and arenite are intruded by a biotite monzonite stock. A northwest-trending, elongate, dominantly pelitic hornfels aureole 400 to 1000 m wide, contains trace pervasive pyrrhotite and surrounds the 500 m by 1500 m medium-grained unaltered stock. Sericitic alteration of the stock is limited to halos around fractures and veins, and biotite monzonite to felsic quartz-feldspar porphyry dykes up to 50 m wide radiate out from the western contact. A northerly-striking set of quartz-arsenopyrite-galena-tetrahedrite veins occurs in the pelitic hornfels adjacent to the contact of the monzonite stock and a rare pyroxene-pyrrhotite skarn was located in a xenolith of pelitic hornfels and wollastonite skarn.
Geochemistry: A quartz-arsenopyrite vein assayed 0.192 oz/t Au and 18.8 oz/t Ag across 4 cm, and a chip sample of the pyroxene skarn returned 0.008 oz/t Au and 0.18 oz/ton Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver vein and skarn.
References:

INAC Reports: 1984 YEX, p. 134-135
Assessment Reports: 091534; 091592

53. DALL (105 O 3)

Geology: Fine- to coarse-grained clastics of the Lower Earn Group are intruded by a small Cretaceous biotite quartz monzonite stock and associated quartz porphyry dykes. An extensive pyrrhotite-rich hornfels is developed for 1 to 2 km into the country rock. Epigenetic mineralization consists of thin veinlets of quartz-arsenopyrite filling joints within the intrusion and fractures in the country rocks and sphalerite within 30 cm thick beds of siliceous pyrite-bearing skarn.
Geochemistry: A 1 m chip sample across thin arsenopyrite veins contained 815 ppb Au and a grab sample of sphalerite-bearing skarn contained 445 ppb Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold vein and gold-zinc skarn.
References:

1983 YEG, p. 219; 1984 YEX, p. 136-138

54. LEAF (105 O 7)

Geology: Ordovician to Silurian Road River black shale and green mudstone with minor chert, siltstone and limestone are intruded by the Niddery Lake Stock of medium-grained, slightly porphyritic, hornblende-biotite quartz monzonite and associated quartz-feldspar porphyry dykes. A flow foliation is near the intrusive contact, and xenoliths and roof pendants are abundant. The pluton is surrounded by a kilometre-wide gneissic hornfels zone with disseminated pyrite and pyrrhotite. Several northwest- and northeast-trending lineaments may be related to emplacement of the intrusion. A prominent 120 degree striking fault is near the contact between black shales and green mudstones and is the focus of quartz veining. The largest vein is 40 m long and 2 m wide, but most are smaller and stockwork of veinlets is common in the adjacent wallrock. The veins are composed mostly of quartz with minor pyrite and rare fluorite; silicification and iron oxide staining of wallrock is common. In addition, two thin arsenopyrite-quartz veins cut a porphyry dyke.
Geochemistry: Rock geochemistry indicates that the quartz veins are only slightly enriched in gold and arsenic (less than 300 ppb Au). Some fault breccia returned as much as 540 ppb Au, 2.9 ppm Ag and 900 ppm As. A grab sample of an arsenopyrite vein contained 8340 ppb Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold veins.

References:

INAC Reports: 1984 YEX, p. 138-139; 1983 YEG, p. 219

Assessment Reports: 091532

106 B

1. **ECON (106 B 6)**

Geology: Pale grey limestone at the top of the Lower Cambrian Sekwi Formation is unconformably overlain by shale of the Road River Formation. Galena-sphalerite-barite mineralization occurs within a series of ferro-calcite veins which are controlled by and emplaced along east-west fractures related to a regional northwest-striking fault system. The veins are steeply dipping and vary in size from short veinlets to large 40' by 1200' veins.
Geochemistry: Trench samples range from 0.02 to 1.9 oz/t Ag, 0.40 to 68.55% Pb and 8.00 to 36.80% Zn.
Classification: Cretaceous (?) magmato-hydrothermal (?), epizonal, intrusive-distal silver-lead-zinc-barite veins.
References:
INAC Reports: 1974 MIR, p. 19
Assessment Reports: 061186

106 C

4. GEORDIE (106 C 13)

Classification: Lead-zinc-silver vein/replacement.
References:
N.C.M.I.

8. DOLORES (106 C 13)

Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related copper-silver-cobalt vein.
Comments: The metal association and geological environment suggest that the showing is related to a Helikian breccia body and is possibly comparable in style of mineralization to the OTTER.
References:
Findlay (1969b, p. 16-17); Laznicka and Edwards (1979, map included); N.C.M.I.

11. CIRQUE (106 C 14)

Geology: Helikian slate, phyllite and calcareous phyllite are intruded by a breccia body with extensive accompanying feldspathic alteration. Mineralization consists of stringers and lenses of quartz-siderite with disseminated to massive chalcopyrite and cobaltite. In addition, disseminated chalcopyrite occurs along bedding and cleavage planes in slates and phyllitic rocks and as patchy disseminations erratically distributed within feldspathized sedimentary rocks.
Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related copper-cobalt-silver veins and disseminations.
References:
Findlay (1969b, p. 16-17); Laznicka and Edwards (1979, map included)

13. TETRAHEDRITE CREEK (IOTA) (106 C 14)

Geology: Clastic and carbonate sedimentary rocks of the Proterozoic Wernecke Supergroup are intruded by irregular, pipe-like breccia complexes, and dolomite is locally brecciated and feldspathized. The rocks are cut by numerous faults with two associated vein types: 1) tetrahedrite +/- pyrite and chalcopyrite in siderite and 2) one or more of tetrahedrite, galena or sphalerite in quartz, calcite or dolomite.
Geochemistry: Best grab sample of a vein cutting dolomite is 412 ppm Au, 83 ppm Ag, 5.9% Cu, 21.2% Pb and 5.5% Zn. The vein contains tetrahedrite, galena, stibnite, galena, sphalerite and arsenopyrite in a quartz-dolomite gangue.

Samples collected by Morin gave the following analyses:

Sample	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
37	91	1.0	220	120	99
38	11	1.0	19	160	1.03 %
39	1600	16.1 opt	5.17 %	1400	0.53 %
40	42	4.0	270	58	100
41	10	2.5	250	84	210
42	210	1.5	18.0	36	49.0
43	12	1.5	23.0	28	23.0
44	2	1.0	100	40	99
45	2	1.5	140	46	97
46	LT 2	0.5	7.0	94	29.0
47	18	6.5	1100	60	140

	Cd ppm	Mn ppm	As ppm	Hg ppb	Sb ppm
37	LT 1	600	860	40	53
38	30	3900	170	4.20 ppm	46
39	29	1.39 %	0.48 %	60.0 ppm	3.82 %
40	LT 1	1200	110	GT 400	170
41	LT 1	1400	48	350	83
42	LT 1	2300	43	160	8.3
43	LT 1	980	11.0	80	8.9
44	LT 1	810	24.0	30	11.0
45	LT 1	960	64	20	9.1
46	LT 1	390	37.0	10	34.0
47	LT 1	720	970	230	280

	Bi ppm	Ba ppm	W ppm	Mo ppm	Sn ppm
37	0.7	420	LT 1	1	LT 3
38	0.2	80	6	LT 1	LT 3
39	0.10 %	40	LT 1	LT 1	LT 3
40	3.8	140	6	LT 1	LT 3
41	3.4	220	4	5	5
42	0.6	20	4	LT 1	LT 3
43	0.5	20	4	LT 1	LT 3
44	0.6	1000	1	LT 1	LT 3
45	1.6	500	1	1	LT 3
46	0.2	260	4	LT 1	LT 3
47	1.3	360	1	LT 1	3

Sample Description

37 - Pale green and grey granular carbonate with disseminated pyrite and chalcopyrite cross cut by 3 mm veinlets of grey carbonate, pyrite and arsenopyrite; from auriferous quartz vein zone (I-1 zone);

38 - Vein of coarse-grained, buff carbonate (siderite?) and milky white quartz with some wallrock inclusions but no visible metallic minerals; abundant disseminated pyrite and some chalcopyrite in dolomite wallrock (I-1 zone);

39 - Vein of banded coarse-grained siderite, quartz and tetrahedrite (?) (I-4 zone);

40 - Creamy grey dolomite wallrock with disseminated siderite (I-1 zone);

41 - Feldspathized dolomite with weakly disseminated pyrite (I-1 zone);
42 - Fault zone breccia with clasts of creamy buff dolomite and brick red carbonate in a crystalline dolomite matrix;
43 - Fault zone dolomite breccia with matrix of coarse grained crystalline siderite;
44 - Carbonatized and chloritized lamprophyre cut by carbonate veinlets (I-1 zone);
45 - Lamprophyre altered to chloritite (I-1 area);
46 - Feldspathized dolomite with abundant disseminated pyrite and chlorite alteration along fractures (I-1 area);
47 - Pale green granular dolomite cut by veinlets of carbonate and rare tetrahedrite and containing disseminated chalcopyrite and pyrite.

Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related gold-silver-copper-lead-zinc vein.

References:

INAC Reports: 1981 YEG, p. 185-186; 1983 YEG, p. 228-229
Assessment Reports: 090895; 091456; 091502
Other: Laznicka and Edwards (1979, map included)
More Recent References: 1988 YEX, p. 139, 141-142

35. PROFEIT (106 C 14)

Geology: Hadrynian clastics and carbonates are cut by several faults, sheet-jointing and local shear zones. Mineralization occurs as galena, sphalerite, pyrite and tetrahedrite in fractures and vugs.
Geochemistry: A drill hole intersection in 1981 gave an assay of 0.18% Zn, 9.90% Pb and 142.6 g/t Ag over 2 m. A grab sample collected by Morin of massive galena and sphalerite gave the following values: 0.002 oz/t Au, 56.8 oz/t Ag, 9.0 ppm Cu, 77.2% Pb, 3.42% Zn, 0.01% Cd, 25 ppm Mn, 29 ppm As, 33 000 ppb Hg, 2600 ppm Sb, LT 0.1 ppm Bi, 18 ppm W, 2.0 ppm Mo, LT 20 ppm Tl and 2.7 ppm U.
Classification: Cretaceous (?) magmato-hydrothermal(?), mesozonal, intrusive-distal silver-lead-zinc vein.

References:

INAC Reports: 1974 MIR, p. 60-61; 1975 MIR, p. 57-58; 1981 YEG, p. 186
Assessment Reports: 090869

59. SIAN (106 C 2)

Classification: Silver-lead-zinc stratabound discordant vein.

References:

INAC Reports: 1977 MIR, p. 36; 1979-80 YGE, p. 224
Assessment Reports: 090613; 090697

60. OTTER (106 C 13)

Geology: Helikian sedimentary rocks of the Fairchild and Quartet Groups (siltstone, dolomite and limestone) are intruded by diatreme breccia pipes flanked by contact alteration halos. Several veins nearby occur along a north-northwest trending shear zone. They trend generally northeast and dip northwest, and contain cobaltite, chalcopyrite, pyrite and arsenopyrite in a carbonate gangue. Country rocks between the veins contain disseminated fine-grained sulphides, mainly pyrite with less arsenopyrite and chalcopyrite. The veins can be traced for as much as 30 m and are up to 5 m wide.

Geochemistry: A grab sample of the main cobaltite vein is reported to assay 4.75% Cu, 0.20% Ni, 0.007% U_3O_8, 0.01 oz/ton Ag and 0.018 oz/ton Au. One fairly typical vein intersected in drilling graded 0.64% Co and 1.05% Cu over 3 m, and a 9 m drill intersection of the vein with the disseminated zone on both sides graded 0.24% Co and 0.53% Cu.
Classification: Hellkian tectono-hydrothermal, mesozonal salt (?) diapir-related copper-cobalt-uranium-gold-nickel vein.
References:
INAC Reports: 1978 MIR, p. 11; 1979-80 YGE, p. 224; 1981 YEG, p. 186-187
Assessment Reports: 090621; 090817

61. CRAIG (106 C 3)

Geology: Two east-west trending sequences, a Proterozoic sequence of clastics, carbonates and volcanics to the south ('Grit Unit'), and Paleozoic carbonates and clastics to the north are separated by the "Dawson Thrust". This major tectonic feature is steeply dipping and has been variously interpreted as a thrust fault (Blusson, 1978), and also as a zone of incipient rifting during the early Paleozoic (Tempelman-Kluit, 1981). Mineralization consists mainly of galena, sphalerite, minor pyrite and tetrahedrite and rare chalcopyrite, realgar and orpiment within a silicified and brecciated horizon of grey dolomite in the 'Grit Unit" on the south side of the fault. Sulphides form the matrix of the brecciated dolomite along with sparry dolomite and quartz and to a minor extent also occur along the pseudo-bedding planes in zebra dolomite, along stylolites and in vugs.
Reserves: Reserve estimates for the West Zone (drill inferred) are 1 million tons grading 8% Pb, 13% Zn and 3 oz/t Ag.
Classification: Cretaceous (?) magmato-hydrothermal mesozonal to epizonal, intrusive-distal silver-lead-zinc vein, breccia, replacement and vugs.
Comments: The 'Dawson Thrust' appears to be a locus for Pb-Zn-Ag mineralization and is worthy of further regional prospecting.
References:
INAC Reports: 1979-80 YGE, p. 225-230; 1977 MIR, p. 37
Assessment Reports: 090307

63. VAL (106 C 5)

Geology: Light grey dolomite of Lower Paleozoic (?) age hosts several zones of lead-zinc-silver mineralization: South Hill, Big Red, Little Red and North Kill. The latter three are irregularly shaped, discontinuous lenses of coarsely crystalline sphalerite and galena in a gangue of quartz and ankeritic dolomite. The South Hill zone is a northeast-striking fracture zone with sphalerite, galena and traces of tetrahedrite, pyrite and jamesonite in a dolomite gangue.
Reserves: Drill inferred tonnage is 22 500 tonnes of 1029 g/t Ag, 26.7% Pb and 7.3% Zn over a strike length of 50 m.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1979-80 YGE, p. 231-235; 1981 YEG, p. 187
Assessment Reports: 090914; 090923

64. VERA (106 C 5)

Geology: Orange weathering, ankeritic, algal-laminated dolomite of Proterozoic age hosts two zones of lead-zinc-silver mineralization along near vertical, northeast-trending fractures or fracture zones. Mineralization consists of coarsely crystalline galena and sphalerite with some tetrahedrite and minor chalcopyrite and pyrite in a gangue of dolomite, manganiferous siderite or ankerite and quartz.
Reserves: Underground and drill indicated reserves are 850 000 tonnes grading 306 g/t Ag and 3.7% Pb-Zn.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1979-80 YGE, p. 231-235; 1981 YEG, p. 187; 1982 YEG, p. 14-15
Assessment Reports: 090914; 090923

78. COOKER (106 C 4)

Geology: Ferrodolomite of the Upper Proterozoic to Lower Cambrian 'Grit Unit' structurally overlies black carbonaceous shale of Paleozoic age along the "Dawson Thrust". Mineralization is localized along the fault and is sheared. It consists of galena, sphalerite with minor pyrite, chalcopyrite and tetrahedrite with secondary smithsonite, hydrozincite, cerussite and malachite.
Geochemistry: A sample taken across a 60 cm vein assayed 10.10 oz/t Ag, 15.50% Pb, 22.70% Zn and 0.125% Cu.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc-copper vein.
References:
INAC Reports: 1977 MIR, p. 37
Assessment Reports: 090315

106 D

1. KATHLEEN (106 D 8)

Geology: A west-northwest trending sequence of orange weathering, platy grey dolomite and dolomitic shale of the Helikian Gillespie Lake Group, is overlain by grey weathering, thick bedded limestone and dolomite of probable Ordovician age. Two mineralized zones occur in the Helikian dolomite - the main zone which is at least 700 m long with an east-northeast trend and a steep dip to the south and a second sub-parallel zone about 400 m south of the main zone and at least 500 m long. The main zone consists of fine grained sphalerite and calcite in carbonate breccia with very minor galena.
Geochemistry: Ten trenches across a 10 to 15 m interval of the main zone assayed 1 to 6% Zn, 0.5% Pb and 0.3 oz/ton Ag. The best assay was 9 m of 11.8% Zn, 32.7% Pb and 14.31 oz/ton Ag. Most of the assays from three old trenches across the second zone were low, except for a sample across 10 m which assayed 6.6% Zn, 0.3% Pb and 2.97 oz/ton Ag.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc breccia matrix.
Comments: This may be an example of thrust-related mineralization in the top of the lower plate.
References:

INAC Reports: 1977 MIR, p. 43; 1978 MIR, p. 15; 1981 YEG, p. 194; 1983 YEG, p. 233
Assessment Reports: 090811
Other: Green (1972, p. 132)
More Recent References: 1988 YEX, p. 145

2. NOW (106 D 2)

Geology: Sedimentary rocks host quartz-boulangerite-sphalerite vein mineralization. They consist of massive black argillite to cherty argillite overlain by massive light to dark grey dolomite and dark grey to black carbonaceous, locally limy, shale. Disseminated pyrite occurs in the argillite and contorted, disjointed thin quartz-calcite veinlets in the dolomite and shale. These vary from stringers a few mm wide to a vein 3 m wide at or near the contact between the shale and dolomite. Intensity of veining ranges from veinlets every few cm to pervasive zones with abundant shattering and dark recrystallized calcite.
Geochemistry: The best diamond drill intersection is 4.64% Pb, 0.04% Zn, 60.21 g/t Ag and 3.49 g/t Au across 1.07 m. A grab sample of trench rubble assayed 23.26% Pb, 0.06% Zn, 16.96 oz/ton Ag and 1.15 oz/ton Au.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc-gold vein.
References:

INAC Reports: 1979-80 YGE, p. 238
Assessment Reports: 090581; 090441; 092667
More Recent References: 1988 YEX, p. 145-146

3. MARG (106 D 1)

Geology: The Marg massive sulphide deposit is contained in "an imbricated assemblage of Lower Cambrian and older 'Grit Unit', Devonian (?) and Mississippian black shale and quartzite with felsic and mafic volcanic rocks, the Mississippian Keno Hill quartzite and the Jurassic and older (?) lower schist" (YEX 1988). Tuffaceous (?) metasedimentary rocks (sericite and graphitic phyllites) host three banded limonite-clay horizons ranging from 5.5 to 20 cm thick.

Geochemistry: Analyses of samples taken across the horizons are presented below:

	Middle Horizon	Upper Horizon	Upper Horizon and mineralized hangingwall
Thickness	12 cm	20 cm	150 cm
Au g/t	8.06	2.33	0.21
Ag g/t	323	197.8	97.4
Cu %	1.35	0.77	0.44
Pb %	9.09	9.98	4.52
Zn %	0.54	0.21	0.14

Classification: Devono-Mississippian tectono-hydrothermal, synsedimentary, stratiform gold-silver-copper-lead-zinc sulphide horizons or Cretaceous magmato-hydrothermal, mesozonal intrusive-distal replacement.
Reserves: Drill indicated and inferred reserves (1988) were 2 097 000 tonnes of 1.9% Cu, 2.6% Pb, 4.99% Zn, 64 g/t Ag and 0.96 g/t Au with no cutoff grade; and 426 000 tonnes of 3.48% Cu, 4.57% Pb, 8.83% Zn, 108 g/t Ag and 1.6 g/t Au with cutoff of 14% combined copper, lead and zinc (YEX 1988).
References:
INAC Reports: 1982 YEG, p. 180; 1983 YEG, p. 233; 1984 YEX, p. 153
Assessment Reports: 092682
More Recent References: 1987 YEX, p. 211; 1988 YEX, p. 146-148 (includes map, cross section and reserves figures by J.G. Abbott)

5. CLARK (106 D 2)

Geology: Quartzite, chlorite schist, mica schist, graphitic schist and limestone have an easterly strike and moderate dip to the south of 20 to 50 degrees. Limestone sandwiched in quartzite is fractured, brecciated, schistose with graphite and locally mineralized with disseminated pyrite, pyrrhotite, galena, sphalerite and rare chalcopyrite. Mineralization follows a Z-shaped sigmoidal fault zone mainly in the limestone with variable dips to the south. The zone of mineralization pinches and swells with a minimum dimension of inches to twenty feet and commonly contains limestone blocks. It occurs as bands along the fault, as matrix for the crushed limestone and as partial replacement of breccia clasts.
Reserves: Indicated and inferred reserves calculated in 1975 for Bullion Mtn were 327 323 tonnes grading 255 g/t Ag, 5.64% Pb and 4.6% Zn (YEX 1988).
Classification: Cretaceous (?) magmato-hydrothermal mesozonal, intrusive-distal silver-lead-zinc vein, replacement and breccia matrix.
Comments: A major thrust fault is probably associated with the mineralization.
References:
INAC Reports: 1969-70 MIR, p. 19-20; 1973 MIR, p. 15-16
Assessment Reports: 092121; 092669
Other: Abbott (1982, p. 18)
More Recent References: 1988 YEX, p. 146, 149 (reserves, assays)

6. CAMERON (PAUL) (106 D 3)

Geology: Quartzite, phyllite and minor limestone are cut by a 030 degree-trending fault mineralized with siderite, galena, sphalerite, chalcopyrite and quartz. The fault has a surface expression of at least 1200 ft and is up to 50 ft wide.
Geochemistry: A grab sample of high grade material taken from the dump assayed 0.005 oz/ton Au, 40.48 oz/ton Ag, 40.9% Pb, 10.75% Zn, 0.28% Cu and 0.09% Sb. The best diamond drill hole intersection (1974) was 8.38 oz/ton Ag and 32.28% Pb + Zn over 20 ft.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
References:
INAC Reports: 1974 MIR, p. 16-17
Other: Green (1971, p. 63-64); Green (1972, p. 132); Bostock (1957, p. 483-487 and 494-500)

7. STAND-TO-HILL (FOLEY SILVER) (106 D 3)

Geology: Massive greenstone intercalated with fine-bedded quartzite and quartz-mica schist is cut by a vein-bearing fault. The fault is up to 12 ft. wide and is bounded by two strong, sub-parallel shears trending about 345 degrees and dipping vertically or steeply east. Between the shear zones is highly fractured, locally gougy, reddish-brown limonite-stained material carrying sub-parallel lenses and veins of quartz-siderite with disseminated to massive galena, sphalerite and minor chalcopyrite.
Geochemistry: A characteristic grab sample assayed 61.5 oz/ton Ag and 77.3% Pb and a chip sample across 12 ft. assayed 3.52 oz/ton Ag, 5.2% Pb and 1.0% Zn.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
Comments: This may be part of a hydrothermal system related to the Roop Lake Pluton.
References:
INAC Reports: 1981 YEG, p. 198
Other: Bostock (1957, p. 497-498); Findlay (1967, p. 25-26); Findlay (1969b, p. 13-14)

9. SPRING (HL) (106 D 3)

Classification: Silver-lead-zinc vein.
References:
1971-72 MIR, p. 30

10. RAMBLER HILL (106 D 3)

Geology: A silver-lead vein zone occurs in greenstone and chlorite-sericite schist. The vertical vein strikes in a northward direction for a total exposed distance of 655 ft. and pinches and swells in width from 4 ft to 10 ft. It consists mainly of limonite, wad, siderite and galena and occurs within the surface oxidized zone.
Geochemistry: Twelve grab samples taken along 375 ft. of the northern part of the vein zone averaged 30.45 oz/ton Ag, 23.3% Pb, 1.6% Zn and 2.6% Mn; and six taken along 100 ft. of the southern part of the vein zone averaged 7.55 oz/ton Ag, 12.7% Pb, 1.19% Zn and 4.7% Mn.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein.
Comments: This may be part of a hydrothermal system related to the Roop Lake Pluton.
References:
Assessment Reports: 060787
Other: Bostock (1957, p. 466-467, 498-499); Cockfield (1922, p. 4-5); Green (1971, p. 63)
More Recent References: 1987 YEX, p. 212

12. ERIN (106 D 4)

Classification: Silver-lead-zinc vein.
References:
1969-70 MIR, p. 16-17

14. SKATE (JAY) (106 D 4)

Geology: Quartzite, quartz-mica schist and limestone are intruded by two small stocks of granodiorite. Nearby, a concordant sheet-like body of altered and heavily iron and manganese- stained coarse-grained siderite with minor galena, sphalerite, pyrite, jamesonite (?) and quartz is hosted in schist near a contact with limestone. Narrow stringers and veinlets of galena are concentrated along the hanging wall and footwall contacts.
Geochemistry: Samples taken in 1973 across a true width of 2.7 m average 394 g/t Ag, 4.98% Pb, 5.05% Zn and 0.48 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc-gold vein/replacement.
References:
INAC Reports: 1981 YEG, p. 194
Assessment Reports: 090813
Other: Green (1966, p. 16-17)

15. PESO NO. 1 (106 D 4)

Geology: Impure micaceous quartzite with lesser amounts of phyllite and schist are intruded by sills of quartz porphyry, granite porphyry and possibly granodiorite. These country rocks host an irregular vein system (Nos. 1 to 6) of discontinuous en echelon veins and subparallel veins with an over-all trend of 070 degrees over about 14 000 ft. and with a moderate dip to the north. The vein fault has been explored underground for a distance of 590 ft. Rocks exposed underground are very contorted and the degree of alteration is variable, ranging from unaltered sulphides to completely oxidized material. Mineralogy includes scorodite, bindheimite, goethite, arsenopyrite, pyrite, jamesonite, siderite, freibergite, jarosite(?) and chalcanthite.
Reserves: Estimated proven and probable reserves calculated in 1965 for the No. 1 Vein West and No. 1 Vein East are 68 620 tons grading 18.5 oz/ton Ag and 3.5% Pb.
The following three sample sections across the No. 1 Vein give an idea of the mineralization (Campbell & Tipper 1969, p. 135-136):

SAMPLE #	1	2	3
Gold (oz/ton)	0.01	0.04	0.01
Silver (oz/ton)	9.489	36.083	3.30
Lead (%)	1.54	6.90	0.82
Zinc (%)	0.28	0.02	0.05
Copper (%)	1.34	0.04	0.20
Antimony (%)	0.50	4.91	0.59
Bismuth (%)	0.12	0.01	0.05
Cadmium (%)	n.d.	0.05	n.d.
Arsenic (%)	3.37	4.90	2.16

1. Siderite-quartz-jamesonite-arsenopyrite-freibergite-clay; sample width 15 ft.
2. Clay-scorodite-goethite-graphite (?)-jarosite; sample width 15 ft.
3. Quartz-pyrite-jamesonite-silicified quartzite; sample width 9 ft.

Classification: Cretaceous magmato-hydrothermal, mesozonal intrusive-proximal silver-lead-zinc vein.
Comments: The vein structure may be along a longitudinal zone of weakness that is in line with the major axis of the Potato Hills Stock and that focussed part of the Potato Hills' hydrothermal system.
References:

INAC Reports: 1978 MIR, p. 14; 1979-80 YGE, p. 244; 1984 YEX, p. 158
Assessment Reports: 1978 trench report; 1977 trench report
Other: D.D. Campbell report (1965); Green (1972, p. 134-136); Green (1965, p. 20-22);
More Recent References: 1987, p. 213

15. REX (106 D 4)

Geology: Four km east-southeast of the Peso No. 1, buff weathering, grey phyllitic quartzite and dark grey to grey-green phyllite host the Rex vein. It trends about 070 degrees, dips between 50 and 55 degrees north and has a strong, well-defined footwall shear with subsidiary subparallel breaks in the hanging wall. The zone has been explored underground for 1350 ft and consists of a breccia of fragments of quartzite and phyllite mineralized with dark brown siderite, pyrite and jamesonite. Other vein minerals include bindheimite, quartz, boulangerite, galena, tetrahedrite, arsenopyrite, sphalerite and a medium to dark green nickel-bearing mica.
Reserves: Estimated proven and probable reserves calculated in 1965 for the REX B-Zone, hanging wall and footwall are 85 010 tons grading 23.2 oz/ton Ag and 3.9% Pb.
Geochemistry: A grab sample of siderite with arsenopyrite (?), tetrahedrite and pyrite assayed 0.04 oz/ton Au, 224.0 oz/ton Ag, 8.9% Pb, 0.2% Zn and 6.86% Sb.
Classification: Cretaceous magmato-hydrothermal, mesozonal intrusive-proximal silver-lead-zinc vein.
Comments: Related to Potato Hills hydrothermal system and probably zonally related to Dublin Gulch gold veins.
References:

INAC Reports: 1978 MIR, p. 14
Assessment Reports: 1977 trench report; 1978 trench report
Other: Green (1965, p. 20-22); Green (1972, p. 134-137); 1965 report by D.D. Campbell

17. MEILECKE (106 D 4)

Classification: Silver-lead vein.
References:

N.C.M.I.

19., 22. DUBLIN GULCH, ELLIS (106 D 4)

Geology: A quartz vein fissure system trends 060 degrees within and on the north flank of the Potato Hills Stock. The biotite granodiorite intrudes micaceous quartzite that is within a sequence of quartzite, schist, phyllite, marble and skarn. The veins are sub-parallel, en echelon gold and silver-bearing quartz-arsenopyrite-sphalerite-pyrite fissures exposed over a 2 km distance. A total of 29 veins or occurrences are described in a 1980 assessment report (090614) on 1979 fieldwork.
Geochemistry: Assay values for some are presented here:

VEIN OR OCCURRENCE	GOLD (oz/ton)	SILVER(oz/ton)
1) **Creek Zone West Fissure** Range of 6 grab samples from showing No.1: massive pyrite with arsenopyrite, minor sphalerite and chalcopyrite in a clay gouge zone.	0.126 to 0.474	1.00 to 5.88
Range of 6 grab samples from narrow gouge zone with coarse euhedral pyrite cemented by fine grained arsenopyrite.	0.094 to 0.156	
2) **Creek Zone East Fissure** Grab sample of massive pyrite, disseminated pyrite and arsenopyrite in a shear zone.	0.232	1.13
3) **Eagle Vein** Average of three grab samples of banded quartz-scorodite-arsenopyrite vein float.	1.724	0.61
4) **Scarp Vein** Sample of 10 cm vein of banded quartz-scorodite-arsenopyrite.	0.196	trace
5) **Henderson Vein** Range of ten chip samples across a banded quartz-scorodite-arsenopyrite vein with widths of 20 cm up to 75 cm.	0.316 to 1.744	0.52 to 5.51
6) **Blue Lead Shaft Vein** Average of three grab samples.	0.403	1.25
7) **Blue Vein** Chip sample across 50 cm of scorodite-quartz vein.	0.662	0.64
8) **Stewart Vein** Grab sample of banded limonitic quartz-scorodite vein.	0.068	0.06
9) **No. 15 Vein** Banded quartz-scorodite with arsenopyrite weathered to limonite.	0.064	0.04
10) **Cabin Vein** Best of 98 samples across 40 cm of banded quartz-scorodite-arsenopyrite vein.	2.902	5.72
11) **Klippert Vein** Range of 23 samples of quartz-scorodite-arsenopyrite with minor siderite and galena. Representative samples gave up to 0.78% Pb and 1.49% Zn.	0.010 to 0.182	0.03 to 0.76
Grab sample of siderite-galena with 32.9% Pb.	0.02	14.50

	GOLD (oz/ton)	SILVER (oz/ton)
12) **No. 45 Vein** Grab sample of limonitic quartz and scorodite with minor arsenopyrite.	1.318	3.70
13) **No. 5 Structure** Range in 38 samples of deeply weathered quartz -scorodite vein with minor siderite, jamesonite and arsenopyrite.	0.054 to 0.970 avg. 0.264	generally less than 0.5 and locally up to 10.8
14) **No. 17 West Vein** Average over 9 cm of quartz-scorodite-arsenopyrite in irregular fractures.	0.166	0.28
15) **No. 24 Vein** Two parallel veins of banded quartz, scorodite and arsenopyrite. Value for northerly vein averaged over average width of 15 cm.	0.076 to 1.042 avg. 0.207	0.02 to 0.30
Grab sample from southerly vein.	1.006	0.05
16) **No. 23 Vein** Sample across 12 cm wide vein of banded quartz-scorodite-arsenopyrite.	0.406	0.03
17) **Victoria Vein** Range and average of 14 surface samples of banded quartz-scorodite-arsenopyrite vein.	0.209 to 3.560 avg. 0.981	0.06 to 1.18 avg. 0.42
Underground sampling and computed grade value over average width of 28 cm along a 74 m drift for gold and a 49 m drift for silver.	0.743	0.39
18) **Aurum No.2 Vein** Twentry-three samples collected at surface from a quartz-scorodite-arsenopyrite vein with a central core of limonite-siderite-jamesonite; average calculated over average width of 27 cm.	0.044 to 2.844 avg. 0.421	0.17 to 20.78
Twenty-two samples collected underground.	0.035 to 3.540 avg. 0.291	
19) **Catto Vein** Twenty-seven samples from a quartz-scorodite-arsenopyrite-siderite-jamesonite-limonite-chalcedony vein across an average width of 13 cm.	avg. 0.885	avg. 0.56
20) **Green Vein** Grab sample of mine dump material of massive arsenopyrite and pyrite with minor jamesonite in a quartz boxwork.	0.178	1.02

	GOLD (oz/ton)	SILVER (oz/ton)
21) **Olive Vein** Grab sample of quartz-scorodite-arsenopyrite vein material from dump.	1.650	2.45
22) **Shamrock Vein** Grab sample of quartz-scorodite with massive arsenopyrite and pyrite from dump.	0.926	2.58
23) **Caracallen Vein** Grab sample of vein material from dump.	0.768	1.24
24) **C. B. No. 1 Vein** Ten samples of a quartz-scorodite-arsenopyrite vein with an average width of 58 cm.	0.078 to 0.748 avg. 0.122	0.12 to 6.05 avg. 1.55
25) **C. B. No. 2 Vein** Grab sample of a 5 cm quartz-scorodite vein.	0.294	0.61
26) **Tin Dome Occurrence** Grab sample of vein float containing quartz-scorodite with minor arsenopyrite and less than 0.01% Sn.	0.228	2.40

27) **Kuzmiski Occurrence**
Quartz-scorodite-arsenopyrite veins up to 50 cm wide in float boulders.

28) **JM Occurrence**
Quartz-scorodite-arsenopyrite showings with veins up to 10 cm wide.

29) **Road Occurrence**
Several quartz-scorodite-arsenopyrite occurrences.

Classification: Cretaceous magmato-hydrothermal, mesozonal intrusive-proximal gold-silver veins.
References:
INAC Reports: 1979-80 YGE, p. 238-239; 1982 YEG, p. 179-180; 1985-86 YEX, p. 293-296 (includes maps)
Assessment Reports: 090614
Other: Tempelman-Kluit, D.J. (1964)
More Recent References: 1988 YEX, p. 149 (assays)

20. POTATO HILLS (106 D 4)

Classification: Gold-silver vein.
References:
INAC Reports: 1971-72 MIR, p. 24-25
Other: Little (1959, p. 21-29, 34-36)

24. LUCKY STRIKE (106 D 4)

Geology: Gritty quartzite and quartz porphyry are cut by a north-trending fault along which are galena with quartz, siderite and secondary minerals. Broken schist fragments are common within the mineralized portion.
Geochemistry: A grab sample rich in galena assayed trace gold, 3.34 oz/ton Ag, 56.3% Pb and 14.1% Zn.
Classification: Cretaceous magmato-hydrothermal, mesozonal intrusive-distal silver-lead-zinc vein.
Comments: Also known as McQuesten Pass Showing.
References:
Green (1968, p. 137)

26. MCKAY HILL (106 D 6)

Geology: Amygdaloidal andesite and andesitic breccias overlie black, green and red slate. Mineralization consists of masses of quartz, calcite, galena, tetrahedrite and sphalerite in and at the borders of the (upper plate (?)) volcanic rock outcrops and at the contact with the underlying (lower plate (?)) slate. No mineralization has been determined in the slate. The galena has a foliated texture and tetrahedrite is present as porphyroblasts (?).
Production: Minor production in 1948 of 158 tons yielded 11.4 oz/ton silver and 74.1% lead.
Geochemistry: Sample analysis shows that none exceed one ounce of silver per one per cent lead and that the vein float on nearby Horseshoe Hill to the east has even lower silver to lead ratios. The silver values in tetrahedrite are relatively low. A sample of picked tetrahedrite from talus assayed 62.10 oz/ton Ag, 9.27% Pb and 15.04% Cu.
Classification: Cretaceous (?) magmato-hydrothermal (?), mesozonal intrusive-distal silver-lead-copper vein.
Comments: Situation looks very similar to the HORN in NTS 105 O (No. 8), i.e., volcanics bottomed by a thrust on top of sediments and replacement/vein mineralization with lots of calcite and some copper present. In the general area, where the thrust upper plate has been eroded away, some of the mineralization may be present as isolated float that cannot be related to the rocks it lies upon.
References:
Green (1968, p. 133-134); Bostock (1957, p. 539-543); Cockfield (1924, p. 22-28)

27. GREY COPPER HILL (106 D 6)

Geology: Ordovician to Silurian dolomite and limestone overlie Proterozoic orange weathering dolomite and are intruded by sills and dykes of pyroxene diorite. A 60 to 75 cm wide vein occupies a fault striking 350 degrees and dipping 78 degrees to the southwest. It consists of siderite, tetrahedrite and pyrite with some quartz, azurite and malachite.
Geochemistry: A sample of the 16 inches of the vein exposed assayed 52.0 oz/ton silver, though tetrahedrite-rich float carrying up to 1100 oz/ton silver was found nearby.
Classification: Cretaceous (?) magmato-hydrothermal (?), mesozonal intrusive-distal silver-copper vein.
Comments: Contact between Proterozoic and Ordovician rocks may be a thrust fault and mineralization may be related to fluid flow along a thrust surface and deposition in the brittle deformed upper plate rocks.
References:
INAC Reports: 1979-80 YGE, p. 240
Assessment Reports: 090568; 092670
Other: Green (1972, p. 133); Bostock (1957, p. 538-539)
More Recent References: 1988 YEX, p. 149

30. SILVER HILL (106 D 6)

Geology: The country rocks are calcareous or dolomitic sandstones within which are intercalated beds and thin layers of impure sandy limestone, all of the Proterozoic Gillespie Lake Group. Intrusive to the sandstone are several bodies of greenstone of Late Proterozoic age and overlying all are limestones of Ordovician - Devonian age. The deposits occur along short, transverse fissures through preferential replacement of and dissemination within the impure limestone beds of the Gillespie Lake Group above the greenstone. Mineralization consists of galena with subordinate sphalerite, and a little pyrite in a gangue of calcite and siderite.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc veins and replacement.
Comments: The contact between the Paleozoic carbonates and the underlying Proterozoic is probably a thrust fault and this may have been a fluid pathway. Mineralization appears restricted to the lower plate here as at Kathleen Lakes also. The age of the intrusive mafic rock is probably late Proterozoic.
References:

Campbell and Tipper (1971, p. 133); Bostock (1957, p. 536-538); Cockfield (1925, p. 1-18)

46. NAT (106 D 3)

Geology: Rusty to black oxidized limonitic rocks contain massive chalcopyrite and pods of galena.
Geochemistry: Grab sample of highly mineralized rubble assayed 128.30 oz/ton Ag, 6.15% Cu, 2.14% Pb and 0.57% Zn.
Classification: Silver-copper-lead-zinc occurrence.
Comments: Also known as the Lucky Bear property.
References:

Assessment Reports: 090626
Other: N.C.M.I.

47. BRAINE (BLENDE) (106 D 7)

Geology: Helikian rocks of the Gillespie Lake Group are intruded by diorite and gabbro dykes and lie immediately north of the major, south-dipping Dawson Fault Zone. The sedimentary rocks are orange weathering dolomite with interbedded argillaceous dolomite and lesser chert, shale and argillite. Mineralization is localized within a wide, steeply-dipping fault zone and consists of sphalerite-galena-pyrite-chalcopyrite and tetrahedrite matrix breccia hosted in and containing fragments of Gillespie Lake interbedded argillaceous and stromatolitic dolomite with minor chert interbeds, and similar composition fracture fillings therein. Most important of the ten mineralized zones is the No. 5 Zone where mineralization is poorly exposed on surface for over 800 m of strike, up to 47 m width and 300 m vertical depth.
Geochemistry: Trench sampling of the No. 5 Zone gave an average grade of 3.63% Pb, 4.32% Zn and 69.25 g/t Ag across a thickness of 13.75 m. Drilling in 1988 intersected a 86.2 m of 106.3 g/t Ag, 5.3% Pb and 3.0% Zn and 132.28m of 3.7% Pb, 1.8% Zn and 89.1 g/t Zg in two separate holes.
Classification: Cretaceous (?) magmato-hydrothermal mesozonal, intrusive-distal silver-lead-zinc-copper vein and breccia matrix.

References:

INAC Reports: 1975 MIR, p. 60; 1981 YEG, p. 195-196; 1983 YEG, p. 233-234; 1984 YEX, p. 155-157; 1985-86 YEX, p. 296

Assessment Reports: 090998; 091475; 092683; 092684

Other: Green (1972, p. 139); Godwin et al. (1988)

More Recent References: 1988 YEX, p. 149-152 (includes map and cross section by J.G. Abbott)

52. CLOUTIER (106 D 7)

Geology: Orange weathering dolomite of late Proterozoic age is intruded by a large gabbro dyke (Proterozoic?) and altered to tremolite skarn near the intrusive contact. Galena, sphalerite, chalcopyrite, pyrrhotite and pyrite occur in massive sulphide bands up to 15 cm wide within the altered dolomite. The mineralized zone has a true width of 5.5 ft., can be traced for 300 ft. and strikes 100 degrees with a dip of 27 degrees to the south.

Geochemistry: A chip sample of the main mineralized zone over a true width of 5.5 ft. assayed 0.003 oz/t Au, 1.57 oz/t Ag, 7.13% Pb, 2.61% Zn and 0.40% Cu. Within the latter interval, a sample of massive galena, sphalerite, chalcopyrite and pyrrhotite assayed 0.005 oz/t Au, 4.48 oz/t Ag, 20.6% Pb, 14.4% Zn and 0.64% Cu.

Classification: Hadrynian magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc-copper replacement.

Comments: The presence of the mineralization apparently restricted to the contact metamorphic halo around the gabbro dyke suggests that it is genetically related.

References:

Assessment Reports: 090084

Other: N.C.M.I.

57. ZAP (106 D 8)

Geology: The area is underlain by sedimentary rocks of late Proterozoic and lower Paleozoic age, including quartzite, dolomite (orange, grey and black weathering varieties), brown weathering shale and a black carbonaceous shale. Mineralization occurs in four different styles: 1) tetrahedrite, barite and galena in brecciated parts of the carbonaceous shale; 2) sphalerite and galena in brecciated grey and orange dolomite; 3) veinlets of calcite-sphalerite-galena in brown weathering shale and 4) veinlets and veins up to 15 cm wide of massive galena and sphalerite. The relationship of mineralization to major and minor faults is reported to be complex.

Geochemistry: Several mineralized intersections were encountered by diamond drilling: 1) DDH 79-4 - within highly fractured grey dolomite with sphalerite and galena fracture fillings, 13 ft. of 1.71% Pb, 5.25% Zn and 1.29 oz/ton Ag; 2) DDH 79-8 - within grey dolomite and sparry white carbonate dolomite breccia, a 33 ft. intersection of 1.68% Pb, 2.57% Zn and 0.83 oz/ton Ag and 16 ft. of 0.15% Pb, 1.42% Zn and 0.22 oz/ton Ag. Both intersections were in a coarse clastic rock with clasts of pyrite, dolomite and shale in a carbonate sand matrix bearing large amounts of disseminated fine-grained pyrite and less abundant disseminated sphalerite and galena.

Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein and breccia matrix.

Comments: Zones of tectonic deformation appear to be the loci for the mineralization.

References:

INAC Reports: 1978 MIR, p. 15-16; 1979-80 YGE, p. 241

Assessment Reports: 090582

58. JT (106 D 3)

Geology: Graphitic phyllite and dark grey to grey thinly bedded phyllitic quartzite or siltstone is intruded by sills and lens-like bodies of diorite and gabbro. The only mineralization reported on the property is tetrahedrite in a north-northwest striking quartz vein approximately 1 m wide. **Classification:** Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-copper vein.
Comments: Located a few km east of the Hanson Lakes Stock.
References:
INAC Reports: 1979-80 YGE, p. 241; 1982 YEG, p. 180
Assessment Reports: 090626; 090912; 060947

59. ARCTOS (106 D 16)

Geology: Helikian fine-grained clastic and carbonate rocks of the Quartet and Gillespie Lake Groups strike northwest, dip southwest and are complexly block faulted. They are cut by several zones of brecciation and host a number of fracture-controlled, spotty mineralized vein and pod-type showings with brannerite, cobaltite, erythrite, barite, bornite, chalcopyrite and malachite.
Geochemistry: Grab samples gave values up to 500 ppm Cr, 0.27% Co, 0.79% Cu, 10 ppm Pb, 150 ppm Ni, 3 to 775 ppb Au and greater than 5000 ppm Ba. A chip sample across 60 cm of chert assayed 0.237% U_3O_8.
Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related uranium-copper-gold veins and pods.
References:
INAC Reports: 1977 MIR, p. 44; 1978 MIR, p. 16; 1981 YEG, p. 196-197
Assessment Reports: 090821; 092668
More Recent References: 1988 YEX, p. 150

60. RAD (106 D 16)

Classification: Wernecke breccia, uranium-copper-gold.
References:
1981 YEG, p. 197

61. URSUS (106 D 16)

Geology: Several breccia bodies cut moderately metamorphosed and structurally complex rocks of Helikian age, i.e., fine-grained clastics with interbedded carbonates (Fairchild Group) and orange-weathering dolomite (Gillespie Group). Mineralized showings are either associated with breccia bodies or their alteration haloes. Most occur near a contact between siltstone and phyllite as isolated feldspathized pods within the breccias and/or altered siltstone. Mineralization is chalcopyrite and brannerite, where brannerite occurs along minor shears and fractures.
Geochemistry: Rock samples contained up to 250 ppm Mo, 14.0 ppm Ag, 50 ppm Zn, 70 ppm Ni, 1300 ppm Co and up to or greater than 10 000 ppm Cu, 5000 ppm Ba, 2500 ppm U and 5000 ppb Au.
Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related uranium-copper-gold veins.
References:
INAC Reports: 1977 MIR, p. 44; 1978 MIR, p. 16; 1981 YEG, p. 197
Assessment Reports: 090818

64. FACE (106 D 16)

Geology: Argillite and quartzitic argillite of Helikian age are intruded by a breccia body. Both the breccia and some of the surrounding argillite are highly carbonatized and mineralization consists of brannerite along fractures within a siliceous border phase of the breccia.
Geochemistry: Pitchblende-chalcopyrite-bearing float assayed 2.15% U_3O_8, 0.4% Cu and 100 ppm Ag.
Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related uranium-copper-silver veins.
References:

INAC Reports: 1976 MIR, p. 126; 1978 MIR, p. 17; 1981 YEG, p. 197-198
Assessment Reports: 090968; 092668
More Recent References: 1988 YEX, p. 150

67. PIKE (106 D 16)

Geology: Coarse breccia of Helikian age is in thrust fault contact with underlying younger Helikian Quartet Group sandstone and fine-grained clastics. The breccia consists mainly of carbonate- and hematite-altered sandstone fragments crosscut by veins of quartz, dolomite, specularite and barite and set within a matrix of hematite, chlorite and feldspar. Local concentrations of float indicate the breccia is mineralized at its base by chalcopyrite in disseminations and in small quartz-calcite veins, by coarse grains of brannerite in quartz veins and open fractures and by gold and brannerite in quartz veins.
Geochemistry: Abundant visible gold is reported from quartz vein float and samples with no visible gold assayed up to 69 g/t Au with several percent brannerite. Up to 0.5% Cu is also reported.
Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related copper-gold-uranium veins.
References:

INAC Reports: 1975 MIR, p. 63; 1985-86 YEX, p. 296-298 (includes map)
Assessment Reports: 091880
More Recent References: 1987 YEX, p. 212-213

69. ROD (106 D 1)

Geology: The "Dawson Thrust" fault separates early Paleozoic platform carbonates to the north from broadly time equivalent shales to the south. Fractures filled with galena and sphalerite occur close to the "Dawson Thrust" in silicified carbonate rocks.
Geochemistry: A 5 m channel sample along a trench on the best showing assayed 217 g/t Ag, 13.25% Pb and 1.15% Zn. Massive galena from a vein core assayed up to 79.20% Pb and 2340.28 g/t Ag.
Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc vein and breccia matrix.
References:

INAC Reports: 1977 MIR, p. 39; 1979-80 YGE, p. 242; 1984 YEX, p. 154
Assessment Reports: 090611; 090687; 091545

106 E

2. GREMLIN (106 E 2)

Geology: Fine-grained clastics of Helikian age are intruded by a breccia body which has altered and replaced some of the surrounding rocks. Chalcopyrite, pyrite and cobaltite are hosted in massive siderite lenses whereas pyrite is the dominant sulphide below the lenses as veins, stockwork and irregular massive pods.
Geochemistry: The highest assay reported is 3.85% Cu and 11.2 ppm Ag over 1 m, with one grab sample also assaying 0.09% Co.
Classification: Helikian tectono-hydrothermal, mesozonal salt (?) diapir-related copper-silver-cobalt veins.
References:

INAC Reports: 1975 MIR, 69-70; 1981 YEG, p. 183-184
Assessment Reports: 091436

106 F

6. VOLE (106 F 4)

Classification: Copper-cobalt-silver vein.
Comments: See OTTER (106 C, No. 60)
References:
INAC Reports: 1981 YEX, p. 203

115 A

3. KANE (MOHAWK & STE) (115 A 3)

Geology: Cretaceous granodiorite intrudes Pennsylvanian - Permian volcanic rocks and near their contact is a linear swarm of Oligocene porphyritic felsic dykes that are variably argillized. The main showing is a zone of intense argillic alteration and brecciation within a grey to buff weathering quartz-hornblende-feldspar porphyry dyke. Quartz stockwork occurs within the dyke and as a selvedge boundary at the contact of the altered intrusive. Sulphide minerals include galena, tetrahedrite, sphalerite, tennantite and pyrite with auxiliary stibnite, jamesonite and chalcopyrite.
Geochemistry: In one trench, the vein assayed 5347.4 g/t Ag, 3.84 g/t Au and 3.62% Pb; and the average grade of 7 trenches dug at intervals along the 180 m of exposed mineralized vein is 2076 g/t Ag and 3.15% Pb across 0.45 m.
Classification: Oligocene magmato-hydrothermal, epizonal, intrusive-hosted silver-gold-lead vein.
References:
INAC Reports: 1974 MIR, p. 140-141; 1979-80 YGE, p. 251; 1984 YEX, p. 166-168 (includes map)
Assessment Reports: 090519; 091593; 091609

7. BATES (IRON CREEK) (115 A 4)

Geology: A vein fault in andesite of the Mesozoic Mush Lake Group contains quartz, galena and pyrite.
Geochemistry: A 4 ft. channel sample assayed trace Au, 1.03 g/t Ag and 3.10% Pb.
Classification: Mesozonal silver-lead vein.
References:
Kindle (1953, p. 56)

9. CAVE (115 A 6)

Geology: Copper-silver vein.
References:
N.C.M.I.

25. FERGUSON (115 A 12)

Classification: Gold vein.
References:
Bostock (1936, p. 12; 1937, p. 11)

35. BURGER KING (115 A 3)

Geology: The Duke River Fault separates Upper Paleozoic (?) limestone and argillite intruded by gabbro and diabase sills to the west from Upper Triassic metasedimentary and metavolcanic rocks intruded by Cretaceous granodiorite and diorite stocks to the east. Extensive areas of quartz, sericite and pyrite veining occur along the fault zone.

Geochemistry: Chip samples from quartz veins and pyritic zones are mainly below 0.4 g/t Au, but one 3 m wide vein returned an assay of 1.1 g/t Au.
Classification: Mesozonal to epizonal gold veins.
References:

INAC Reports: 1984 YEX, p. 169; 1985-86 YEX, p. 306
Assessment Reports: 091620; 091816

115 B

1. PLUG (115 B 1)

Geology: Copper-silver occurrence.
References:
N.C.M.I.

2. KASKAWULSH (115 B 9)

Geology: Copper-silver occurrence.
References:
N.C.M.I.

7. TELLURIDE (115 B 16)

Geology: Intermediate volcanic rocks of Paleozoic (?) age host massive sulphide mineralization consisting of well layered, fine-grained pyrite with lesser sphalerite, chalcopyrite, galena, quartz and carbonate. The showing is 30 m by 1 to 2m in size.
Geochemistry: Average assays from the showing are about 5% Zn, 2% Cu, 0.5% Pb, 1.25 oz/ton Ag and 0.005 oz/ton Au. A mineralized float boulder assayed 5.30% Cu, 6.82% Zn, 0.01% Ni, 1.20 oz/ton Ag and 0.02 oz/ton Au.
Classification: Paleozoic (?) volcanogenic, exhalative copper-lead-zinc-silver massive sulphide.
References:
Assessment Reports: Private company report on diamond drilling CUB Project, CUB & ROG mineral claim groups, 1970, by M.E. Coates, Atlas Explorations Limited.
More Recent References: 1987 YEX, p. 229-230

115 F & G

11. WADE (115 G 6)

Geology: Upper Triassic Nikolai greenstone and Permian-Triassic pyroxene gabbro are overlain unconformably by nonmarine sediments and coal.
Geochemistry: Stream sediment, heavy mineral, soil and bulk rock geochemical sampling indicated anomalous gold (up to 31 000 ppb Au in stream sediment) within the Amphitheatre Formation and a paleoplacer origin was speculated. Base metal geochemical anomalies were also detected in the underlying rocks.
Classification: Copper-silver occurrence
References:
INAC Reports: 1985-86 YEX, p. 314-315
Assessment Reports: 091786

12., 13. CORK, GLEN (115 G 6)

Geology: Tuffaceous layers within the Permian Skolai Creek Group appear to be the main source of placer gold and copper mineralization in the creeks draining the property.
Classification: Gold-copper occurrence.
References:
INAC Reports: 1979-80 YGE, p. 256; 1983 YEG, p. 246; 1984 YEX, p. 178; 1985-86 YEX, p 315-316
Assessment Reports: 091796; 091864; 091585; 091175; 091495; 090499; 090655; 092529
Other: Read and Monger (1976)
Recent References: 1988 YEX, p. 165

26. GARLIC (115 F 9)

Geology: Volcanic and volcaniclastic rocks of the Permian Station Creek Formation are intruded by a Cretaceous gabbro to granodiorite plug and felsic dykes. Widespread silicification and gossans with overprinted carbonate alteration occur within the Station Creek Formation rocks in a roof pendant and in a 50 to 150 m wide band peripheral to the pluton.
Geochemistry: The highest result reported was 438 ppb Au from a 10 m wide chip sample across a weakly malachite-stained quartz carbonate vein.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold vein.
References:
1982 YEG, p. 194

27. LIBERTY (115 F 16)

Classification: Gold-copper-lead-zinc vein.
References:
Assessment Reports: 092544
Recent References: 1988 YEX, p. 167, 169 (assasy)

67. PICK (115 G 16)

Geology: Paleozoic (?) quartz-biotite schist and minor limestone are intruded by Cretaceous granodiorite and narrow felsic and aplitic dykes. Abundant quartz veins occur along the east border of the claims.
Geochemistry: A rock sample taken from a silicified shear zone in the schist contained 3100 ppb Au, 60 ppm Ag, 24 000 ppm As, 2300 ppm Zn, 900 ppm Pb and 150 ppm Cu.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver vein and replacement.
References:

INAC Reports: 1985-86 YEX, p. 316-317
Assessment Reports: 091838

92. ARN (115 F 15)

Classification: Copper-gold skarn.
References:

1988 YEX, p. 171 (assays)

115 H

14. HOPKINS (FRANKLIN CREEK) (115 H 7)

Geology: Granodiorite batholith and porphyry dykes intrude a metasedimentary sequence of quartz-mica gneiss, quartzite, marble and amphibolite. Two showings: 1) the Franklin Creek showing is a 15 m thick rusty weathering actinolite-diopside-rich skarn mineralized with chalcopyrite, pyrrhotite and magnetite in disseminations, bands and along fractures. 2) North of Franklin Creek 1 km, magnetite calc-silicate with disseminated and banded chalcopyrite in pods 10 to 70 cm thick and up to several metres long is along the contact of white marble and pale green gneissic siliceous calc-silicate.
Geochemistry: Three grab samples of cupriferous skarn gave an average value of 1043 ppb Au, 9 ppm Ag, 24 300 ppm Cu, 200 ppm Zn and 11 ppm Sn. The best diamond drill intersection is 1.94% Cu over 18.59 m.
Classification: Cretaceous to Eocene magmato-hydrothermal, mesozonal, intrusive-proximal copper-iron-gold skarn.
Comments: The granodiorite is the Aishihik Batholith for which there has been demonstrated a tectonic origin and allochthonous setting (Personal communication, Steve Johnston). The foregoing indicates that the skarn is probably related to the younger porphyry event.
References:
INAC Reports: 1978 MIR, p. 46; 1984 YEX, p. 14
Other: Morin (1981c, p. 98-104)

16. SEKULMUN (115 H 12)

Classification: Zinc-lead-(silver-antimony) skarn.
References:
Morin (1981c, p. 102)

17. ORLOFF (115 H 9)

Classification: Gold vein.
References:
N.C.M.I.

24. HATCH (115 H 12)

Geology: A leucocratic granite plug intrudes schist and quartzite; an aureole of skarn is developed near the intrusive contact. Two distinctive skarn types are present: calc-silicate and magnetite-pyrite-pyrrhotite. Sheeted gold-bearing quartz-sulphide veins are superimposed on an earlier extensive quartz vein molybdenite-bearing stockwork developed in the metasedimentary rocks.
Classification: Cretaceous to Eocene magmato-hydrothermal, mesozonal intrusive-proximal gold-silver veins, molybdenum vein stockwork and disseminations.
References:
1982 YEG, p. 198; 1984 YEX, p. 182

25. HIK (115 H 12)

Geology: An assemblage of interbedded felsic lava flows and pyroclastics of the late Cretaceous Carmacks Group unconformably overlies basement schists and gneisses of the Yukon Crystalline Terrane. A chalcedonic quartz vein is enclosed within a 400 m wide halo of very weak clay, and locally siliceous alteration. The vein is 170 cm wide and along with parallel secondary veins is over 600 m long with a possible strike length of up to 1600 m.
Geochemistry: Gold values from 19 grab samples of vein material averaged 454 ppb Au with a peak value of 2030 ppb Au.
Classification: Late Cretaceous magmato-hydrothermal, epizonal, intrusive-distal gold vein.
References:

INAC Reports: 1984 YEX, p. 183
Assessment Reports: 091555

29. AL (115 H 12)

Geology: Late Cretaceous volcanic rocks ranging from basalt to rhyolite are in contact with phyllite of the Yukon Crystalline Terrane. Several zones (up to several hundred square meters) of silicified metamorphic rock and breccias occur within the volcanic units. Quartz veinlets and veins up to 1 m in thickness are also present.
Geochemistry: Rock samples from the brecciated areas give values from 20 to 275 ppb Au, 3.7 to 5 ppm Ag, 10.6 to 13.8 ppm Sb and 200 to 500 ppm As. A grab sample of intensely silicified quartz schist and quartzite contained 2550 ppb Au. Grab samples of the quartz veins ranged from 20 to 390 ppb Au.
Classification: Late Cretaceous magmato-hydrothermal, epizonal, intrusive-distal gold replacement and veins.
References:

INAC Reports: 1984 YEX, p. 184
Assessment Reports: 091598

32. SHUT (115 H 4)

Classification: Gold vein.
References:

1987 YEX, p. 258

115 I

14. MINTO, DEF (115 I 11)

Geology: Chalcopyrite and bornite with minor gold and silver occur in strongly foliated and gneissic granodiorite of the Klotassin Batholith. They are disseminated in an irregular, flat-lying zone about 500 m long, up to 240 m wide and 15 m to 60 m thick.
Reserves: Estimated reserves are 6 550 200 tonnes of 1.86% Cu, 6.86 g/t Ag and 0.51 g/t Au.
Classification: Mesozoic disseminated copper-silver-gold occurrence.
References:
INAC Reports: 1976 MIR, p. 68-82; 1985-86 YEX, p. 328
Assessment Reports: 091654

15. PAL (115 I 11)

Classification: Copper-silver-gold-molybdenum occurrence.
References:
1974 MIR, p. 101

19. TAD (115 I 12)

Geology: Quartz-mica schist and quartzite of the Yukon Crystalline Terrane are intruded by Cretaceous granite and quartz monzonite and overlain by basalt, basalt-porphyry and breccia of the late Cretaceous Carmacks Group. All the above are intruded by quartz monzonite porphyry and biotite granite porphyry. A lead-zinc zone occurs in which disseminated galena and sphalerite are hosted in faulted, brecciated and argillically altered quartz monzonite porphyry and also a molybdenum zone with propylitically altered quartz monzonite porphyry bearing quartz- and quartz-molybdenite (rare pyrite and chalcopyrite) veinlets.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted lead-zinc-molybdenum-(gold-silver) dissemination and stockwork.
References:
INAC Reports: 1971-72 MIR, p. 77-79; 1985-86 YEX, p. 329
Assessment reports: 091906
Recent References: 1987 YEX, p. 264

21. FROG (LILYPAD, NEWT) (115 I 5)

Geology: Schist and gneiss of the Yukon Cataclastic Terrane are overlain by andesite flows, tuffs and breccias of the late Cretaceous Carmacks Group and intruded by a quartz-bearing monzonite to quartz monzonite stock of the Prospector Mountain Suite. The quartz monzonite is moderately to strongly altered to quartz-sericite and contains abundant quartz veins. The most significant mineralization is a swarm of steeply dipping veins that strike north-northeast and range up to several metres in width and up to several hundred metres in length. They contain silver- and gold-bearing sulpho-salts, galena and chalcopyrite in a pyrite-quartz-carbonate gangue with locally abundant specular hematite and tourmaline.
Geochemistry: A galena sample from one of the veins assayed 69.0% Pb and 3361 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, volcanic-hosted silver-lead veins.

References:

INAC Reports: 1969-70 MIR, p. 73; 1971-72 MIR, p. 58; 1979-80 YGE, p. 261; 1981 YEG, p. 216; 1982 YEG, 201-202; 1983 YEG, p. 252
Assessment reports: 090741; 090975; 091435
Other: Payne et al. (1987, p. 110-111)

23. CASH (115 I 5)

Geology: Cretaceous feldspar porphyry dykes and plugs intrude Jurassic to Cretaceous intrusive, subvolcanic and volcanic rocks. A copper-molybdenum porphyry deposit with a Pb-Zn-Ag-Au halo is associated with the Cretaceous feldspar porphyry dykes and plugs. Five gold anomalies have been outlined on the property.
Geochemistry: Linear gold anomalies have been determined and chip samples of associated pyritic quartzite assayed up to 0.38 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted copper-molybdenum-(gold) stockwork and dissemination.
References:

INAC Reports: 1985-86 YEX, p. 331-333 (includes map)
Other: Payne et al. (1987, p. 111-114 includes map)

24. KLAZAN (115 I 6)

Geology: A 4 by 1.5 km elliptical body of Cretaceous welded rhyolitic tuff and tuff breccia and associated plugs and dykes is completely surrounded by Jurassic syenite and appears to be filling a collapsed caldera. Narrow quartz-feldspar porphyry ring dykes cut through the surrounding syenite. The main gossan covers a quartz stockwork within the pyroclastic rocks associated with strong clay alteration. The zone of oxidation extends to a depth of 10 to 40 m with pyrite and minor arsenopyrite, molybdenite, chalcopyrite, sphalerite and galena below.
Geochemistry: The better drill intersections include 15 m of 0.17% Cu, 3 m of 0.16% Cu and 0.68% MoS_2 and 15 m of 787 ppb Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-molybdenum-gold stockwork and dissemination.
References:

INAC Reports: 1969-70 MIR, p. 87-88; 1975 MIR, p. 136-137; 1976 MIR, p. 172-173; 1981 YEG, p. 217; 1982 YEG, p. 202; 1985-86 YEX, p. 333-334
Assessment Reports: 090974; 091438; 091819
Other: Carlson (1987, p. 70)

26. REVENUE (115 I 6)

Geology: Granodiorite to granite of the Cretaceous Dawson range Batholith intrudes metasedimentary rocks and is intruded by a linear intrusive breccia body which is highly kaolinized and contains granitic clasts up to 10 cm in diameter. Pyrite occurs throughout as disseminated euhedral crystals and as angular fragments. A broad zone of silicification and pyritization with associated weak argillic alteration surrounds a stronger phyllic zone adjacent to the breccia. Massive chalcopyrite and pyrite occur as a pod in the centre of the breccia, and polymetallic gold, silver, copper and tungsten mineralization occur in structural zones within the breccia. The complex as a whole was originally considered a porphyry-type target for Cu and Mo.
Geochemistry: The following metal values reflect the variety of mineralization within the complex:

1) -140 ft. drill intersection of 0.12% Cu and 0.03% MoS_2;
2) -3.4 m trench ran 0.67 oz/ton Au, 3.43 oz/ton Ag and 1.33% Cu;
3) -36.6 m drill intersection of 0.41 g/t Au, 5.83 g/t Ag, 0.23% Cu and 0.04% WO_3;

No. 18 sample by Morin contained 633 ppb Au, 4.0 ppm Ag 1203 ppm Cu, 161 ppm Pb, 61 ppm Zn, <1 ppm Cu, 250 ppm F, 1580 ppm Mn, 153.0 ppm As, <5 ppm Se, 7.7 ppm Sb, <10 ppm Te, 450 ppm Ba, 35 ppb Hg, <1 ppm Tl, <10 ppm B, <10 ppm Sn, 55 ppm Bi, 18 ppm W, 2 ppm Mo, 0.05% Na, <2.0 ppm Br, 4.7% Fe, 7.9 ppm Th and 18.0 ppm U.
Sample Description:
18 - Whirlwind pup show; quartz-calcite-pyrite vein with white calcite veinlets
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted copper-molybdenum stockwork and dissemination and Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-gold-silver-tungsten breccia matrix and dissemination.
References:

INAC Reports: 1969-70 MIR, p. 79-82 (includes map); 1974 MIR, p. 114-115; 1978 MIR, p. 47; 1981 YEG, p. 217
Assessment Reports: 090854; 092131; 092609
Other: Carlson (1987, p. 71-72); Green and Godwin (1964, p. 29); Green (1966, p. 31-33); Findlay (1969a, p. 38-39); Findlay (1969b, p. 26)
Recent References: 1988 YEX, p. 179 (assays, drilling)

29. LIL (115 I 3)

Geology: Gold bearing quartz veins are reported to have been discovered by P.F. Guder in this area.
Classification: Gold vein.
References:

Carlson (1987, p. 73)

30. CARIBOU CREEK (115 I 6)

Geology: Big Creek Syenite is cut by quartz-feldspar porphyry dykes of the Mount Nansen Suite (?) and overlain by fluvioclastic sediments of the Caribou Creek Conglomerate. Quartz veins and stockwork and vuggy chalcedony veins cut all rock types and are mineralized with gold. A flat-lying silicified breccia zone at the contact of graphitic siltstone and underlying granite, is at least 2.7 m thick and 91.4 m long.
Geochemistry: Analyses of samples collected by Emond are presented below.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
19	GT 90 000	31.2	25	149	47
20	110	1.1	7	133	59
21	60	0.5	5	105	31

SAMPLE	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
19	LT 1	270	121	108.0	LT 5
20	LT 1	400	109	43.0	LT 5
21	LT 1	380	61	24.0	LT 5

	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
19	59.7	LT 40	620	35	1
20	79.3	LT 10	1400	85	LT 1
21	18.0	LT 10	1100	25	3
	B ppm	**Sn ppm**	**Bi ppm**	**W ppm**	**Mo ppm**
19	21	LT 10	3	3	10
20	25	LT 10	7	2	17
21	73	LT 10	7	4	2
	Na %	**Br ppm**	**Fe %**	**Th ppm**	**U ppm**
19	LT 0.08	LT 2.0	0.5	4.0	LT 2.3
20	0.18	4.0	0.6	0.8	1.3
21	0.14	LT 2.0	0.9	7.5	4.7

Sample Description:
19 - black carbonaceous siltstone cut by anastomosing white quartz veinlets with cockscomb texture and quartz crystal-lined cavities;
20 - chalcedony breccia with silicified clasts of granite (?) or sandstone (?); quartz crystal-lined cavities common;
21 - Pale creamy green, argillized and silicified medium- to coarse-grained equigranular granitoid rock with a weakly developed quartz vein stockwork;
Geochemistry: Drilling in 1988 intersected 95.8 g/t Au over 2.9 m including 2071.5 g/t Au over 10.2 cm. Assays from 5 holes averaged 40.8 g/t Au over 2.9 m.
Reserves: Geological reserves were estimated at 50 000 oz Au and a mineralized horizon extends over strike length of 500 ft. with a variable width of up to 12 ft. (average 8-9 ft.) (George Cross Newsletter, May 1989)
Classification: Cretaceous magmato-hydrothermal, shallow to surface volcanic-associated gold-silver veins, stockwork and hydrothermal vent breccia (?).
References:
INAC Reports: 1974 MIR, p. 118-119
Assessment Reports: 092648
Other: Bostock (1939, p. 15-16); Carlson (1987, p. 73-74)
Recent References: 1988 YEX, p. 1796

32. RED FOX (FREEGOLD) (115 I 6)

Geology: Quartzite is intruded by numerous dykes of porphyritic rhyolite and a quartz-sulphide vein is located along a quartzite-dyke contact. The vein contains lenses of galena, sphalerite and chalcopyrite which are hosted in a mixture of white and bluish grey quartz with minor sulphides.
Geochemistry: A surface sample of massive galena reportedly assayed 70% Pb and 4460 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal silver-lead vein.
References:
INAC Reports: 1985-86 YEX, p. 334-336
Assessment Reports: 091896
Other: Morin (1981a, p. 68-84); Johnston (1937); Carlson (1987, p. 74-75)

33. ANTONIUK (115 I 6)

Geology: Granodiorite is intruded by a 78 Ma quartz porphyry rhyolite plug 850 m long by 350 m wide. Within the rhyolite are country rock clasts ranging from a hundred m to a few mm across. Pebble breccia with rhyolitic matrix and rounded clasts of syenite, granodiorite, schist and other country rock is abundant and forms dykes intrusive into the rhyolite and surrounding country rock. Anomalous Au and As soil geochemistry has outlined an area 425 m by 375 m where the porphyry complex is brecciated, highly altered and cut by quartz veins with arsenopyrite, pyrite, chalcopyrite, tetrahedrite and sulphosalts.
Reserves: In 1987, drill-indicated open pittable reserves (0.5 g/t Au cutoff) are estimated at 3 877 900 tonnes grading 1.16 g/t Au (waste:ore = 0.77) including 2 783 900 tonnes of oxide ore grading 1.04 g/t Au (waste:ore = 0.21).
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted gold-silver veins, dissemination and breccia.
References:

INAC Reports: 1975 MIR, p. 139-142; 1979-80 YGE, p. 261; 1985-86 YEX, p. 336
Assessment Reports: 092161
Other: McInness (1987); Carlson (1987, p. 88); Morin (1981a, p. 68-84)
Recent References: 1988 YEX, p. 179-180

34. LAFORMA (FREEGOLD) (115 I 6)

Geology: Biotite granodiorite is intruded by andesite porphyry, quartz-feldspar porphyry and rhyolite porphyry dykes and is cut by two sets of steeply dipping fracture systems and shear zones striking northeast and northwest, respectively. The former system contains most of the important vein systems, especially the 'G-3', a vertical vein up to 2.4 m wide that has been explored along a strike length of 405 m and over a vertical range of 300 m. The vein is made up of brecciated bluish grey and white quartz and fine-grained disseminated pyrite.
Reserves: As of March, 1984, drill indicated reserves diluted to a 1.5 m minimum mining width are 180 000 tonnes grading 11 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver vein.
References:

INAC Reports: 1974 MIR, p. 116-117; 1975 MIR, p. 139-142; 1983 YEG, p. 254-255
Other: Johnston (1937, p. 13-16); McInness (1987); Morin (1981a, p. 68-84); Green (1966, p 29-31); Findlay (1967, p. 29)

35. EMMONS HILL (115 I 6)

Geology: Biotite-quartz-feldspar gneiss is intercalated with amphibolite and minor feldspathic quartzite and intruded by aplite and pegmatite dykelets, and feldspar-hornblende porphyry and quartz porphyry dykes. These rocks are cut by a northwest-trending quartz vein and vein breccia with stibnite, pyrite, barite and galena.
Geochemistry: Assays up to 24 g/t Au, 5.5 g/t Ag and 3.6% Sb were reported.
Classification: Cretaceous magmato-hydrothermal, epizonal, intrusive-proximal gold-silver-antimony-barite veins.
References:

INAC Reports: 1969-70 MIR, p. 78-79
Other: Carlson (1987, p. 77); Morin (1981a, p. 68-84); Johnston (1937, p. 19-20)
Recent References: 1988 YEX, p. 180

37. TINTA HILL (115 I 6, 7)

Geology: Klotassin granodiorite is cut by a steeply-dipping east-west-trending shear along which a quartz vein up to 1.2 m wide is emplaced. The vein is quartz-rich with galena, sphalerite and minor tetrahedrite and chalcopyrite. Wall rocks are sheared with weak potassic and phyllic envelopes and disseminated pyrite and chalcopyrite.
Reserves: Indicated reserves have been estimated at 516 000 tonnes grading 220 g/t Ag, 4.1 g/t Au, 7.2% Pb, 2.6% Zn and 0.4% Cu.
Classification: Cretaceous magmato-hydrothermal, mesozonal gold-silver-lead-zinc-copper vein.
References:

INAC Reports: 1969-70 MIR, p. 85; 1973 MIR, p. 37-38; 1974 MIR, p. 120-121; 1976 MIR, p. 174-177 (includes map)
Other: Carlson (1987, p. 78); Morin (1981, p. 68-84); Bostock (1936b, p. 53-56); Skinner (1962, p. 35-36); Findlay (1969a, p. 34)
Recent References: 1988 YEX, p. 180

39. BROWN - MCDADE (115 I 3)

Geology: The Casino granodiorite of the Dawson Range Batholith is cut by a strong, northwest-trending shear zone up to 20 m wide. The zone contains irregular lenses of grey quartz with pyrite and arsenopyrite, and very minor chalcopyrite, galena, tetrahedrite, sphalerite and stibnite.
Reserves: In 1965, proven and probable reserves were calculated at 29 158 tonnes of 20.9 g/t Au and 184.8 g/t Ag, and an additional 70 602 tonnes of indicated reserves with comparable grades and 20 000 tonnes of possible reserves. In 1987, oxide reserves were estimated at 727 000 tonnes grading 7.9 g/t Au and 62 - 103 g/t Ag. In 1988, open pit and underground reserves were recalculated for mill processing. They were 187 212 proven and possible tonnes of well oxidized open pittable, ore grading 9.42 g/t Au and 125.0 g/t Ag; and 390 202 tonnes proven and possible underground reserves grading 12.91 g/t Au and 232 g/t Ag. The underground figure includes 144 000 tonnes of proven reserves in the WEBBER and HUESTIS.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
12	814	20.4	61	2682	139
13	21 600	44.8	911	4740	10 527
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
12	1	300	119	2130.0	GT 11
13	140	65	6003	GT 9000.	GT 24
	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
12	213.0	LT 44	1700	85	4
13	2930.0	LT 160	LT 380	230	1
	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
12	43	LT 10	15	9	LT 3
13	23	LT 10	19	LT 38	LT 25

	Na %	Br ppm	Fe %	Th ppm	U ppm
12	0.08	19.0	2.0	3.5	LT 0.6
13	LT 0.56	LT 360.0	5.9	LT 2.1	LT 4.6

Sample Description:
12 - BROWN MCDADE: quartz breccia vein type of mineralization; white quartz and pyrite brecciated and veined by matrix bluish grey cryptocrystalline quartz; some colourless chalcedony in matrix also; intense boxwork developed; underground sample;
13 - BROWN MCDADE: quartz vein zoned from wallrock through vein breccia with white quartz clasts in bluish grey matrix (4 cm wide) into massive sphalerite-galena-quartz (3 cm wide) into central colourless to very pale grey chalcedony (1 cm wide); underground sample;
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver-lead-zinc veins.
References:
Other: Carlson (1987, p. 79-80); Findlay (1969a, p. 35-38); Findlay (1969b, p. 23-25)
Recent References: 1988 YEX, p. 180-183 (cross section); 1987 YEX, p. 266-267

40. MT. NANSEN (WEBBER, HUESTIS) (115 I 3)

Geology: Metasedimentary schist and gneiss are intruded by hydrothermally altered quartz-feldspar porphyry dykes and plugs. These rocks are cut by northwest-trending veins (Webber and Huestis) which dip 85 degrees to the northeast. The veins consist of quartz lenses containing arsenopyrite, pyrite, sphalerite, galena, stibnite and native gold, as well as the silver-bearing minerals freislebenite, acanthite, andorite, tetrahedrite and native silver.
Production: Short term operation over 8 months in 1968 and 1969 saw production of 77 200 g Au, 2 380 500 g Ag and 49 270.5 kg Pb from 16 300 tonnes milled. Also during 1975 and 1976, a total of 5838 tonnes of ore was milled grading 10 g/t Au, 240 g/t Ag, 1% Pb and 1% Zn.
Reserves: Post-mining proven and probable reserves are 77 841 tonnes grading 15 g/t Au and 312 g/t Ag in the Huestis vein and 53 140 tonnes grading 11.7 g/t Au and 661 g/t Ag in the Webber vein.
Geochemistry: In January, 1989 total reserves were estimated at 577 414 tonnes grading 11.78 g/t Au and 197.0 g/t Ag. This includes 187 212 proven and possible tonnes of open pittable oxide ore grading 9.42 g/t Au and 125.0 g/t Ag in the BROWN-MCDADE; and 390 202 tonnes proven and possible underground reserves 12.9 g/t Au and 232.0 g/t Ag. All three zones are still open along strike and to depth.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
10	9360	GT 50.0	57	2336	591
11	2370	26.2	284	1215	121
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
10	8	190	250	5710.0	LT 5
11	1	200	123	2480.0	LT 11

	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
10	485.0	LT 39	1300	260	2
11	196.0	LT 46	200	280	3
	B ppm	**Sn ppm**	**Bi ppm**	**W ppm**	**Mo ppm**
10	48	LT 10	19	6	20
11	44	13	21	7	4
	Na %	**Br ppm**	**Fe %**	**Th ppm**	**U ppm**
10	LT 0.09	47.0	1.9	1.4	LT 1.0
11	0.05	19.0	3.5	3.5	LT 0.6

Sample Description:
10 - FLEX vein: 8 cm wide white quartz vein brecciated by later bluish dark grey quartz; less than 3% fine-grained sulphides (pyrite), scorodite present along with a moderately developed boxwork; some chalcedonic quartz at vein margin;
11 - FLEX vein: trench 87-10, 0 + 20 E; chip sample across 5 m; abundant argillized vein gouge and brecciated and mineralized bluish-grey quartz
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver-lead-zinc veins.
References:
INAC Reports: 1969-70 MIR, p. 88-89; 1975 MIR, p. 131-132; 1976 MIR, p. 167-168; 1985-86 YEX, p. 337
Assessment Reports: 091894; 092122; 092701
Other: Carlson (1987, p. 80-81); Sawyer and Dickinson (1976); Green and Godwin (1962, p. 23-24); Green and Godwin (1964, p. 26-28); Green (1965, p. 32-34; Green (1966, p. 34-38); Findlay (1967, p. 30-31); Findlay (1969a, p. 35-38); Findlay (1969b, p. 23-25)
Recent References: 1987 YEX, p. 266-267; 1988 YEX, p. 180-183

42. ESANSEE (MAY, TAWA) (115 I 4)

Geology: The Casino granodiorite of the Dawson Range Batholith is cut by a northwest-trending, steeply dipping shear zone about 1.6 m wide. The zone is sparsely mineralized with galena, arsenopyrite, sphalerite and pyrite over a strike length of 750 m.
Geochemistry: Selected sulphide-rich samples average 2070 g/t Ag, 44.7% Pb, 36.3 g/t Au and 1.3% Zn. The best channel sample assayed 15 g/t Au and 483 g/t Ag over 1.8 m. Drilling produced erratic results which ranged up to 25 g/t Au and 51.4 g/t Ag over 1.5 m.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver-lead-zinc veins.
References:
INAC Reports: 1969-70 MIR, p. 90-91; 1979-80 YGE, p. 261-262; 1981 YEG, p. 217; 1985-86 YEX, p. 338-339
Assessment Reports: 090692; 090909; 091889; 092585
Other: Carlson (1987, p. 82); Findlay (1969b, p. 25)
Recent References: 1988 YEX, p. 183 (includes map)

43. DIVIDE (AU EXTENSION) (115 I 3)

Geology: Monzonite and syenite of the Big Creek Meta-Plutonic Suite are intruded by rhyolitic porphyries and syenitic to granitic hornblende porphyries. These porphyries host quartz veins, associated clay-limonite-hematite alteration zones and felsic dykes. Gold and silver are associated with east- to northeast-trending alteration zones and lensy brecciated quartz veins. Quartz veins are commonly 40 cm wide and 200 m long.
Geochemistry: Rock samples from trenches assayed up to 98.5 g/t Au and 192.0 g/t Ag, the best values from drusy limonitic quartz veins. Diamond drilling intersected several mineralized quartz veins and alteration zones which contained up to 35.8 g/t Au over 40 cm and 18.4 g/t Au over 1m.
Classification: Cretaceous magmato-hydrothermal, epizonal, intrusive-proximal gold-silver veins.
References:

INAC Reports: 1974 MIR, p. 126; 1985-86 YEX, p. 339-340
Assessment reports: 091726; 091907; 092632
Other: Carlson (1987, p. 83)
Recent References: 1988 YEX, p. 183

44. MALONEY (115 I 4)

Geology: Paleozoic (?) schist, gneiss, chert, limestone and skarn are intruded by Cretaceous dykes and plugs of quartz diorite, biotite-hornblende porphyry, quartz and quartz-feldspar porphyry and quartz porphyry breccia, most or all of which are a subvolcanic facies of Mount Nansen volcanism. A hydrothermal system centred about a quartz diorite stock is responsible for quartz vein stockwork, silicification, kaolinization, sericitization, bleaching and associated mineralization. Mineralization consists of pyrite, fluorite, magnetite, chalcopyrite, molybdenite, arsenopyrite, jarosite, azurite, malachite and hematite along with traces of scheelite and tourmaline. Sulphides are rare at surface and the rocks are oxidized to a depth of about 60 m.
Geochemistry: Six 1976 diamond drill holes returned 3 m intersections with 1000 - 2000 ppm Cu, 1 - 3 ppm Ag and 100 - 250 ppb Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted copper-molybdenum-silver-gold stockwork and dissemination.
References:

INAC Reports: 1969-70 MIR, p. 76-78; 1976 MIR, p. 168-172 (includes map); 1985-86 YEX, p. 340-341
Assessment Reports: 091810

52. LONELY (115 I 3)

Geology: Andesitic porphyry and tuff of the cretaceous Mount Nansen Suite are intruded by a plug and dykes of rhyolite porphyry. A related granodiorite intrusion occurs to the south and granodiorite and minor syenite dykes cut all of the other units. The showing is in the 0.9 by 1.0 km rhyolite plug and has weathered to a prominent gossan. The rhyolite is commonly clay and carbonate-altered and locally sericitized and silicified. Disseminated pyrite and pyrrhotite are widespread and malachite and chalcopyrite are localized. Quartz stringers from 1 mm to 2 cm wide are ubiquitous and were emplaced along shear and breccia zones in the rhyolite.
Geochemistry: Grab samples of quartz stringers in the rhyolite porphyry plug returned up to 1650 ppb Au and altered rhyolite up to 14.8 ppm Ag.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver vein and dissemination.

References:
INAC Reports: 1985-86 YEX, p. 342-343
Assessment Reports: 091917; 092584
Other: Carlson (1987, p. 83-84)
Recent References: 1988 YEX, p. 183-189 (includes map)

56. GOULTER (115 I 3)

Geology: A northwest-trending mineralized structure is apparently on strike with the Brown-McDade veins and contains a similar style of mineralization. Bornite float is reported to have been found by nearby placer miners.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated precious and base metal veins.
References:
INAC Reports: 1985-85 YEX, p. 346-347
Assessment Reports: 092153; 092588
Other: Carlson (1987, p. 84)
Recent References: 1987 YEX, p. 270; 1988 YEX, p. 186 (assays)

64. NUCLEUS (115 I 6)

Geology: Coarse-grained granodiorite and metasedimentary rocks and rare volcanic rocks are intruded by felsic to intermediate porphyritic dykes and intrusive breccias. The main area of gold mineralization is a zone of brecciated, argillically-altered quartz-feldspar porphyry dykes and associated narrow chalcedony veins and stockwork. The zone has been traced 300 m along the north-northwest strike and broad halos of lower grade mineralization occur in the wallrocks which are bleached and show intense sericite and clay alteration. Sulphides have been almost completely oxidized to a depth of 15 to 60 m and fine-grained pyrite, arsenopyrite and local galena, sphalerite, chalcopyrite and magnetite occur below the oxide zone.
Reserves: A large low grade deposit outlined in 1988 consists of 4.1 million tonnes of oxide reserves grading 1.06 g/t Au.
Geochemistry: Assays up to 3.4 g/t Au with an average grade of 1.4 g/t Au over 15 m are reported. Samples collected by J. Morin:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
14	180	LT 2	33	139	141
33	398	1.3	99	51	15
51	5950	3.3	12	445	296
	Cd ppm	F ppm	Mn ppm	As ppm	Se ppm
14	LT 1	310	95	375.0	LT 5
33	LT 1	300	21	243.0	LT 5
51	2	170	54	2380.0	LT 10
	Sb ppm	Te ppm	Ba ppm	Hg ppb	Tl ppm
14	60.6	LT 10	790	30	4
33	27.9	LT 10	2300	20	3
51	107.0	LT 39	3200	2100	3

	B ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
14	47	11	9	5	2
33	31	LT 10	15	6	3
51	100	LT 10	13	15	9

	Na %	Br ppm	Fe %	Th ppm	U ppm
14	0.10	3.9	1.4	11.0	3.3
33	0.28	3.6	1.9	13.0	3.1
51	LT 0.05	20.0	1.0	7.0	0.7

Sample Description:
14 - Vuggy pale creamy grey chalcedony and quartz matrix breccia with angular, equant clasts of siliceous rock (porphyry?) and minor phyllite (main trench);
33 - Composite sample of oxidized, silicified and argillized rhyolite porphyry with quartz vein stockwork (main trench);
51 - Vuggy argillized and silicified breccia with clasts of country rock (schist) and porphyry (main trench)

Reserves: 4.1 million tonnes of oxidized material grading 1.06 g/t Au.

Classification: Cretaceous magmato-hydrothermal, epizonal, intrusive-proximal gold veins, stockwork and dissemination.

References:

INAC Reports: 1974 MIR, p. 114-115; 1979-80 YGE, p. 262; 1981 YEG, p. 217; 1982 YEG, p. 202; 1984 YEX,p.189; 1985-86 YEX, p. 343-344

Assessment Reports: 091804; 091882; 091600; 091508; 091439; 090973; 090739

Other: Carlson (1987, p. 85)

Recent References: 1988 YEX, p. 186-187 (drilling, assays)

67. NIT (115 I 12)

Geology: Carbonaceous quartz schist and quartzite of the Yukon Crystalline Terrane are intruded by granite and alaskite of the Cretaceous Coffee Creek Batholith and by a subvolcanic quartz-feldspar porphyry plug and dykes coeval with the Carmacks Group volcanism. Chalcopyrite is locally disseminated in granite.

Geochemistry: Soil and rock fragment samples delineated three anomalous areas, one of which is 500 m X 200 m along a granite-feldspar porphyry contact and generated maximum values of 1020 ppb Au, 14 ppm Ag, 770 ppm As, 414 ppm Pb, 550 ppm Zn and 121 ppm Cu.

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-(gold-silver) dissemination.

References:

INAC Reports: 1981 YEG, p. 218; 1985-86 YEX, p. 344-345

Assessment Reports: 090972; 091803

69. ZIT (115 I 6)

Geology: Metasedimentary rocks are intruded by foliated granodiorite and cut by a porphyry stock and dykes with accompanying weak hydrothermal alteration, brecciation and quartz veining. A hydrothermal system with a weak potassic core surrounded by phyllic and argillic zones is developed concentric to a 200 by 500 m porphyry stock. Mineralization is best developed in the phyllic zone and includes trace to 5% pyrite with traces of chalcopyrite, malachite, azurite, molybdenite, pyrrhotite and arsenopyrite.
Geochemistry: Limonitic schist and quartz fragments from a hand trench contained 760 ppb Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted copper (-gold) dissemination and vein stockwork.
References:

INAC Reports: 1981 YEG, p. 218-219; 1985-86 YEX, p. 345-346
Assessment Reports: 091823; 091895
Other: Carlson (1987, p. 86)

70., 71. PANTHER, RAINBOW (PITTS) (115 I 12)

Geology: Gneiss and schist of the Yukon Crystalline Terrane are intruded by Cretaceous quartz monzonite and overlain by mafic to intermediate pyroclastic rocks of the late Cretaceous Carmacks Group, all of which are intruded by coeval hypabyssal subvolcanic syenite plugs. The rocks are on the northeast side of the Big Creek Fault and host several zones of silicification, argillization, brecciation and shearing along a linear northerly trend. Chalcedony is present as massive veins, breccia matrix, pervasive silicification and layered paleo-hot spring pool sinter.
Geochemistry: Rock samples have given the following maximum values: 5.5 g/t Au, 270 ppm As, 66.0 ppm Sb and 740 ppb Hg.
Classification: Cretaceous magmato-hydrothermal, shallow to surface gold vein and hydrothermal vent breccia matrix.
Comments: There may be a relationship to an apical radial structure from the Prospector Mountain Laccolith to the south or to the TAD porphyry system to the west.
References:

INAC Reports: 1975 MIR, p. 142-144; 1983 YEG, p. 253
Assessment Reports: 091530
Other: Morin (1981, p. 68-84)

81. J. BILL (115 I 3)

Geology: Andesite and basalt flows, volcaniclastics and subvolcanic diorite plugs of the Mount Nansen Suite are intruded by Cretaceous granodiorite and younger rhyolite sills and dykes. Major north-, northwest-trending faults host associated quartz-galena-sphalerite sulphide veins and those cutting granodiorite are pervasively altered and associated with wide zones of alteration of the host rock to sericite, clay, carbonate, chlorite and silica. Veins are commonly less than 4.6 m thick and occur in great numbers in zones 31 to 62 m wide.
Geochemistry: Rock chip samples from trenches assayed up to 6.3 g/t Au and up to 292 g/t Ag, commonly with associated highly anomalous values of Pb, Zn and As.

Analyses of samples collected by Morin and Emond are presented below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
56	30	9.5	20.0	360	50.0
57	250	26.0	33.0	1300	240.
58	1800	5.98opt	33.0	0.51 %	210.
59	580	56.0	210.	1.12 %	790.
60	740	39.0	360.	2000	1500.
61	44	1.5	6.5	120	29.0
62	2200	10.10opt	300.	0.85 %	1.83 %
63	140	21.0	11.0	170	84.0
64	450	11.00opt	160.	0.55 %	1200.
	Cd ppm	Mn ppm	As %	Sb ppm	Ba ppm
56	LT 1	120	0.17	100.	340
57	2	220	0.52	180.	800
58	3	220	1.60	400.	460
59	28	490	1.09	490.	280
60	64	4.13 %	0.63	310.	360
61	LT 1	160	NIL	50.0	600
62	520	580	2.35	670.	280
63	3	400	490ppm	46.0	200
64	24	320	0.35	660.	340
	Hg ppb	Sn ppm	Bi ppm	W ppm	Mo ppm
56	40	LT 3	INF	8	2
57	150	LT 3	INF	5	5
58	380	20	INF	7	9
59	260	60	INF	5	7
60	210	15	INF	2	6
61	90	3	INF	1	3
62	120	40	INF	25	8
63	50	LT 3	0.5	4	3
64	400	17	INF	11	4

Sample Description:
56 - Brecciated quartz vein from Trench 1;
57 - Breccia with quartz and rhyolite clasts in chalcedony matrix;
58 - Breccia with quartz clasts and minor sulphides in chalcedony matrix;
59 - as No.58;
60 - as No.58;
61 - pyritic, chalcedonic quartz; some banding of manganese oxide and limonite;
62 - pyrite-rich, green, fine-grained quartz vein;
63 - quartz breccia;
64 - sulphide-rich chalcedonic quartz

Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-hosted gold-silver veins.

References:

INAC Reports: 1985-86 YEX, p. 346-347

Assessment Reports: 091658; 091845; 091870

Other: Carlson (1987, p. 84-86)

83. GOLDY (115 I 3, 6)

Geology: Schist is intruded by Jurassic syenite of the Big Creek meta-Plutonic Suite and Cretaceous rhyolitic and andesitic dykes. A gossanous quartz vein breccia with very fine grained sulphides is located along the schist-syenite contact.
Geochemistry: The best values came from the Goldy Main trench, where a 2 m chip sample contained 10 ppm Au. Sample 17, collected by Emond, contained 15 400 ppb Au, 12.7 ppm Ag, 29 ppm Cu, 5934 ppm Pb, 1538 ppm Zn, 40 ppm Cd, 340 ppm F, 61 ppm Mn, 7640.0 ppm As, <5 ppm Se, 296.0 ppm Sb, <56 ppm Te, 35 200 ppm Ba, >5000 ppb Hg, 5 ppm Tl, 70 ppm B, <10 ppm Sn, <2 ppm Bi, <4 ppm W, 81 ppm Mo, <0.07% Na, 40.0 ppm Br, 1.8% Fe, 6.3 ppm Th and 4.3 ppm U.
Sample Description:
17 - Grab sample of vein with highly brecciated grey fine-grained quartz with very fine-grained disseminated pyrite and 1 mm thick white calcite veinlets along fractures
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver vein.
References:
INAC Reports: 1985-86 YEX, p. 348
Assessment Reports: 091893; 092104; 092587
Other: Carlson (1987, p. 86-87)
Recent References: 1988 YEX, p. 187

95. ROBERT (115 I 3)

Geology: Paleozoic (?) quartzite, gneiss and mica schist are intruded by Cretaceous granodiorite, intruded and overlain by Mount Nansen andesite and rhyolite plugs and flows and late Cretaceous basalt and rhyolite flows of the Carmacks Group. A north-trending float train of quartz-stibnite-chalcedony-jasperoid boulders is the LEE zone and brecciated quartz-feldspar porphyry intrusions and associated rhyolite-chalcedony breccia form the Wind zone.
Geochemistry: Several rock samples from the Lee zone contained greater than 5000 ppm Sb, 5000 ppb Hg and up to 950 ppb Au. Samples of quartz and rhyolite float and veined and altered gneiss and schist from the Wind zone assayed up to 740 ppb Au.
Classification: Cretaceous magmato-hydrothermal, shallow to surface volcanic-associated gold vein and breccia, work target.
References:
INAC Reports: 1985-86 YEX, p. 350
Assessment Reports: 091918; 092133; 092599
Recent References: 1988 YEX, p. 181-188

97. DIC (115 I 3)

Classification: Gold breccia pipe.
References:
INAC Reports: 1985-86 YEX, p. 334-336
Assessment Reports: 091896

99. DIC (115 I 3)

Geology: A Cretaceous granodiorite intrusion is overlain by andesite to rhyolite tuff and flows of the Cretaceous Mount Nansen Group. Quartz-feldspar porphyry dykes and minor andesitic and granitic dykes crosscut all units, but show a gradational contact with the granodiorite intrusion. Zones of intense sericite-carbonate to quartz-sericite alteration are associated with the granodiorite-volcanic contact and the quartz-feldspar porphyry dykes. Banded quartz-carbonate-sulphide vein float is found within the altered zone. To the west, silicification and brecciation of rhyolite dykes and flows is accompanied by weak to strong clay alteration and 3 to 30 cm wide quartz veins with up to 5% sulphides.
Geochemistry: Rock samples from the quartz-sulphide vein assayed up to 0.48 g/t Au and 88 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver veins.
References:

INAC Reports: 1985-86 YEX, p. 351-352
Assessment Reports: 091915; 092533
Recent References: 1988 YEX, p. 188

100. MARGARETE & AUGUSTA (GUDER) (115 I 6)

Geology: Metasedimentary rocks are intruded by the Jurassic Big Creek Syenite, Cretaceous granodiorite and younger Cretaceous quartz-feldspar porphyry dykes. Magnetite skarn is developed in limy beds within quartz-chlorite gneiss and amphibolite, near contacts with quartz-feldspar porphyry dykes. The main showings are the Augusta and Margarete, both comprised of 40 to 70% magnetite with lesser calcite, epidote, quartz, limonite, actinolite and garnet, plus minor specular hematite, pyrite, chalcopyrite and native gold.
Reserves: Estimated reserves for the Augusta are 70 700 tonnes grading 4.1 g/t Au and 104 g/t Ag and for the Margarete, 123 780 tonnes grading 4.21 g/t Au and 47.2 g/t Ag (the Margarete is a 1987 update).
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-copper-iron skarn.
References:

INAC Reports: 1974 MIR, p. 115-116; 1985-86 YEX, p. 334-336
Assessment Reports: 091896; 092127
Other: Carlson (1987, p. 75-76); Johnston (1937); Morin (1981, p. 68-84)
Recent References: 1988 YEX, p. 188-189

101. PEERLESS (115 I 6)

Classification: Gold vein.
References

INAC Reports: 1985-86 YEX, p. 334-336
Assessment Reports: 091896

102. RAMBLER (115 I 6)

Classification: Gold vein.
References:

1978 MIR, p. 69-71

103. WHALE (115 I 6)

Classification: Gold vein.
References:
Other: N.C.M.I.
Recent References: 1988 YEX, p. 187 (discusssed under adjacent No. 83 GOLDY project)

121. DOWS (115 I 3)

Classification: Gold vein.
References:
Assessment Reports: 092576
Recent References: 1988 YEX, p. 190 (assays)

130. RAG (115 I 6)

Classification: Gold vein.
References:
Assessment Reports: 092139; 092586
Recent References: 1988 YEX, p. 190 (assays)

115 J & K

4. HAYES (SWEDE) (115 J 9)

Geology: Quartz biotite gneiss and mafic metavolcanics of the Yukon Metamorphic Complex of Paleozoic (?) age and granitoid rocks of the Cretaceous Dawson Range Batholith are intruded by a Cretaceous porphyritic felsite plug and related dykes. A northwest-trending zone of alteration and mineralization near the plug consists of assemblages of serpentine-chlorite-carbonate and talc-chlorite-carbonate-fuchsite. The felsite plug is moderately to strongly altered (quartz-sericite-pyrite) and veined (pyrite-quartz) and geochemically anomalous in gold. Several polymetallic veins cut the plug and country rock, including tetradymite and traces of molybdenite and chalcopyrite in a thin layer of sheared, quartz-veined, carbonatized and chloritized peridotite within the metasedimentary rocks.
Geochemistry: Analysis of greenish clay gouge with fine-grained sulphides at the contact between peridotite and quartz-sericite schist gave 12.4 g/t Au and 165.6 g/t Ag over 1.52 m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted gold-silver vein.
References:

INAC Reports: 1969-70 MIR, p. 69; 1974 MIR, p. 95-96; 1976 MIR, p. 178-179; 1977 MIR, p. 72; 1978 MIR, p. 48; 1979-80 YGE, p. 265; 1981 YEG, p. 221; 1984 YEX, p. 194; 1985-86 YEX, p. 360
Assessment Reports: 090777; 091612; 091773
Other: Payne et al. (1987, p. 107-110)

7., 41. COCKFIELD, KOE (115 J 9)

Geology: Felsic and intermediate volcanic rocks of the Mount Nansen Suite are enclosed in a graben surrounded by quartzofeldspathic gneisses of the Yukon Metamorphic Complex and intruded by the Mount Cockfield Stock of latite and granodiorite. Weak to moderate quartz-sericite-pyrite alteration is widespread in the graben and associated with disseminated and veinlet Cu-Mo mineralization. A north-trending fault zone separating andesite from latite contains chalcedonic quartz veins with clay-sericite-pyrite alteration and anomalous values in gold and silver.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-molybdenum veinlets and disseminations and Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold-silver veins.
References:

INAC Reports: 1969-70 MIR, p. 66-68; 1979-80 YGE, p. 265; 1984 YEX, p. 195; 1985-86 YEX, p. 361
Assessment Reports: 091568; 091725; 090767; 091924
Other: Payne et al. (1987, p. 105-107)
Recent References: 1987 YEX, p. 278-279 (includes map)

9. RUDE CREEK (TROMBLEY CREEK) (115 J 10)

Geology: The Dawson Range granodiorite is cut by a 1 m wide quartz vein that contains a lens of galena and sphalerite about 5 m long and up to 25 cm wide.
Geochemistry: A grab sample of galena is reported to have assayed 71.6% Pb, 6.2% Zn, 6518 g/t Ag and 0.34 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal silver-lead-zinc-gold vein.

References:
INAC Reports: 1969-70 MIR, p. 63
Other: Payne et al. (1987, p. 104-105); Bostock (1957, p. 578-581)

10. NORDEX (115 J 10)

Classification: Silver-lead vein.
References:
Payne et al. (1987, p. 117)

11. BOMBER & HELICOPTER (115 J 10)

Geology: The Dawson Range Batholith is intruded by the hypabyssal Casino Complex Suite of intrusions, breccia pipes and dykes. Four km to the south, weakly to strongly altered potassic quartz diorite to granodiorite of the batholith is cut by four subparallel shear zones trending 150 degrees and dipping steeply west. Veins in the shear zones contain galena, lesser sphalerite and pyrite, and minor chalcopyrite in a quartz-barite gangue. Quartz, sphalerite and pyrite increase in abundance with depth.
Production: The average grade of several hundred tonnes mined and shipped between 1965 and 1980 was 3690 g/t Ag, 17 g/t Au, 48.3% Pb, and approximately 5% Zn, 1.5% Cu and 0.02% Bi.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc-gold-copper vein.
References:
Green and Godwin (1964, p. 22-24); Green (1965, p. 34-35); Green (1966, p. 39-42); Findlay (1967, p. 32-34); Payne et al. (1987, p. 102-104)

12. CASINO (115 J 10)

Geology: Potassic quartz diorite of the Cretaceous Dawson Range Batholith is intruded by a 70 Ma-old hypabyssal suite of intrusions, breccia pipes and dykes referred to as the Casino Complex. A zonal sequence of alteration zones is centred on the breccia pipe from potassic to phyllic to propylitic and argillic. Pyrite, chalcopyrite, molybdenite and minor huebnerite are concentrated in veins and disseminations in the phyllic zone along the inner side of the pyrite halo. A leached cap with a thickness ranging from 35 to 160 m and averaging 80 m is underlain by a well-developed supergene copper zone.
Reserves: Estimated mineable reserves are reported to be 163 million tonnes grading 0.37% Cu and 0.023% MoS_2 with a stripping ratio of 1.67 to 1.00. The deposit has been re-evaluated in terms of its gold content and using a cutoff grade of 0.35 g/t to a depth of 70 m, the Carr Ridge oxide zone contains geologically indicated reserves of 22.7 million tonnes grading 0.58 g/t Au, or 13 230 000 grams of contained gold with a stripping ratio of 0.4:1.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-hosted copper-molybdenum-gold veins, dissemination and stockwork.
References:
INAC Reports: 1969-70 MIR, p. 55-57
Assessment Reports: 091703
Other: Payne et al. (1987, p. 99-102); Godwin (1976, p. 344-358); Eaton and Main (1986)
Recent References: 1987 YEX, p. 278

14. ZAPPA (115 J 10)

Classification: Gold-silver vein, copper-molybdenum porphyry
References:
Payne et al. (1987, p. 115)

23. CALIFORNIA (115 K 2)

Classificaation: Gold vein.
References:
Cairnes (1915, p. 123)

44. SIZZLER (115 J 16)

Geology: Paleozoic (?) gneiss, foliated granodiorite, amphibolite and micaceous quartzite is intruded by Tertiary quartz monzonite and two southeast-trending Tertiary rhyolite and quartz-feldspar porphyry dykes. Quartz and chalcedony stockwork and silicified breccias occur within porphyritic rhyolite in an area 1.7 km in diameter and are associated with patchy gold mineralization. The rhyolite host rock shows weak to intense silicification and sericitization flanked by clay and epidote alteration.
Geochemistry: A grab sample from silicified breccia returned a value of 1050 ppb Au.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-hosted gold vein, replacement and breccia.
References:
INAC Reports: 1985-86 YEX, p. 361
Assessment Reports: 091866

45. SHADOW (115 J 8)

Geology: Cretaceous andesitic pyroclastic rocks, feldspar porphyry and rhyolite flow rocks overlie granodiorite basement and all are intruded by numerous rhyolite, quartz-feldspar and feldspar porphyry dykes. Breccia hosted by rhyolite porphyry dykes for 1.3 km along a conspicuous north-trending lineament consists of rhyolite porphyry fragments in a siliceous matrix. Chalcedony and quartz are present as rim coatings to the fragments and veins that cut the breccia. Clay-sericite alteration and quartz stringers surround the breccia.
Geochemistry: Silicified breccia assayed 400 ppb Au and several strongly anomalous values of Sb and As were also determined.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-associated gold vein.
References:
INAC Reports: 1985-86 YEX, p. 362-363
Assessment Reports: 091865; 092574
Recent References: 1988 YEX, p. 195

54. ISAAC (115 J 10)

Geology: Cretaceous Dawson Range granodiorite is intruded by dykes of Mount Nansen Suite and encloses minor remnants of Yukon Metamorphic Complex limestone and skarn. Manganiferous quartz veins containing limonite boxwork with minor pyrite, arsenopyrite, galena and sphalerite cut the granodiorite.

Classification: Cretaceous magmato-hydrothermal, mesozonal lead-zinc-(gold-silver) veins.
References:
Payne et al. (1987, p. 118)

55. IDAHO (115 J 10)

Geology: Intrusives of the Dawson Range Suite are bordered by minor Mount Nansen Suite volcanics and metasediments and limestones of the Yukon Metamorphic Complex. Precious metal geochemical targets are a feldspar porphyry dyke and a float train of vein quartz. Wallrocks are fractured and pervasively argillized and mineralization is believed to be epithermal veins or stockworks developed along fault zones.
Geochemistry: Rock samples have assayed as high as 15 g/t Au and 1389 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, epizonal gold-silver veins and stockwork.
References:
INAC Reports: 1985-86 YEX, p. 363-364
Assessment Reports: 091821
Other: Payne et al. (1987, p. 118)

66. FOG (115 J 8)

Classification: Gold-silver vein.
References:
Assessment Reports: 091950
Recent References: 1987 YEX, p. 281

115 N

5. LORI (MOOSEHORN) (115 N 2)

Geology: Coarse-grained massive granodiorite is intruded by dykes of quartz diorite and granodiorite porphyry. Several quartz-sulphide veins are hosted in the granodiorite along gently east-dipping, north-, northwesterly-trending parallel joints. The veins consist of quartz, galena, sphalerite, arsenopyrite, boulangerite (?) and native gold. Narrow symmetrical zones of alteration have formed in the wallrocks and consist of sericite, quartz, carbonate, arsenopyrite and magnetite.
Geochemistry: The best drill intersections averaged about 0.15 oz/ton Au over a 4 foot mining width. A high grade selectively mined bulk sample of 261 lbs graded 20.01 oz/ton Au and 12.67 oz/ton Ag. Sample 38, collected by Morin, contained > 90 000 ppb Au, >50.0 ppm Ag, 9 ppm Cu, >10 000 ppm Pb, 2503 ppm Zn, 50 ppm Cd, 50 ppm F, 33 ppm Mn, >9 000 ppm As, >46 ppm Se, 4070 ppm Sb, >290 ppm Te, <700 ppm Ba, 335 ppb Hg, <1 ppm Tl, 35 ppm B, <10 ppm Sn, <2 ppm Bi, <42 ppm W, <44 ppm Mo, <0.78% Na, <318.0 ppm Br, <1.4% Fe, <3.9 ppm Th and <9.7 ppm U.
Sample Description:
38 - Quartz vein with arsenopyrite, sphalerite, galena and visible gold
Classification: Cretaceous magmato-hydrothermal, mesozonal gold-silver veins.
References:
Morin (1977, p. 33-54, 185 and map)

7. SANTA (115 N 10)

Classification: Silver-lead-antimony vein.
References:
N.C.M.I.

12., 13. LUBRA, CONNAUGHT (MOSQUITO CREEK) (115 N 15)

Geology: Quartz-plagioclase-biotite granite-gneiss and quartz-muscovite schist are intruded by a biotite granite plug and northeast-trending andesite and dacite dykes. Northeast-trending quartz-sulphide veins are hosted in the metamorphic rocks. Vein mineralogy is highly variable and includes galena, arsenopyrite, pyrite, chalcocite, tetrahedrite and barite, with pyrrhotite, mackinawite, native bismuth, siderite, ankerite and native gold also reported. The LUBRA showing contains several quartz veins weakly mineralized with argentiferous galena and locally arsenopyrite-rich.
Geochemistry: Trenching has intermittently exposed the main showing (No. 1 vein) for a length of 3400 ft with grades averaging 22.8 oz/ton Ag, 0.031 oz/ton Au and 19.9% Pb over a 4 ft width along 150 ft of the vein. An arsenopyrite-rich portion of the LUBRA vein assayed up to 0.5 oz/ton Au.
Production: A selectively mined, high grade ore shipment of 231.61 tons from the No. 3 vein averaged 60.4 oz/ton Ag, 0.026 oz/ton Au and 57.9% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-gold vein.
Comments: Glasmacher (1987) determined that fluid inclusions were saline (NaCl equiv. wt % from 7.3 to 19.5) with temperatures of homogenization ranging from 305 to 145 degrees C.
References:
INAC Reports: 1969-70 MIR, p. 32-34; 1981 YEG, p. 224
Assessment Reports: 090970
Other: Morton (1983); Tempelman-Kluit (1974a, p. 74); Green (1966, p. 28); Findlay (1967, p. 29); Findlay (1969a, p. 32-33); Findlay (1969b, p. 20)

14. PER (115 N 15)

Geology: Metamorphic rocks are overlain by andesitic volcanics of the Carmacks Group. The southeastern contact of the volcanics with the metamorphics is a northeasterly-trending fault zone along which areas of epithermal alteration are present. The PER vein is located within argillized and silicified andesite and consists of galena, sphalerite and arsenopyrite.
Geochemistry: A chip sample across the vein ran 1.4 g/t Au, 429 g/t Ag, 26.5% Pb and 4.7% Zn. A zone of altered andesite with massive pyrite, quartz stockwork and disseminated chalcopyrite and galena assayed up to 26 g/t Au and 42.5 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, epizonal, volcanic-hosted gold-silver-lead-zinc veins, stockwork and dissemination.
References:

INAC Reports: 1985-86 YEX, p. 369
Assessment Reports: 091830; 092513
Other: Green (1966, p. 26-28)
Recent References: 1987 YEX, p. 281; 1988 YEX, p. 199

15. ,16. BUTLER GULCH, FIFTY (115 N 15)

Geology: Cherty low-grade metamorphic rocks are intruded by a Cretaceous monzonite stock and host east-west-trending galena-tetrahedrite-barite veins that dip steeply south.
Geochemistry: The best sample graded 166.2 oz/t Ag, 52.5% Pb and 0.12 oz/t Au across a width of 4 ft.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-zinc vein.
References:

INAC Reports: 1969-70 MIR, p. 32-34
Assessment Reports: 062296; 092116; 092117; 092679; 092511
Other: Cockfield (1919a, p. 8)
Recent References: 1988 YEX, p. 200 (map)

79. LODE (115 N 2)

Classification: Gold vein.
References:

Assessment Reports: 092543
Recent References: 1988 YEX, p. 203

82. REEF (115 N 2)

Classification: Gold vein.
References:

INAC Reports: 1984 YEX, p. 215
Assessment Reports: 091716
Recent References: 1987 YEX, p. 295; 1988 YEX, p. 203 (assays)

87. MOLY (MM) (115 N 15)

Classification: Silver vein.
References:
INAC Reports: 1983 YEX, p. 266
Assessment Reports: 092594; 091988
Recent References: 1987 YEX, p. 296; 1988 YEX, p. 203

140. ROD (115 N 15, 116 C 2)

Classification: Mercury-gold stockwork.
References:
Assessment Reports: 092692
Recent References: 1988 YEX, p. 206 (assays)

115 O

11. TEN MILE (115 O 12)

Classification: Gold-silver vein.
References:
McConnell (1905, p. 25-39)

19. PICKERING (115 O 13)

Classification: Gold vein.
References:
MacLean (1914, p. 120)

25. MCKINNON CREEK (115 O 11)

Geology: Lower Cretaceous (Albian) siliciclastic sedimentary rocks consisting of interbedded sandstone, conglomerate, siltstone and coal are intruded by Upper Cretaceous - Paleocene andesite dykes and sills. The conglomerates are silicified and argillically altered and contain very minor authigenic pyrite and tourmaline.
Classification: Cretaceous placer or Cretaceous magmato-hydrothermal, shallow to surface volcanic-associated disseminated gold occurrence.
Comments: Note correction in Lowey paper, p. 75, line 26, RHS, should read "... schist and assays up to 3.4 g/t are reported." It has not been determined whether the gold mineralization is a paleo-placer or is of epithermal origin.
References:
Lowey (1985, p. 69-78); MacLean (1914)

28. KENTUCKY LODE (AIME) (115 O 10)

Geology: Muscovitic quartzite and quartz-muscovite schist is overthrust by a sequence of chlorite- and chlorite-biotite schist. Two gold-bearing quartz veins range from 0.06 to 1.0 m thick and consist of milky quartz with scattered coarse cubes of pyrite and rare grains of galena. Wallrock is locally pyritized and sideritized.
Geochemistry: Grab samples are reported to range up to 308.6 g/t Au.
Classification: Mesozoic metamorpho-hydrothermal gold vein.
References:
INAC Reports: 1984 YEX, p. 200-201
Assessment report: 091570; 092603
Other: Debicki (1985)
Recent References: 1988 YEX, p. 201

29. GOLD RUN (115 O 15)

Geology: Muscovite-feldspar-quartz schist is in low angle fault contact with overlying chlorite schist. The footwall schist hosts a quartz vein with local pyrite and galena.
Geochemistry: One sample of quartz reportedly contained 58.2 g/t Au and 51.3 g/t Ag and a second sample contained 5.5 g/t Au and 13.0 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal gold-silver vein.
References:

INAC Reports: 1983 YEG, p. 262; 1984 YEX, p. 207-208
Assessment Reports: 091559
Other: Debicki (1985, in progress); MacLean (1914)

30. PORTLAND (115 O 15)

Geology: Muscovite-feldspar-quartz schist is in fault contact with underlying muscovite-feldspar-quartz schist, biotite-quartz schist and carbonaceous quartzite. Discordant quartz veins contain minor amounts of pyrite and galena.
Geochemistry: A grab sample of vein material assayed 0.7 g/t Au and 4.1 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal gold-silver veins.
References:

INAC Reports: 1983 YEG, p. 262; 1984 YEX, p. 208-209
Other: Debicki (1985, in progress); MacLean (1914)

31. DOMINION (115 O 15)

Classification: Gold-lead vein.
References:

1988 YEX, p. 201-202 (assays); Debicki (1985)

32., 127. LLOYD & GREEN GULCH (115 O 15)

Geology: Chlorite-quartz schist is in fault contact with underlying muscovite-feldspar-quartz, and muscovitic quartzite. Several quartz veins cut both the hanging wall and footwall rocks. The veins trend about 300 degrees, are steeply dipping and have propylitic wallrock alteration. They contain fragments of country rock, quartz crystal-lined cavities and traces of pyrite and galena.
Geochemistry: One sample of quartz with galena contained 20.9 g/t Au and 6.2 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal gold-silver veins.
References:

INAC Reports: 1983 YEG, p. 262; 1984 YEX, p. 210-211
Assessment Reports: 091562; 092600
Other: Debicki (1985, in progress); MacLean (1914)
Recent References: 1988 YEX, p. 201-202 (assays)

33. HUNKER DOME (115 O 15)

Geology: Chloritic muscovite-feldspar-quartz schist and calcareous quartz-chlorite schist host quartz veins, isoclinally folded lenses and stringers. Some of the vein quartz is crystalline and includes angular fragments of silicified country rock. Pyrite and galena also occur in the quartz and wallrock alteration includes carbonate and pyrite.
Geochemistry: A grab sample of galena-bearing quartz contained 149.2 g/t Au, 232.6 g/t Ag and 1.47% Pb with anomalous amounts of As, Sn and Hg.
Classification: Mesozoic metamorpho-hydrothermal gold-silver-lead vein.
References:

INAC Reports: 1982 YEG, p. 211
Assessment Reports: 091384; 092600
Other: Debicki (1984, in progress); Gleeson (1970, p. 16-17)
Recent References: 1988 YEX, p. 201-202

34. MITCHELL (115 O 15)

Geology: Chloritic muscovite-feldspar-quartz schist and quartz-chlorite schist are complexly inter-related. They appear to be interbanded on a scale of tens of metres and/or are thrust-related such that the mafic rocks are erosional klippe from an overlying upper plate thrust upon a lower plate of felsic rocks. They are host to stringers, lenses and veins of quartz. The veins locally contain minor pyrite and galena and in some places rich pockets of gold-bearing sulphides including pyrite, galena, sphalerite, chalcopyrite, tetrahedrite and arsenopyrite. Carbonate and pyrite alteration haloes extend for several metres away from the veins.
Production: Two high grade ore shipments were made:

Year	Weight	Au	Ag	Pb	Cu	Zn
1966	0.8 t	-	10 464 g/t	23.5 %	2.9 %	-
1969	3.7 t	1.4 g/t	4683 g/t	26.3 %	0.4 %	0.7 %

Classification: Mesozoic metamorpho-hydrothermal gold-silver-lead-copper-zinc veins.
References:

INAC Reports: 1982 YEG, p. 211
Assessment Reports: 091384
Other: Debicki (1984, in progress); Gleeson (1970, p. 16-17); MacLean (1914, p. 107-111)

35. FAWCETT (115 O 15)

Geology: Quartz-chlorite schist is thrust over muscovite-feldspar-quartz schist and separating the two is an imbricate zone of variably altered ultramafic rocks as well as chlorite schist and gabbro. A small unfoliated quartz and quartz-feldspar porphyry of late Cretaceous or early Tertiary age intrudes the schists. Massive to banded and vuggy quartz vein, brecciated muscovite-feldspar-quartz schist in quartz matrix and silicified quartzo-feldspathic schist wallrock are present. Minor amounts of pyrite and galena occur with the quartz.
Geochemistry: One vein assayed 4.1 g/t Au across 1.3 m (Alphonse).
Classification: Mesozoic metamorpho-hydrothermal gold vein.
Comments: Also known as Brandon, Hillsborough, Alphonse, KM and Golden Dream.

References:
INAC Reports: 1983 YEG, p. 263; 1984 YEX, p. 212
Assessment Reports: 091566
Other: Debicki (1984, in progress)

36. BUM (115 O 15)

Geology: Chalcopyrite, pyrite and bornite occur in brecciated quartz-chlorite schist.
Geochemistry: A selected sample is reported to contain 7.3% Cu and 147.5 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal copper-gold breccia matrix.
References:
INAC Reports: 1971-72 MIR, p. 13
Other: Debicki (1984, in progress); Gleeson (1970, p. 14-15)

37. BOX CAR (115 O 14)

Geology: Muscovite-feldspar-quartz schist with chloritic parts is cut by a shear zone trending 160 degrees with a dip of 80 degrees southwest. The latter hosts a 0.6 m wide vein of quartz and minor chalcopyrite and pyrite with carbonate and pyrite wallrock alteration.
Geochemistry: Four grab samples from the trench beside the shaft averaged 1.0 g/t Au and 277.9 g/t Ag; one grab sample contained 3.25% Cu. A sample of galena-bearing schist contained 8.77% Pb, 202.1 g/t Ag, more than 0.4% Cu and anomalously high Zn, Ba, Sb and Bi.
Classification: Mesozoic metamorpho-hydrothermal silver-lead-zinc-gold vein.
References:
INAC Reports: 1984 YEX, p. 202
Other: Debicki (1984, in progress); Gleeson (1970); Maclean (1914)

38. LONE STAR (115 O 14)

Geology: Geology and mineralization are described by Debicki (1988); "The area is underlain by muscovite-quartz-feldspar schist. The muscovite is very coarse-grained in places, and elsewhere, crenulation cleavage is well developed. Quartz is present as lenses and stringers of grey, translucent quartz parallel to the foliation. Some of the stringers have been isoclinally folded to form lenses. Massive milky white quartz is also present. It occurs as discordant rusty weathering veins up to 50 cm thick, which have been warped into low-amplitude open folds. The quartz is fractured, and in places is crystalline. Pyrite is disseminated through it, and one large pocket of high-grade sulphide ore was encountered during early mining operations. The country rock bears fine quartz veinlets, and abundant fine-grained euhedral pyrite." In addition to the vein mineralization, disseminated gold occurs within a zone of muscovite-quartz schist. Features of the zone which may be significant regarding the mineralization include weakly to moderately disseminated pyrite, muscovite blastesis, relatively high ratio of discordant to concordant foliaform vein quartz, abundance of "Gleitbretter" shear structures and the structural position of the zone several tens of metres below a band of carbonaceous schist.
Production: Between 1912 and 1914, 7 647 tonnes of ore were treated. All but 845 kg were treated at the mill and approximately 35 200 g of gold were reported recovered, for an average grade of 4.7 g/t Au. Hand-picked sulphide rich rock weighing 845 kg was sent to a smelter in San Francisco in 1914 and yielded 3125 g Au.
Geochemistry: Muck samples collected in 1930 and 1931 from the 1929 adit assayed up to 6.5 g/t Au across 32 metres. Recent drilling and trenching have returned significant gold values (up to 242.9

g/t Au) and in the LONE STAR and GAY GULCH areas, very large tonnages of low-grade material surrounding 6.9 to 14.7 g/t Au horizons were outlined.

Samples collected by Morin gave the following values.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
125	32	1	19	16	10
126	310	LT 1	24	12	16
127	260	1	48	16	120
128	310	1	25	16	52
129	3900	5	43	280	36
131	79	LT 1	10	36	39
132	0.08 opt	0.66 opt	9	0.45 %	68
133	350	LT 1	9	8	10

SAMPLE	Cd ppm	Mn ppm	As ppm	Se ppm
125	LT 1	720	2500	LT 10
126	LT 1	60	2400	LT 10
127	2	590	2400	LT 10
128	LT 1	75	2100	LT 10
129	2	26	1800	LT 10
131	3	76	140	LT 10
132	2	36	88	LT 10
133	1	71	940	LT 10

	Sb ppm	Te ppm	Hg ppb	Tl ppm
125	14.0	0.2	10	LT 20
126	14.0	0.8	20	40
127	14.0	0.5	20	LT 20
128	11.0	0.7	20	LT 20
129	13.0	0.7	40	40
131	2.3	LT 0.1	10	100
132	3.1	LT 0.1	290	LT 20
133	5.7	0.3	10	LT 20

	B ppm	Bi ppm	W ppm	Mo ppm
125	10	LT 0.1	LT 10	LT 2
126	LT 10	7.0	LT 10	LT 2
127	LT 10	5.9	LT 10	LT 2
128	10	7.4	LT 10	LT 2
129	10	7.8	LT 10	LT 2
131	10	1.4	2	LT 2
132	10	12.5	4	LT 2
133	LT 10	3.0	4	-

Sample Descriptions:
125 - Contact fault breccia with clasts of pale green carbonatized serpentinite in limonite-clay matrix; trench, 1.2 km north of old mill building;
126 to 129 - from dump east of mill building;
126 - Muscovite-quartz schist with disseminated pyrite;
127 - muscovite-quartz schist with disseminated pyrite and argillic alteration;
128 - white quartz vein material with very minor pyrite;
129 - white quartz vein material with very minor pyrite;
131 - strongly argillized muscovite-quartz schist; trench 100 m northwest of mill building;
132 - white vein quartz with limonite and galena; float beside road 800 m north-northwest of mill building;
133 - strongly argillized quartz-muscovite schist; trench east of road, 1.2 km north of mill building
Classification: Mesozoic metamorpho-hydrothermal gold vein and disseminations or Proterozoic-Paleozoic volcanogenic, exhalative gold-rich tuff.
References:
INAC Reports: 1985-86 YEX, p. 370
Assessment Reports: 091683; 092132; 092691; 091756; 091760; 091754
Other: Debicki (1984, in progress)
Recent References: 1987 YEX, p. 24, 37, 290-292 (map, assays); 1988 YEX, p. 201 (assays)

39. VIOLET (115 O 14)

Geology: Feldspar-quartz schist is intruded by a Triassic or older batholith of feldspar-quartz schist. The country rock is cut by several veins of quartz, barite, minor pyrite and galena and both are cut by fine calcareous veinlets. Wallrock is silicified locally and breccia with angular fragments of silicified schist in a quartz matrix is also present.
Geochemistry: Gold and silver values in quartz are positively correlated with galena and pyrite and quartz-barite vein samples containing 2.5 g/t Au and 3.0 g/t Ag are typical.
Classification: Mesozoic magmato-hydrothermal, katazonal, intrusive-proximal gold vein and breccia.
References:
INAC Reports: 1985-86 YEX, p. 370
Assessment Reports: 091629
Other: Debicki (1984, in progress); Maclean (1914); Gleeson (1970)

41. HILCHEY (115 O 14)

Geology: Muscovite-feldspar-quartz schist and graphitic schist are host to quartz veins with pyrite and traces of galena. Low gold values are reported from quartz-rich diamond drill intersections.
Classification: Mesozoic metamorpho-hydrothermal gold vein.
References:
INAC Reports: 1983 YEG, p. 264
Other: Debicki (1984, in progress)

42., 124. BUCKLAND (115 O 14)

Geology: Muscovite-feldspar-quartz schist and quartz-chlorite schist host several types of quartz veins: isoclinally folded lenses; veins with minor pyrite and carbonate crosscutting foliation; and quartz matrix breccia with schist fragments, and rarely calcareous matrix breccia with quartz and schist fragments. Vein wallrocks are altered with pyrite and calcite.

Geochemistry: A sample of quartz is reported to contain 62.8 g/t Au and 14.1 g/t Ag; visible gold is reported in several samples.
Classification: Mesozoic metamorpho-hydrothermal gold vein and breccia.
References:
Debicki (1984, in progress); Maclean (1914); Gleeson (1970, p. 16); Green and Godwin (1963, p. 19)

48. HEFFRING (115 O 14)

Geology: Carbonaceous and quartz-chlorite schists and serpentinite are intruded by a quartz-feldspar porphyry stock and related dykes. The schists are cut by a banded dolomite vein. No gold values were determined during an evaluation in 1987 by United Keno Hill Mines (J. McFaull personal communication).
Classification: Vein/work target.
References:
Debicki (in progress)

60. HUNK (115 O 15)

Classification: Gold vein.
References:
INAC Reports: 1985-86 YEX, p. 371
Recent References: 1988 YEX, p. 20

61. BRONSON (115 O 14)

Geology: Muscovite-feldspar-quartz schist with relict quartz phenocrysts is locally overlain by float of quartz vein and galena-bearing quartz-carbonate vein. Disseminated pyrite is abundant within the schist in places.
Geochemistry: A sample of pyritic schist assayed 0.6 g/t Au and 2.0 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal, gold vein and disseminations.
References:
INAC Reports: 1979-80 YGE, p. 272-273
Other: Debicki (1984, in progress)
Recent References: 1987 YEX, p. 293

73. PYROXENE (115 O 1, 2)

Classification: Platinum-gold occurrence.
References:
1987 YEX, p. 294; 1988 YEX, p. 202-203 (assays)

93. KLOOK (115 O 15)

Geology: Mafic metamorphic rocks are in fault contact with underlying felsic metamorphic rocks. The former are actinolite-chlorite and chlorite-quartz-carbonate schists with intercalated bands of metagabbro and the latter are muscovitic and feldspathic quartzites with intercalated muscovite and

quartz-muscovite schist. Discordant, gold-bearing quartz veins cut the upper chloritic schists and consist of quartz with minor siderite and pyrite, and local sporadic sulphide concentrations. Wallrock alteration includes carbonatization, pyritization and silicification. Underground workings intersected six veins ranging from 0.6 to 1.8 m thick.
Geochemistry: Assays from the underground veins were up to 857 g/t Au and 125 g/t Ag though MacLean's (1914) three samples from trenches and shafts averaged 2.74 g/t Au and 3.43 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal gold-silver veins.
Comments: Also known as Pride of the Mountain claim, Eleventh Hour, Bridge and Dominion.
References:
INAC Reports: 1983 YEG, p. 265; 1984 YEX, p. 213-214
Assessment Reports: 091561
Other: Debicki (in progress)

98. SUL (115 0 15)

Classification: Gold vein/replacement.
References:
INAC Reports: 1985-86 YEX, p. 371
Assessment Reports: 091946
Recent References: 1988 YEX, p. 204 (assays)

101. HAWK (115 O 14)

Geology: Felsic schists of Kootenay Assemblage are intruded by a metamorphosed granodiorite batholith of possible Permian age. The schists consist mainly of quartz, feldspar, muscovite and chlorite but also have interbedded traceable marker horizons of graphite-rich rocks and rhyolitic tuff. Quartz veins up to a few metres thick and up to 1 km long trend 135 degrees parallel to the schist foliation. In most places, the quartz veins are only slightly mineralized with pyrite, rare galena and chalcopyrite.
Geochemistry: Trenching of a quartz vein system south of French Creek yielded spotty gold values up to 10.7 g/t Au.
Classification: Mesozoic metamorpho-hydrothermal gold vein.
Comments: In vicinity of Hilchey and probably equivalent.
References:
INAC Reports: 1985-86 YEX, p. 372-375
Assessment Reports: 091808; 092126; 092691
Other: Debicki (in progress)
Recent References: 1987 YEX, p. 296-297 (map); 1988 YEX, p. 204-205 (assays)

107. BEA (115 O 14)

Geology: Mafic schists and gneisses of volcanic parentage are separated from felsic and intermediate schists and gneisses by a discontinuous band of carbonaceous phyllite. Quartz veins are abundant and generally concordant with the north-trending foliation. Anomalous gold in soil coincides with the distribution of quartz-chlorite gneiss in the mafic metavolcanic unit.
Geochemistry: Assays of trenched quartz-chlorite gneiss bedrock with a few pyrite pseudomorphs returned values of 0.8 g/t Ag and 1.6 g/t Au.
Classification: Mesozoic metamorpho-hydrothermal gold disseminations.

References:
INAC Reports: 1985-86 YEX, p. 375-376
Assessment Reports: 091900

110. CUAG (GOLD BOTTOM) (115 O 15)

Classification: Copper-silver vein.
References:
1984 YEX, p. 217

121. ALPHONSE (115 O 15)

Classification: Gold vein.
Comments: See No. 35 FAWCETT
References:
Debicki (1984, in progress)

123. CULLEN (115 O 14)

Geology: Feldspar-quartz schist, muscovite-feldspar-quartz schist and quartz-chlorite schist host lenses and veinlets of vuggy, rusty quartz and pyrite, minor chalcopyrite and bornite, and also breccia with schist fragments in a quartz matrix. Pyrite is present in schist surrounding the quartz.
Geochemistry: Samples of quartz and schist assayed up to 1.4 g/t Au and 21.6 g/t Ag.
Classification: Mesozoic metamorpho-hydrothermal gold vein and breccia.
References:
Debicki (1984, in progress); Maclean (1914)

125. ELDORADO DOME (115 O 14)

Geology: Muscovite-feldspar-quartz schist and minor quartz-chlorite schist are cut by weak to strongly argillized quartz porphyry and andesite dykes. All rocks contain locally abundant disseminated pyrite and vein quartz is also present.
Geochemistry: A sample of quartz assayed 1.4 g/t Au and 2.0 g/t Ag. A sample of andesite contained 5.5 g/t Ag and along with the strongly argillized porphyry had anomalous values in As, Sb, Bi and Sn.
Classification: Mesozoic metamorpho-hydrothermal gold vein and disseminations.
References:
Debicki (1984, in progress); Maclean (1914)

137. JAE (115 O 15)

Classification: Gold-silver vein.
Production: In 1988, a 29 665 kg bulk shipment contained an average of 34.0% Pb, 2.0% Cu, 6 728 g/t Au, 1.0 g/t Au and 0.9% Sb.
References:
Assessment Reports: 092534; 092517
Recent References: 1988 YEX, p. 205-206 (assays)

115 P

1. JAYBEE (115 P 16)

Classification: Silver-lead vein.
References:
N.C.M.I.

3. HAWTHORNE (115 P 16)

Geology: Phyllite and phyllitic quartzite of the Upper Proterozoic to Lower Cambrian 'Grit Unit' are intruded by numerous granodiorite stocks and are host to two stibnite-bearing quartz veins. The main showing has been traced for about 400 ft. and ranges from less than 1 ft. to 10 ft. in width and is locally highly oxidized. The lower showing is hosted in chloritic quartzite and phyllite.
Geochemistry: Assays are reported below:

	Sb (%)	As (%)	Pb (%)	Au (oz/ton)	Ag (oz/ton)
A	17.9	1.3	0.4	0.04	2.00
B	0.80	1.0	trace	0.08	1.20
C	6.6	0.94	0.1	0.02	7.86
D	50.5	trace	trace	0.05	1.26

A - Main showing; composite sample of quartz with fine stibnite from 10 ft. wide portion of the vein;
B - Main showing; composite sample of oxidized secondary oxide-rich material;
C - Main showing; chip sample across 3 ft. width of vein;
D - Lower showing; grab sample.

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-gold-antimony vein.
References:
Assessment Reports 092508; 091723
Other: Green (1966, p. 20-21)
Recent References: 1987 YEX, p. 306, 308; 1988 YEX, p. 211 (summary description, assays)

4. SCHEELITE DOME (115 P 16)

Classification: Tungsten-gold (zinc-copper-tin) skarn
References:
INAC Reports: 1978 MIR, p. 23; 1979-80 YGE, p. 277; 1982 YEG, p. 215
Assessment Reports: 090459; 090483; 091024
Other: Emond (1986); Kuran et al. (1982)
Recent References: Potter (1987); 1988 YEX, p. 211-213 (summary description)

5. HOBO (115 P 15)

Geology: Phanerozoic clastics and mafic volcanic rocks are intruded by diorite to gabbro dykes and a large leucocratic biotite granite sill. Minor biotite hornfels is present at the granite contact along which also occurs a prominent gossan. Small arsenopyrite-bearing quartz veins occur in the metasedimentary rocks close to the granite contact.
Geochemistry: A sample from a 5 cm wide vein contained 14.2 g/t Au and 8.8 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver veins.
References:

INAC Reports: 1979-80 YGE, p. 277
Assessment Reports: 090559

6. SPRAGUE (115 P 15)

Classification: Silver-lead vein.
References:

Bostock (1948, p. 11)

7. TEE (115 P 15)

Geology: Metasedimentary rocks of the Upper Proterozoic and Lower Cambrian 'Grit Unit' are intruded by biotite granodiorite and quartz monzonite stocks and dacite dykes. Quartz veins, breccia veins and skarn are present. Some of the breccia veins are tourmaline and arsenopyrite-bearing with 'significant' values in silver and brecciated quartz veins with argentiferous galena, sphalerite, chalcopyrite and secondary lead, copper and manganese minerals also occur.
Geochemistry: The brecciated quartz veins assay up to 17.80% Pb, 2.5% Zn and 250 ppm Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal lead-zinc-silver-copper veins.
Comments: Close to and formerly included with No. 47. SNARK.
References:

INAC Reports: 1971-72 MIR, p. 20-21; 1978 MIR, p. 22; 1979-80 YGE, p. 278; 1981 YEG, p. 227-228; 1982 YEG, p. 216
Assessment Reports: 090535; 090794; 090794; 090535; 090417; 060145
Other: Emond (1986)
Recent References: Potter (1987); 1988 YEX, p. 213, 220-222 (summary description)

9. STERLING (RIDGE) (115 P 15)

Classification: Zinc-lead-silver vein.
Comments: See No. 29 JABBERWOCK.

10-12, 17., 52. CLEAR CREEK EAST (JOSEPHINE, RHOSGOBEL, PUKELMAN, LEWIS, RUM) (115 P 14)

Geology: Clastic rocks of the Upper Proterozoic to Lower Cambrian 'Grit Unit' are intruded by several phases of late Cretaceous felsic plutonic and hypabyssal rocks. Three types of mineralization are present: 1) scheelite gold-bearing calc-silicate skarn (RHOSGOBEL); 2) scheelite gold sheeted

quartz veins (PUKELMAN and RHOSGOBEL) and auriferous arsenopyrite-bearing quartz vein (JOSEPHINE, RUM); and 3) silver bearing galena-quartz veins (LEWIS).
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal tungsten-gold skarn and sheeted veins: gold vein and sheeted vein; silver-lead vein.
References:

INAC Reports: 1981 YEG, p. 228-229; 1982 YEG, p. 216; 1979-80 YGE, p. 276-280
Assessment reports: 090926; 092146; 091368
Other: Emond (1986); Aho (1949); Bostock (1948, p. 11; 1964; 1979); Garrett (1971); Green (1972); Roddick (1967); Tempelman-Kluit (1976)
Recent References: 1988 YEX, p. 224-229 (summary description, map, photos, assays)

14. MOOSE RIDGE (115 P 11)

Classification: Silver-lead-iron occurrence.
References:
N.C.M.I.

17. LEWIS (115 P 15)

Comments: See No. 10, 12 etc. CLEAR CREEK EAST

20. OLIVER CREEK (EPD) (115 P 15)

Geology: Micaceous quartzite, phyllite and argillaceous quartzite of the Upper Proterozoic to Lower Cambrian 'Grit Unit' are intruded by a porphyritic quartz monzonite plug. The country rocks are cut by east-west striking breccia veins that dip steeply south to vertical. Vein mineralogy includes quartz, calcite, fluorite, tourmaline, cassiterite, pyrrhotite, chlorite, pyrite, chalcopyrite, sphalerite and native silver.
Geochemistry: The best diamond drill intersection assayed 1.03% Sn and 12 g/t Ag across 6.0m.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal tin-silver breccia veins.
References:

INAC Reports: 1978 MIR, p. 22; 1979-80 YGE, p. 278-279; 1981 YEG, p. 229; 1982 YEG, p. 217
Assessment Reports: 090476; 090758; 090542; 090809; 090829; 091015
Other: Emond (1986, 1985, 1983)

22., 55. SUNSHINE CREEK WEST & EAST (SP) (115 P 15)

Classification: Tin-silver breccias.
References:

INAC Reports: 1979-80 YGE, p. 279; 1981 YEG, p. 217
Assessment Reports: 090713; 091070; 091357
Other: Emond (1986)
Recent References: Potter (1987); 1988 YEX, p. 214-217 (summary description includes photos)

25. CROOKED (115 P 1)

Classification: Gold vein and disseminations.
Geochemistry: Rock chips of altered sericitic quartzite with feldspar eyes contained up to 0.36 oz/t Au.
Comments: Prospector performed some blasting of shear zone.
References:
No previous references.

27. MAHTIN (115 P 15)

Classification: Silver-tin vein, breccia.
References:
INAC Reports: 1981 YEG, p. 229-230
Other: Emond (1986)
Recent References: Potter (1987); 1988 YEX, p. 217 (summary description)

29., 9. JABBERWOCK, STERLING (RIDGE, NEL) (115 P 15)

Geology: Metasedimentary rocks of the Upper Proterozoic and Lower Cambrian 'Grit Unit' are intruded by small syenitic plugs and biotite-K-feldspar porphyry dykes. Cassiterite and pyrrhotite occur in vuggy arsenopyrite-tourmaline-bearing breccia veins, in fissure veinlets with K-feldspar and in vuggy quartz-iron-oxide-filled fractures.
Geochemistry: Breccia veins contain up to 64 ppm Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal tin-silver veins, breccias and sheeted veins.
References:
INAC Reports: 1978 MIR, p. 22-23; 1979-80 YGE, p. 278
Assessment Reports: 090796; 091008; 090474; 090796; 091008
Other: Emond (1986)
Recent References: Potter (1987); 1988 YEX, p. 217-219 (summary description, assays, photos)

30. ORE (MAY CREEK) (115 P 15)

Geology: Quartzite and limestone are intruded by several granitic dykes. Mineralization consists of galena, malachite and smithsonite (?) in a massive vein and as matrix in a narrow breccia zone which occurs on either side of the vein.
Geochemistry: Grab samples of material from a dump near the trenches and adit assayed up to 25 oz/ton Ag and 70% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-lead-copper veins.
References:
1978 MIR, p. 23

38. SNATCH (115 P 15)

Geology: Schist, argillite, limestone and quartz-feldspar crystal tuff of the Upper Proterozoic and Lower Cambrian 'Grit Unit" are intruded by feldspathic- and biotite lamprophyric dykes, quartz diorite and granite porphyries of Cretaceous age. Mineralization consists of minor galena and arsenopyrite in a few quartz-carbonate veins.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-lead veins.
References:
INAC Reports: 1981 YEG, p. 231
Assessment Reports: 090962; 090963

42. ZETA (115 P 14)

Geology: Lower Paleozoic sedimentary rocks are intruded by the Cretaceous Lost Horses Stock and a quartz-feldspar porphyry dyke. The stock is zoned inwards from K-feldspar phyric hornblende-biotite syenite to quartz syenite and tourmaline-bearing granite. A greisen vein along a northeast-trending fault is traceable over 150 m of strike to a depth of 50 m and is bounded by 5-10 m wide zones of intense clay, kaolinite and talc alteration. It consists of equal amounts of quartz and black tourmaline with up to 10% arsenopyrite and variable amounts of jamesonite-boulangerite. A weak stockwork developed in the contact hornfels contains pyrite, arsenopyrite, jamesonite-boulangerite, tourmaline, muscovite and cassiterite.
Geochemistry: Near surface, the vein has been leached and silver assays are up to 137 g/t whereas deeper levels contain up to 1234 g/t Ag with significant lead and antimony values. Tin mineralization averages 0.1% throughout the vein.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver-tin veins and stockwork.
References:
INAC Reports: 1984 YEX, p. 220-221; 1985-86 YEX, p. 381
Assessment Reports: 091590; 091782; 092675
Recent References: 1988 YEX, p. 220 (drilling, assays)

47. SNARK (115 P 15)

Classification: Tin-tungsten-copper-zinc-gold-silver skarn.
References:
INAC Reports: 1971-72 MIR, p. 20-21; 1978 MIR, p. 22; 1979-80 YGE, p. 278; 1981 YEG, p. 227-228
Other: Bostock (1948, p. 11)
Recent References: 1988 YEX, p. 220-222 (summary description, assays)

49. QUEST (115 P 15)

Geology: Gritty quartzose phyllite and quartzite interbedded with minor calcareous phyllite and limestone here form the Upper Proterozoic to Lower Cambrian 'Grit Unit'. These rocks are intruded by Cretaceous biotite-hornblende quartz monzonite and two-mica granite stocks and the entire sequence by quartz-feldspar porphyry dykes. Manganese-rich limonite cavity fillings in narrow (up to 3 cm wide), drusy, coxcomb quartz veins and galena-sphalerite-quartz veins occur as float.

Geochemistry: The manganese-rich float assays up to 2600 ppb Au and 195 g/t Ag, less than 1% Pb and commonly more than 1% Zn. The sulphide-bearing float assayed up to 7.9 g/t Au, 5424 g/t Ag and 6.7% Pb.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-lead-zinc veins.
References:
INAC Reports: 1985-86 YEX, p. 383
Assessment Reports: 091879
Recent References: 1987 YEX, p. 307

52. RUM (115 P 14)

Comments: See No. 10-12, etc. CLEAR CREEK EAST.

55. SUNSHINE CREEK EAST (SP) (115 P 15)

Comments: See No. 22. SUNSHINE CREEK WEST (SP)

116 A

3. RAMA (116 A 9)

Classification: Copper-silver-lead vein.
References:
N.C.M.I.

8. HART RIVER (116 A 10)

Geology: Dolomite, argillaceous dolomite, argillite, mafic lavas and volcaniclastics form the upper part of the Helikian Gillespie Lake group. The argillite hosts a tabular, lens-like body of massive sulphides that has internal layering, footwall silicification and stringer veins and hanging wall and lateral facies bedded chert. Mineralogy includes pyrite, pyrrhotite, chalcopyrite, sphalerite and galena.
Reserves: Estimated reserves exceed 0.5 million tons grading 0.04 oz/ton Au, 1.45 oz/ton Ag, 1.45% Cu, 0.87% Pb and 3.65% Zn.
Classification: Helikian synsedimentary and volcanogenic copper-lead-zinc-gold-silver massive sulphide.
References:
INAC Reports: 1984 YEX, p. 225
Assessment Reports: 091695
Other: Olsson (1973); Morin (1978, p. 22-24)
Recent References: 1987 YEX, p. 321-322; 1988 YEX, p. 232-233

11. GOLD (MIKE, HAMILTON) (116 A 5)

Geology: Quartzite, chert and argillites are intruded by a small syenite stock. Mineralization consists of quartz-arsenopyrite veins within the syenite near the hornfels-stock contact. Two mineralized zones are present and trend easterly with steep dips. The south zone is an average of 1.2 m wide and has been traced for a distance of 300 m.
Geochemistry: Grab samples from the south zone assayed up to 53.06 g/t Au and the north zone up to 15.02 g/t Au and 0.27% Co.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver-cobalt veins.
Samples collected by Morin:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
29	130	4.0	0.09%	110	110
30	26	2.0	660	42	100
31	0.086 opt	1.53 opt	0.87%	0.04%	130
	Sb ppm	Te ppm	Mn ppm	W ppm	Mo ppm
29	90.0	LT 0.1	220	25	5.0
30	13.0	LT 0.1	620	42	13.0
31	260.	12.0	22	LT 100	8.0

SAMPLE	Cd ppm	As ppm	Hg ppb	Tl ppm
29	1	410	320	20
30	2	2900	LT 10	LT 20
31	LT 1	GT 10 000	160	LT 20

	Bi ppm	U ppm
29	3.2	8.1
30	2.4	12.0
31	80.0	1.2

Sample Description
29 - Drill core interval 65.5 to 68.0 ft. from DDH-2 collared at 4680 ft a.s.l.; fine-grained altered dacite porphyry with very minor disseminated chalcopyrite;
30 - Drill core interval 78.0 to 80.0 ft. from DDH-2; coarse-grained propylitically altered feldspar porphyry with arsenopyrite and chalcopyrite;
31 - Composite grab sample from trench at 4750 ft. a.s.l.; white quartz vein with anhedral coarse grained disseminated and interstitial blebs of chalcopyrite, arsenopyrite and galena.

References:

INAC Reports: 1976 MIR, p. 139-140; 1982 YEG, p. 219
Assessment Reports: 091446

12. RIMROCK (116 A 4)

Geology: Cambro-Ordovician sedimentary rocks of the Kechika Group are intruded by a small stock and dyke swarms of porphyritic quartz monzonite. Veins occur along recessive, rusty-weathering fault zones cutting calc-silicate hornfels. They are commonly associated with chloritized porphyritic quartz monzonite dykes and two are approximately 1 m wide and about 100 m long.
Geochemistry: Assay results for one of the veins ran slightly in excess of 350 g/t Ag over 0.6 m for much of the strike length.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal silver veins.
References:

INAC Reports: 1981 YEG, p. 233
Assessment Reports: 090917
Other: Barrette (1982 - includes map, p. 34-37)

14. HOT (116 A 14)

Geology: Argillite, shale and quartzite of Proterozoic age are overlain unconformably by grey, massive bedded limestone and dolomite of Ordovician and Silurian age. A linear zone of brecciated grey sparry dolomite in the younger carbonates hosts smithsonite with minor galena, sphalerite and pyrite.
Geochemistry: Channel samples from three trenches across this zone gave the following assays:

Trench Length	Ag oz/ton	Pb %	Zn %
15 ft.	0.12	0.19	1.18
35 ft.	0.06	0.13	0.52
12 ft.	1.76	3.98	7.32

Classification: Cretaceous (?) magmato-hydrothermal, (?) intrusive-distal zinc-lead-silver vein breccia.
References:

INAC Reports: 1974 MIR, p. 76-77; 1975 MIR, p. 82-83

17. PHILP (116 A 5)

Classification: Copper-gold-silver skarn.
References:
N.C.M.I.

19. IDA (116 A 4)

Geology: Sedimentary and volcanic rocks of Ordovician to Devonian age are intruded by several small stocks, dykes and plugs of Cretaceous hornblende monzonite. Hydrothermal alteration and silicification has affected an area of 2 km by 1.8 km within which disseminated and stockwork tourmaline, arsenopyrite, pyrite and chlorite occur locally in both the intrusive rock and the hornfels.
Geochemistry: Rock chip sampling revealed an east-west trending 800 m by 300 m area in which samples averaged 0.5 g/t Au and within which two zones exceeded 5.0 g/t Au.

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
34-A	11	LT 0.5	4.0	22	24.0
35-B	15	0.5	28.0	38	39.0
36-C	LT 1	LT 0.5	15.0	11	10.0
37-D	71	0.5	60.0	15	43.0
38-E	75	0.5	72.0	15	28.0
39-F	150	LT 0.5	7.0	8	7.0
40-G	370	1.5	35.0	20	25.0
41-I	700	2.5	550.	7	37.0

	Cd ppm	Mn ppm	As ppm
34-A	LT1	120	30
35-B	2	400	530
36-C	LT 1	11	44
37-D	1	210	210
38-E	2	190	260
39-F	LT 1	20	63
40-G	2	160	1900
41-I	LT 1	510	2500

	Sb ppm	Te ppm	Hg ppb	Tl ppm
34-A	12.0	LT 0.1	LT 10	LT 20
35-B	61.0	LT 0.1	LT 10	LT 20
36-C	30.0	LT 0.1	20	LT 20
37-D	13.0	LT 0.1	LT 10	20
38-E	18.0	LT 0.1	LT 10	20
39-F	22.0	NSS	900	20
40-G	18.0	0.3	LT 10	LT 20
41-I	24.0	0.4	LT 10	LT 20

SAMPLE	U ppm	Bi ppm	W ppm	Mo ppm
34-A	4.1	0.7	LT 1	3.0
35-B	5.0	3.6	6	4.0
36-C	16.0	0.7	4	1.0
37-D	5.3	1.6	4	11.0
38-E	5.7	1.6	5	3.0
39-F	6.4	2.0	7	2.0
40-G	11.0	4.4	3	15.0
41-I	1.4	20.0	8	29.0

Sample Description
34-A - Porphyritic monzonite with 1 cm K-feldspar phenocrysts;
35-B - Granophyric clots with quartz cores and maroon fringes (biotite?);
36-C - Quartz-feldspar porphyry dyke with highly argillized feldspar phenocrysts; disseminated tourmaline;
37-D - Equigranular monzonite with disseminated arsenopyrite;
38-E - Crowded feldspar porphyry with quartz-tourmaline fractures;
39-F - Creamy white siliceous hornfels with quartz-tourmaline fractures;
40-G - White quartzite with tourmaline-quartz fractures;
41-I - Pale pink granular hornfels with abundant fractures filled with quartz and tourmaline.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver disseminations and vein stockwork.
References:
INAC Reports: 1979-80 YGE, p. 282; 1981 YEG, p. 234
Assessment Reports: 090781; 090908; 092149; 092680
Recent References: 1988 YEX, p. 233 (assays)

20. STROKER (116 A 8)

Geology: Precambrian to Cambrian silic-clastic sedimentary rocks form the southern limb of a large, east-trending anticline.
Geochemistry: Up to 3.4 g/t Au occurs over intervals less than 3 m in isolated fracture zones occupying the hinge zones of minor folds within the limb of the main anticline.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal gold veins.
References:
INAC Reports: 1981 YEG, p. 234

116 B

4. UNEXPECTED (116 B 3)

Geology: Carbonaceous quartzite and schist are intruded by a late Cretaceous quartz-feldspar porphyry stock. The porphyry contains traces of fluorite, zeolites in miarolitic cavities and topaz.
Geochemistry: MacLean reported values of 1.4 g/t Au and 2.1 g/t Ag across 1 m of fluorite-bearing porphyry.
Classification: Late Cretaceous magmato-hydrothermal, epizonal, intrusive-proximal gold-silver disseminations.
Comments: Also known as SURPRISE
References:
INAC Reports: 1978 MIR, p. 28-29; 1981 YEG, p. 238
Assessment Reports: 090556
Other: MacLean (1914, p. 124-125); Debicki (in progress)

5. VIRGIN (116 B 3)

Geology: Chlorite-muscovite-feldspar-quartz schist is cut by abundant veins and veinlets of quartz with accompanying pyrite and minor galena and chalcopyrite.
Geochemistry: A sample collected by MacLean assayed 25.5 g/t Au and 10.0 g/t Ag. Samples collected by Debicki (1988) were trace in gold but anomalous in barium.
Classification: Mesozoic metamorpho-hydrothermal gold veins.
Comments: Also JEAN claim
References:
INAC Reports: 1983 YEG, p. 277; 1984 YEX, p. 233-234
Assessment Reports: 091563
Other: MacLean (1914, p. 41-49); Debicki (1984, in progress)

6. MACLEAN (116 B 3)

Geology: Carbonaceous schist and quartzite with possible mafic metavolcanics are thrust over intercalated mafic metavolcanics and black chert. The lower plate rocks are weakly calcareous and contain pyrite and abundant disseminated dolomite. Narrow quartz veins cut across the foliation and thrust fault and were explored by underground workings.
Geochemistry: Samples collected by MacLean (1914) and Debicki (1988) gave trace gold though a 1.8 tonne mill test reportedly returned almost 68.6 g/t Au (unconfirmed by available records).
Classification: Mesozoic metamorpho-hydrothermal gold veins.
Comments: Also known as Golden Age.
References:
INAC Reports: 1984 YEX, p. 230-231
Assessment Reports: 091560
Other: Debicki (in progress)

8. LEPINE (116 B 3)

Geology: Chlorite-quartz-muscovite and quartz-muscovite schist and minor carbonaceous quartzite are intruded by dykes of altered, unfoliated quartz porphyry. The schists are locally silicified adjacent to the dykes and both are completely decomposed to at least 4.6 m depth.
Geochemistry: The decomposed material constituted the ore which reportedly returned up to 8.57 g/t Au.
Classification: Cretaceous to Tertiary magmato-hydrothermal, mesozonal, intrusive-proximal gold disseminations.
References:

INAC Reports: 1984 YEX, p. 232-233
Assessment Reports: 091564
Other: MacLean (1914, p. 114-115)

12. WEST DAWSON (116 B 3)

Geology: Chalcopyrite, galena and pyrite occur in an epidote-calcite skarn zone 12.5 cm thick and in a steeply dipping shear zone up to 0.6 m wide.
Geochemistry: A selected sample collected by Debicki (1988) from an adit dump contained 0.6% Cu, 0.9% Pb and 6.9 g/t Ag.
Classification: Cretaceous magmato-hydrothermal copper-lead-silver skarn.
References:

Debicki (1984, in progress)

28. ROAL (116 B 5)

Classification: Zinc-lead-(silver-tin) skarn.
References:

Cockfield (1928a, p. 9)

29. SILVER CITY (116 B 5)

Geology: Sedimentary rocks including phyllite, limestone and limy shale, mafic metavolcanics and ultramafics are highly sheared and thrust-faulted. Quartz-carbonate alteration locally contains galena, sphalerite and tetrahedrite and appears to be altered ultramafic rock localized along a thrust fault (J. Mortenson, personal communication).
Geochemistry: A specimen of quartz-carbonate-sulphide rock is reported to have assayed 0.02 oz/ton Au, 127.3 oz/ton Ag, 3.8% Pb and 0.2% Zn.

Samples collected by Morin are presented below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
11	46	12.0 opt	390.	1.93 %	3100.
12	6	7.0	9.0	200	140.
13	4	2.0	6.5	54	46.0

SAMPLE	Cd ppm	Sb ppm	Mn ppm	As ppm	Hg ppb
11	30	650.	370	0.30 %	690
12	LT 1	20.0	1600	670.	30
13	LT 1	20.0	300	68.0	30

	Ba ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
11	40	LT 3	INF	8	1
12	40	LT 3	0.3	4	LT 1
13	60	LT 3	0.1	6	LT 1

Sample Description:
11 - High grade float near trailer; pale green equigranular carbonate cut by coarse brown carbonate stockwork; contains blebs of tetrahedrite, galena and stibnite (?);
12 - Pale green granular carbonate cut by stockwork of quartz veinlets and white carbonate;
13 - Pale green to brown granular carbonate cut by stockwork of white carbonate and quartz (?); disseminated minor fine-grained limonite, goethite and pyrite

Classification: Mesozoic metamorpho-hydrothermal silver-lead veins.

References:

INAC Reports: 1971-72 MIR, p. 15-16; 1985-86 YEX, p. 393-394

Assessment Reports: 091876

Other: Mortenson (1988); Green (1972, pp. 138-139); Green and Godwin (1963, p. 20); Green and Godwin (1964, p. 18-19); Green (1965, p. 23-25); Green (1966, p. 23-24)

40. SPOTTED FAWN GULCH (116 B 7)

Geology: Two veins within a greenstone sill of Cretaceous or older age contain galena, pyrite and calcite. They range up to 16 in. and 10 in., respectively, but pinch rapidly to less than an inch thick in a distance of 25 ft.

Geochemistry: Samples taken by Green (1972) assayed from 29.96 oz/ton Ag and 18.62% Pb to 105.0 oz/ton Ag and 63.36% Pb.

Classification: Cretaceous magmato-hydrothermal, mesozonal silver-lead veins.

References:

INAC Reports: 1974 MIR, p. 73-74

Other: Green (1972, p. 137-138); Cockfield (1919b, p. 15-17)

43. MULTIPLY (116 B 8)

Geology: Sedimentary rocks on the east side of the Tombstone Mountain Stock include quartzite that is cut by a sheeted system of more than 11 veins. Pyrrhotite, pyrite and arsenopyrite also occur within the quartzite as disseminations and as veinlet stockworks with tourmaline and chlorite.

Geochemistry: Analyses of samples collected by Morin are presented below:

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
14	5700	4.0	49.0	78	21.0
15	30	1.5	340.	42	110.
16	4000	10.0	81.0	350	23.0
17	2700	22.0	100.	510	16.0
18	33	1.0	20.0	22	13.0
19	0.34 opt	61.0	390.	1800	72.0
20	37	1.5	140.	22	11.0
21	10	LT 0.5	10.0	20	53.0

SAMPLE	Cd ppm	Ba ppm	Mn ppm	As ppm	Hg ppb
14	LT 1	60	42	10.8 %	130
15	LT 1	380	830	0.04 %	LT 10
16	LT 1	60	46	7.26 %	10
17	LT 1	40	37	13.3 %	LT 10
18	LT 1	120	300	0.19 %	LT 10
19	2	20	32	14.7 %	LT 10
20	LT 1	80	54	0.04 %	LT 10
21	LT 1	800	190	150.	LT 10
	Sb ppm	Sn ppm	Bi ppm	W ppm	Mo ppm
14	130	LT 3	0.11 %	LT 1	4
15	INF	LT 3	INF	1	LT 1
16	90.0	5	980.	LT 1	3
17	240.	7	0.19 %	40	2
18	INF	LT 3	30.0	1	LT 1
19	370.	7	0.41 %	LT 1	3
20	INF	LT 3	70.0	5	1
21	3.5	LT 3	9.4	8	1

Sample Description:
14 - Quartz vein with coarse-grained arsenopyrite blebs and open-spaced terminated quartz crystals; granodiorite-diorite wallrock; 8 cm wide vertical vein trending 095 degrees;
15 - Diorite wallrock with very fine-grained disseminated pyrite; approximately 5 m north of sample 14;
16 - Arsenopyrite-quartz vein; 10 cm wide; strike 086 degrees and dip 80 degrees to north; 5 m north of sample 14;
17 - Arsenopyrite-quartz vein in granodiorite; 16 cm wide; 15 m south of sample 16;
18 - Gypsum-quartz-limonite breccia float in creek;
19 - Arsenopyrite-galena-quartz vein with wallrock inclusions; 1 m wide;
20 - Quartzite with pyrite, pyrrhotite stockwork and disseminations and stockwork of tourmaline (?) and chlorite;
21 - Breccia with quartzite clasts in quartz-limonite matrix; abundant vugs with quartz crystal linings; float in creek

Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-silver veins.

References:

Tempelman-Kluit (1965, p. 35-36)

47. FIFTEEN MILE (116 B 14)

Geology: Lenses of dolomite (metasomatic after serpentine?) occur in quartz-mica schist. Cockfield (1928) reported as follows: "These lenses have been highly faulted, and are difficult to follow for any distance. The dolomite contains seams of galena and zinc blende, with subordinate chalcopyrite, malachite and azurite. These seams range in thickness from less than 1 inch up to about 8 inches, but, as a whole, the mineralization is scanty."

Geochemistry: Picked samples of float on the beach have yielded values as high as 500 oz/ton Ag.

Classification: Mesozoic metamorpho-hydrothermal silver-lead-zinc veins.

References:

Cockfield (1928, p. 578); Mortenson (1988)

66. KIWI (116 B 10,15)

Geology: Proterozoic dolomite is overlain by porous limy dolomite of probable Silurian age. Stockwork and breccia mineralized with smithsonite, limonite and galena occur in fracture zones in the younger dolomite over a possible length of 600 m.
Geochemistry: Chip samples from seven known occurrences range from 5 to 29% Zn, 0.1 to 30% Pb and trace to 178.3 g/t Ag over 1 to 8 m intervals.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-distal lead-zinc-silver stockwork and breccia.
References:

INAC Reports: 1974 MIR, p. 75; 1975 MIR, p. 83-84; 1985-86 YEX, p. 394-395
Assessment Reports: 091901

73. AJ (O'BRIEN) (116 B 7)

Geology: The mid-Cretaceous Antimony Mountain syenite stock intrudes clastic sedimentary rocks of the 'Grit Unit'. Three zones of arsenopyrite-rich vein swarms cut hornfelsed quartzite on the west side of the stock. The veins have tourmaline-rich borders and are 0.46 to 2.13 m wide.
Geochemistry: Gold values up to 120 g/t over 1.31 m of vein are reported.
Samples collected by Morin are reported below:

SAMPLE	Au oz/ton	Ag oz/ton	Cu ppm	Pb ppm	Zn ppm
115	0.24	TRACE	21	12	18
116	3.07	0.22	330	48	23
117	1.18	TRACE	580	44	30
118	0.20	0.30	58	44	8
120	0.38	0.43	130	76	12
121A	1.69	TRACE	59	36	15
121B	0.36	TRACE	1490	68	42

	Cd ppm	Mn ppm	As ppm	Se ppm
115	LT 1	16	84 000	LT 10
116	LT 1	5	-	LT 10
117	LT 1	5	-	LT 10
118	3	5	70 000	LT 10
120	LT 1	10	-	LT 10
121A	LT 1	5	-	LT 10
121B	1	15	-	LT 10

	Sb ppm	Te ppm	Hg ppb	Tl ppm
115	250	17.0	1900	LT 20
116	1200	99.0	1500	LT 20
117	1400	93.0	12 000	LT 20
118	470	29.0	620	LT 20
120	490	29.0	6800	LT 20
121	1600	150	480	LT 20
121B	390	29.0	10	LT 20

SAMPLE	B ppm	Bi ppm	Mo ppm
115	0.89 %	40.0	20
116	0.17 %	1000.	72
117	65	600	24
118	1.3 %	28.0	56
120	1.2 %	88.0	20
121A	0.13 %	600	32
121B	75	230	12

115 - Vein breccia with clasts of quartzite in leached matrix of black, very fine-grained sulphides and tourmaline; east wall of creek, north side of vein, main showing; grab sample across 1.3 m;
116 - Vein breccia with clasts of quartzite set in matrix of arsenopyrite; main showing on east wall of creek; occurs as lenses within No. 115;
117 - Vein breccia with quartzite clasts set in massive arsenopyrite and scorodite; main showing on east wall of creek; chip sample across 1 m;
118 - Vein breccia with lenses of quartz and massive arsenopyrite in highly leached matrix of black very, fine-grained sulphides and tourmaline; main showing on east wall of creek; grab sample across 0.8 m at south side of vein;
120 - Sheet-fractured quartzite with arsenopyrite, pyrite and tourmaline in fractures; main showing on west wall of creek; grab sample;
121A - Massive arsenopyrite; main showing on west wall of creek; grab sample;
121B - Massive arsenopyrite, quartz and chalcopyrite; main showing on west wall of creek
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold vein.
References:

INAC Reports: 1979-80 YGE, p. 289-291 (includes map); 1981 YEG, p. 279 (map); 1983 YEG, p. 278; 1984 YEX, p. 235-236
Assessment Reports: 091576

78. MARN (116 B 7)

Geology: The 91 Ma-old Mt Brenner Stock consists of diorite, monzonite and syenite and associated dykes which intrude Ordovician-Silurian, Permian and Jurassic sedimentary rocks. An 800 m thick diorite sill extends northwest from the stock and gold-copper skarn mineralization is developed within the Permian Tahkandit Formation beneath and along the margins of this sill. The diopside-amphibole skarn hosts massive pyrrhotite, chalcopyrite and arsenopyrite.
Reserves: Reserves are estimated at 275 000 to 330 000 tonnes with an average of 8.6 g/t Au, 1% Cu, 0.1% W and 17 g/t Ag.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal gold-copper-tungsten-silver skarn.
References:

INAC Reports: 1979-80 YGE, p. 287-288; 1982 YEG, p. 225; 1983 YEG, p. 278-279; 1985-86 YEX, p. 396
Other: Brown and Nesbitt (1987); Brown (1985); Anderson (1987)

81. THOR (116 B 8)

Geology: The mid-Cretaceous Antimony Mountain Stock intrudes sedimentary rocks of late Proterozoic to early Paleozoic age. Country rocks are hornfelsed at the margin of the pluton and are cut by eight veins on the west side. The veins contain arsenopyrite and pyrite with lesser chalcopyrite, pyrrhotite,

minor sphalerite and galena. Vein minerals are zoned from the walls inward with dark ferroactinolite on both walls, quartz in terminated crystals next to it, and coarsely crystalline sulphides occupy one third of the vein in the partly open space in the central core.
Geochemistry: Assay values from material in the veins range from highs of 10% Cu, 3% Pb, 2.5% Zn, 300 g/t Ag and 30 g/t Au to average values of 2% Cu, 1% Pb, 0.2% Zn, 30 g/t Ag and 3 g/t Au over the width of the veins.
Analyses of samples collected by D.J. Tempelman-Kluit are presented below:

SAMPLE	Au oz/ton	Ag oz/ton	Cu %	Pb %	Zn %
147	0.21	2.35	1.70	0.09	0.05
148	0.05	12.3	1.35	0.59	0.05

	Cd %	Mn ppm	Se ppm
147	TRACE	13	LT 10
148	TRACE	8	LT 10

	Sb %	Te ppm	Hg ppb	Tl ppm
147	0.09	96.0	580	LT 20
148	0.26	140	270	LT 20

	B %	Sn ppm	Bi ppm	Mo ppm
147	0.43	20	880	20
148	0.16	80	560	8

Sample Description:
147 - Massive arsenopyrite with minor quartz, tourmaline and chalcopyrite; grab sample from BG vein;
148 - Arsenopyrite, quartz, tourmaline and chalcopyrite; grab sample from JC vein
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal copper-lead-zinc-silver-gold veins.
References:
INAC Reports: 1979-80 YGE, p. 289-291 (includes map); 1981 YEG, p. 279 (map); 1984 YEX, p. 239
Assessment Reports: 090552
Other: Anderson (1987)

86. TAK (116 B 10)

Geology: The mid-Cretaceous Tombstone Mountain Stock consists of a central zone of syenite flanked by quartz monzonite and quartz diorite toward the margin. It intrudes sedimentary rocks of the Grit Unit and Road River Formation, including quartzite, chert, shale, limestone and sandstone. On the north side of the Stock, the sedimentary rocks are cut by narrow, discontinuous quartz-carbonate veins with poddy galena and arsenopyrite.
Geochemistry: A trench on No. 1 vein exposed a 40 cm wide galena-arsenopyrite-siderite vein which assayed 11% Pb, 274 g/t Ag and 6.86 g/t Au.
Classification: Cretaceous magmato-hydrothermal, mesozonal, intrusive-proximal lead-silver-gold veins.
References:
INAC Reports: 1984 YEX, p. 236-237
Assessment Reports: 091607

116 C

14. MILLER (116 C 2)

Geology: Late Cretaceous to early Tertiary volcanic rocks lie upon a basement of metasedimentary and metavolcanic rocks. Silicification and kaolinization are common throughout the volcanic rocks and several quartz veins cut the volcanic rocks near the mouths of Miller and Glacier Creeks. Galena and minor chalcopyrite are found with massive pyrite in the quartz veins.
Geochemistry: Sampling in 1965 gave the following assays:

Sample	Au oz/ton	Ag oz/ton	Pb %	Zn %
A	0.04	12.5	26.4	4.7
B	0.08	0.80	1.2	0.4
C	0.02	33.5	85.5	0.6

Sample Description:
A - Galena-bearing vein; chip sample across 32 inch width with the exception of a 4 inch barren zone in the centre; wallrocks in altered volcanic rocks;
B - Vein of altered clay-rich material with some pyrite; chip sample across 18 inch width, about 10 ft. to the southwest along the vein;
C - Composite sample of three pieces of massive galena from the vein;
Classification: Late Cretaceous to Tertiary magmato-hydrothermal, epizonal, volcanic-hosted gold-silver-lead-zinc veins.
Comments: On north side of PER Group
References:
INAC Reports: 1985-86 YEX, p. 392
Assessment Reports: 091797
Other: Glasmacher (1984); Cockfield (1921a, p. 51-52); Green (1966, p. 26-28)

19. CONE HILL (116 C 7)

Geology: Silver-lead-gold vein
References:
N.C.M.I.

27. CASSIAR CREEK (116 C 8)

Geology: Quartz-mica schists contain abundant lenses of limestone locally and Cockfield (1928a) reported " ... one of these lenses carries galena and zinc blende in streaks and small masses. The streaks of galena apparently are short, and in most places the limestone is barren. The widest streak noted by those working the property measured about 8 inches and consisted of galena disseminated in limestone."
Geochemistry: A grab sample of galena-bearing material assayed 4.5 oz/ton Ag and 10.04% Pb.
Classification: Mesozoic metamorpho-hydrothermal silver-lead replacement.
Comments: Also known as Submarine.
References:
Cockfield (1928, p. 577); Mortensen (1988)

100. ROSE (RG) (116 C 7)

Classification: Gold vein.
References:
Assessment Reports: 092673
Recent References: 1988 YEX, p. 237-238 (assays)

116 K

2. RUSTY SPRINGS (TERMUENDE) (116 K 8)

Geology: Dolostone and dolostone breccia of the Devonian Ogilvie Formation is exposed in two structural domes. Sulphide veins are hosted in the dolomite and accompanied by dolomitization, silicification and argillic alteration (including natroalunite). Mineralization includes galena, sphalerite, tetrahedrite, barite, calcite and quartz. Sulphides are extensively altered near surface and replaced by smithsonite, malachite, azurite, plumbojarosite, cerussite, goethite and hematite.
Geochemistry: The three highest diamond drill hole intersections gave the following assays:

Interval	Ag g/t	Pb %	Cu %	Cd %
1.5 m (1980)	2021.	24.57	2.53	0.004
0.93 m (1982)	63.77	5.92	-	-
7.3 m (1982)	129.6	3.54	-	-

Classification: Cretaceous (?) magmato-hydrothermal, mesozonal, intrusive-distal silver-lead-zinc-copper veins.
References:

INAC Reports: 1977 MIR, p. 57-58; 1978 MIR, p. 31; 1979-80 YGE, p. 301-304 (includes map); 1982 YEG, p. 234; 1983 YEG, p. 288-289 (includes map)
Assessment Reports: 090532; 090685; 091410; 091504
Other: Kirker (1982, p. 48-50)

REFERENCES

INAC REPORTS:

1969-70 MIR: CRAIG, D.B. and LAPORTE, P.J., 1972. North of 60 - Mineral Industry Report 1969 and 1970, Volume 1 - Yukon Territory and southwestern sector, District of MacKenzie; Canada, Indian and Northern Affairs Canada, Northern Economic Development Branch, Report EGS 1972-1, 188 p.

1971-72 MIR: CRAIG, D.B. and MILNER, M.W., 1975. Mineral Industry Report 1971-72, Yukon Territory, EGS 1875-6, 169 p.

1973 MIR: SINCLAIR, W.D. and GILBERT, G.W., 1975. Mineral Industry Report 1973, Yukon Territory, EGS 1975-7, 177 p.

1974 MIR: SINCLAIR, W.D., MALONEY, J.M. and CRAIG, D.B., 1975. Mineral Industry Report 1974, Yukon Territory; EGS 1975-9, 216 p.

1975 MIR: SINCLAIR, W.D., MORIN, J.A., CRAIG, D.B. and MARCHAND, M., 1976. Mineral Industry Report 1975, Yukon Territory, EGS 1976-15, 210 p.

1976 MIR: MORIN, J.A., SINCLAIR, W.D., CRAIG, D.B. and MARCHAND, M., 1977. Mineral Industry Report 1976, Yukon Territory, EGS 1977-1; Exploration and Geological Services Division, Yukon, 264 p.

1977 MIR: MARCHAND, J., MORIN, J.A. and CRAIG, D.B., 1979. Mineral Industry Report 1977, Yukon Territory, EGS 1978-9, 124 p.

1978 MIR: MORIN, J.A., MARCHAND, M. and DEBICKI, R.L. , 1980. Mineral Industry Report, 1978, Yukon Territory, Indian and Northern Affairs Canada, 87 p.

YUKON GEOLOGY AND EXPLORATION 1979-80. Exploration and Geological Services Divison, Yukon, Indian and Northern Affairs Canada, 364 p.

YUKON EXPLORATION AND GEOLOGY 1981. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 282 p.

YUKON EXPLORATION AND GEOLOGY 1982. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 259 p.

YUKON EXPLORATION AND GEOLOGY 1983. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 317 p.

YUKON EXPLORATION 1984. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 288 p.

YUKON EXPLORATION 1985-86. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 451 p.

YUKON EXPLORATION 1987. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 364 p.

YUKON EXPLORATION 1988. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 319 p.

OTHER REFERENCES:

ABBOTT, J.G., 1977. Structure and stratigraphy of the Mount Hundere Area, Southeastern Yukon, unpublished MSc. Thesis, Queens University, Kingston, Ontario, 111 p.

ABBOTT, J.G., 1981. A new geological map of the Mount Hundere and the area north; in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 49-50.

ABBOTT, J.G., 1982. Structure and stratigraphy of the MacMillan Fold Belt; Evidence for Devonian faulting; in Yukon Exploration and Geology 1981, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 22-30.

ABBOTT, J.G., 1985. Silver-bearing veins and replacement deposits of the Rancheria District; in Yukon Exploration and Geology 1983, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 34-44.

ABBOTT, J.G., 1986a. Epigenetic mineral deposits of the Ketza-Seagull district, Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 56-66.

ABBOTT, J.G., 1986b. Geology of the PLATA-INCA property, Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 109-112.

ABBOTT, J.G., 1987. Field Activities 1986; in 1985-86 Yukon Exploration, Exploration and Geological Services Division, Indian and Northern Affairs Canada, p. 83-84.

AHO, A.E., 1949. Mineralogy of some heavy sands of the McQuesten River Area, Yukon Territory; Unpublished BA Sc Thesis, University of British Columbia.

AMUKUN, S.W. and LOWEY, G.W., 1987. Geology of Sab Lake (105 B 7) and Meister Lake (105 B 8), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1987-1, two 1:50,000 scale maps with marginal notes.

ANDERSON, R.G., 1987. Plutonic rocks in the Dawson map area, Yukon; Geological Survey of Canada, Current Research, Paper 87-1A, p. 689-697.

BAILES, R.J., SMEE, B.W., BLACKADAR, D.W. and GARDNER, H.D., 1986. Geology of the JASON lead-zinc-silver deposits, MacMillan Pass, eastern Yukon; in J.A. Morin ed., Mineral deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 87-99.

BARRETTE, P., 1982. Metamorphism of sedimetary rocks by syenitic intrusions in the Tombstone Range 116 A 4, Yukon; in Yukon Exploration and Geology 1981, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 34-37.

BONHAM, H.F. Jr., 1980. Bulk-minable gold-silver deposits in cordilleran and island arc settings; in University of Toronto Ore Deposit Workshop notes, 1981, p. 7-1 - 7-23.

BOSTOCK, H.S., 1936. Preliminary report - prospecting possibilities of Teslin - Quiet Lake - Big Salmon area, Yukon; Geological Survey of Canada, Paper 36-2.

BOSTOCK, H.S., 1936b. Carmacks District, Yukon; Geological Survey of Canada, Memoir 189.

BOSTOCK, H.S., 1939. Mining Industry of Yukon 1938; Geological Survey of Canada, Memoir 220.

BOSTOCK, H.S., 1941. Mining Industry of Yukon 1939-40; Geological Survey of Canada, Memoir 234.

BOSTOCK, H.S., 1948. Preliminary Map, McQuesten, Yukon Territory (descriptive notes), Geological Survey of Canada, Paper 48-25.

BOSTOCK, H.S., 1957. Yukon Territory - selected field reports of the Geological Survey of Canada 1898 to 1933, Geological Suvery of Canada, Memoir 284.

BOYLE, R.W., 1965. Geology, geochemistry and origin of the lead-zinc-silver deposits of the Keno Hill - Galena Hill area, Yukon Territory (with short descriptions of the tin, tungsten and gold deposits); Geological Survey of Canada, Bulletin 111 (includes Map 1147A).

BROWN, I.J. and NESBITT, B.E., 1987. Gold-copper-bismuth mineralization in hedenbergite skarn, Tombstone Mountains, Yukon; in Canadian Journal of Earth Sciences, Volume 7, p. 2362-2372.

BROWN, P. and KAHLERT, B., 1986. Geology and mineralization of the Red Mountain porphyry molybdenum deposit, south-central Yukon; in J.A. Morin ed., Mineral Deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy Special Volume 37, p. 288-297.

CAIRNES, D.D., 1915. Upper White River District, Yukon, Geological Survey of Canada, Memoir 50.

CAIRNES, D.D., 1916. Wheaton district, southern Yukon; Supplement to Geological Survey of Canada, Memoir 31., Geological Survey of Canada Summary Reports for 1915.

CAMPBELL, D.D., 1965. Unpublished report on properties of Peso Silver Mines.

CAMPBELL, R.B. and TIPPER, H.W., 1971. Geology of Bonaparte Lake Map-Area, B.C., Geological Survey of Canada, Memoir 363.

CARLSON, G.G., 1987. Geology of Mount Nansen (115 I 3) and Stoddart Creek (115 I 6), Dawson Range area, central Yukon; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1987-2, two 1:30,000 scale maps with legend and text.

CATHRO, M., 1988. Gold and silver, lead deposits of the Ketza River District, Yukon; Preliminary results of fieldwork; in Yukon Geology, Volume 2, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 8-25.

CHISHOLM, E.O. and BROCK, J.S., 1967. The application of saturation prospecting techniques to Yukon exploration; Canadian Minerals Journal, Volume 88, No. 4, p. 136-139.

COATES, M.E., 1970. Report on diamond drilling CUB project, CUB and ROG mineral claim groups; unpublished report for Atlas Explorations Limited.

COCKFIELD, W.E., 1919a. Exploration in Yukon Territory; Geological Survey of Canada Summary Report for 1917B, p. 1-8.

COCKFIELD, W.E., 1919b. Silver-Lead Deposits of the Twelvemile area, Yukon; Geological Survey of Canada, Summary Report for 1918B, p. 15-17.

COCKFIELD, W.E, 1921. Sixty Mile and Ladue Rivers area, Yukon; Geological Survey of Canada, Memoir 123.

COCKFIELD, W.E., 1922. Silver-lead deposits of Davidson Mountains, Mayo District, Yukon; Geological Survey of Canada, Summary Report for 1921A, p. 1-6.

COCKFIELD, W.E., 1924. Silver-lead deposits of Beaver River area, Yukon; Geological Survey of Canada, Summary Report for 1923A, p. 22-28.

COCKFIELD, W.E., 1925. Upper Beaver River area, Mayo District, Yukon; Geological Survey of Canada, Summary Report for 1924A, p. 1-8 (includes Map 2064).

COCKFIELD, W.E., 1928b. Silver-lead deposits of Fifteen Mile Creek, Yukon; Geological Survey of Canada, Summary Report for 1927A, p. 8-10.

DARCH, W., 1981. Detailed exploration and diamond drilling on the Klondike Silver property; unpublished report for Terra Mining and Exploration Ltd.

DAWSON, K.M. and DICK, L.A., 1978. Regional metallogeny of the Northern Cordillera: Tungsten and base metal-bearing skarns in southeastern Yukon and southwestren MacKenzie; in Geological Survey of Canada, Current Research, Part A, Paper 78-1A, p. 287-292.

DAWSON, K.M., 1979. Regional metallogeny of the northern Cordillera: Recent stratiform base metal discoveries in Yukon Territory and District of Mackenize; in Current Research, Part A, Geological Survey of Canada, Paper 79-1A, p. 375-376.

DAWSON, K.M., 1964. Geology of the Mount Hundere lead-zinc-silver deposit, Watson Lake, Yukon, unpublished BSc Thesis, University of British Columbia, Vancouver, B.C.

DEBICKI, R.L., 1984. Bedrock geology and mineralization of the Klondike area (west) 115 O 14, 15 and 116 B 2, 3; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1984, 1:50,000 scale map with marginal notes.

DEBICKI, R.L., 1985. Bedrock geology and mineralization of the Klondike area (east) 115 O 9, 10, 11, 14, 15, 16 and 116 B 2; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1985, 1:50,000 scale map with marginal notes.

DEBICKI, R.L., (in progress) Geology and bedrock mineralization of the Klondike area (in progress).

DOHERTY, R.A., HART, C.J.R., HUNT, J. and WEGENAST, J. (Aurum Geological Consultants Inc.) 1988. Geology of Fenwick Creek (105 D 3) and Alligator Lake (105 D 6) map areas; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1988-2, two 1:50,000 scale maps with legend and text.

DUKE, J.L. and GODWIN, C.I., 1986. Geology and alteration of the Grew Creek epithermal gold-silver prospect, south-central Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 72-82.

EMOND, D.S., 1983. Geology of the EPD stanniferous breccia deposit, McQuesten area, 115 P, Yukon; in Yukon Exploration and Geology 1982, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 26-33.

EMOND, D.S., 1985. Geology, mineralogy and petrogenesis of the tin-bearing breccia/veins at Oliver Creek, McQuesten River area; Unpublished MSc. Thesis, Carleton University, Ottawa, Ontario, 196 p.

EMOND, D.S., 1986. Tin and tungsten veins and skarns in the McQuesten River area, central Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 113-118.

FINDLAY, D.C., 1967. The mineral industry of Yukon and southwestern District of MacKenzie, 1966; Geological Survey of Canada, Paper 67-40.

FINDLAY, D.C., 1969a. The mineral industry of Yukon Territory and southwestern District of MacKenzie, 1967, Geological Survey of Canada, Paper 68-68.

FINDLAY, D.C., 1969b. Mineral Industry of Yukon Territory and southwestern District of Mackenzie 1968, Geological Survey of Canada, Paper 69-55.

FOURNIER, R.O., 1985. Silica minerals as indicators of conditions during gold deposition; in Geologic Characteristic of Sediment- and Volcanic-Hosted Disseminated Gold Deposits - Search for an Occurrence Model, U.S. Geological Survey, Bulletin 1646, p. 15-26.

FRANKLIN, J.M., LYDON, J.W. and SANGSTER, D.F., 1981. Volcanic-associated massive sulphide deposits; in Economic Geology 75th Anniversary Volume, p. 485-627.

FRANZEN, J.P., 1986. Metal-ratio zonation in the Keno Hill District, Central Yukon; in Yukon Geology, Vol. 1; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 98-108.

GARRETT, R.G., 1971. Regional geochemical census of plutonic rocks in eastern Yukon Territory; Geological Survey of Canada, Paper 71-1A, p. 72-73.

GLASMACHER, U., 1984. Geology, petrography and mineralization in the Sixty Mile River area, Yukon, Canada; unpublished MSc. Thesis, Technical University - Aachen, W. Germany.

GLASMACHER, U., 1985. Placer gold in the Sixty Mile River area, Yukon Territory, Canada; in Proceedings of the 7th Annual Conference on American Placer Mining, Alaskan Prospectors Publishing Co.

GLEESON, C.F., 1970. Heavy mineral studies in the Klondike area, Yukon Territory; Geological Survey of Canada, Bulletin 173.

GODWIN, C.I., GABITES, J.E. and ANDRES, A., 1988. Lead table: a galena lead isotope database for the Canadian Cordillera; B.C. Ministry of Energy, Mines and Petroleum Resources, Paper 1988-4, 188 p.

GODWIN, C.I., 1976. Casino, Yukon Territory; a porphyry copper-molybdenum deposit; Canadian Institute of Mining and Metallurgy Special Volume 15, p. 344-358.

GOODFELLOW, W.D. and JONASSON, I.R., 1986. Environment of formation of the Howard's Pass (XY) Zn-Pb deposit, Selwyn Basin, Yukon; in J.A. Morin ed., Mineral Deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy Special Volume 37, p. 19-50.

GOODFELLOW, W.D., JONASSON, I.R., MORGANTI, J.M. and PARSLOW, G.R., 1983. Zonation of chalcophile elements about the Howard's Pass (XY) Zn-Pb deposit, Selwyn Basin, Yukon; Journal of Geochemical Exploration, Volume 19, p. 503-542.

GOODFELLOW, W.D., 1984. Geochemistry of rocks hosting the Howard's Pass (XY) stratabound Zinc-Lead deposit, Selwyn Basin, Yukon Territory; in Proceedings of the sixth Quadrenial IAGOD Symposium.

GRAPES, K. and DICKINSON, W.R., 1987. The Clear Lake massive suphide deposit, Yukon, Canada; A comparison of Paleozoic and recent sulphide textures; in Geological Society of America 1987 Annual Meeting and Exposition: Program with abstracts, Volume 19, No. 7, p. 681-682.

GRAPES, K., 1987. Geology of the Clear Lake stratiform lead-zinc-silver-barite deposit; unpublished MSc. Thesis, Carleton University, Ottawa, Ontario.

GREEN, L.H. and GODWIN, C.I., 1963. The Mineral Industry of Yukon Territory and southwestern District of MacKenzie, 1962; Geological Survey of Canada, Paper 63-38.

GREEN, L.H. and GODWIN, C.I., 1964. Mineral Industry of Yukon Territory and southwestern District of Mackenzie, Geological Survey of Canada, Paper 64-36. (MIR 1963)

GREEN, L.H., 1965. The Mineral Industry of Yukon Territory and southwestern District of Mackenzie, 1964, Geological Suvery of Canada, Paper 65-19.

GREEN, L.H., 1966. The Mineral Industry of Yukon Territory and southwestern District of Mackenzie 1965, Geological Survey of Canada, Paper 66-31. (MIR 1965)

GREEN, L.H., 1968. Lode mining potential of Yukon Territory, Geological Survey of Canada, Paper 67-36.

GREEN, L.H., 1971. Geology of Mayo Lake, Scougale Creek and McQuesten Lake map areas, Yukon Territory (105 M 15, 106 D 2, 106 D 3); Geological Survey of Canada, Memoir 357 (includes maps 1270A, 1269A, 1268A).

GREEN, L.H., 1972. Geology of the Nash Creek, Larsen Creek and Dawson map areas, Yukon; Geological Survey of Canada, Memoir 364 (includes Maps 1282A, 1283A, 1284A).

HARRISON, J.C., 1982. Petrology of the 'Ting Creek' alkalic intrusions, southeast Yukon; unpublished MSc. Thesis, University of Toronto, Toronto, Ontario.

HART, C.J.R. and PELLETIER, K.S., (Aurum Geological Consultants Inc.) 1989. Geology of Carcross (105 D 2) and part of Robinson (105 D 7) map areas; Exploration and Geological

Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1989-1, two 1:50,000 scale maps with legend and text.

HART, C.J.R. and PELLETIER, K.S., (Aurum Geological Consultants Inc.) 1989. Geology of Whitehorse (105 D 11) map area; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1989-2, one 1:50,000 scale map with legend and text.

HART, C.J.R., 1986. The geology of the Old Cabin Creek Massif, Selwyn Basin, Yukon Territory; unpublished BSc Thesis, McMaster University, Hamilton, Ontario, 111 p.

HEALD, P., FOLEY, N.K. and HAYBA, D.O., 1987. Comparative anatomy of volcanic-hosted epithermal deposits: acid-sulfate and adularia-sericite types; in Economic Geology, Volume 82., p. 1-26.

HENLEY, R.W. and ELLIS, A.J., 1983. Geothermal systems ancient and modern: a geochemical review; in Earth-Science Reviews, Volume 19, p. 1-50.

HYLANDS, J.J., 1966. Petrology and mineralogy of the Yukon antimony stibnite deposit, Yukon Territory, unpublished BSc. Thesis, University of British Columbia, Vancouver, B.C.

JACKSON, L.E., GORDEY, S.P., ARMSTRONG, R.L. and HARAKAL, J.E., 1986. Bimodal Paleogene volcanics near Tintina Fault, east-central Yukon and their possible relationship to placer gold; in Yukon Geology Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 139-147.

JENNINGS, D.S. and JILSON, G.A., 1986. Geology and sulphide deposits of Anvil Range, Yukon; in J.A. Morin, ed., Mineral deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 19-50.

JOHNSTON, J.R., 1937. Geology and mineral deposits of Freegold Mountain, Carmacks District, Yukon; Geological Survey of Canada, Memoir 214 (includes Map 405A).

JONASSON, I.R. and GOODFELLOW, W.D., 1986. Sedimentary and diagenetic textures, and deformation structures within the sulphide zone of the Howard's Pass (XY) Zn-Pb deposit, Yukon and N.W.T.; in J.A. Morin, ed., Mineral deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 51-70.

KINDLE, E.D., 1945. Geological reconnaissance along the Canol Road from Teslin River to MacMillan Pass, Yukon; Geological Survey of Canada, Paper 45-21 (including preliminary Map 45-21A\0.

KINDLE, E.D., 1953. Dezadeash Map-Area, Yukon Territory; Geological Survey of Canada, Memoir 268.

KIRKER, J., 1982. Petrographic and geochemical evidence for a hydrothermal origin of the rusty springs Pb-Zn-Ag prospect; in Yukon Exploration and Geology 1981, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 48-50.

KURAN, V.M., GODWIN, C.I. and ARMSTRONG, R.L., 1982. Geology and geochronometry of the Scheelite Dome area; Canadian Institute of Mining and Metallurgy Bulletin, Volume 75, No. 38, p. 137-142.

LAMBERT, M.B., 1974. The Bennett Lake cauldron subsidence complex, B.C. and Y.T.; Geological Survey of Canada, Bulletin No. 227.

LAZNICKA, P and EDWARDS, R.J., 1979. Dolores Creek, Yukon - a disseminated copper mineralization in sodic metasomatites; Economic Geology, Volume 74, p. 1352-1370 (map included).

LEES, E.J., 1936. Geology of the Teslin-Quiet Lake area, Yukon; Geological Survey of Canada, Memoir 203.

LITTLE, H.W., 1959. Tungsten deposits of Canada; Geological Suvery of Canada, Economic Geology Series, No. 17, p. 37.

LORD, C.S. 1944. Geological reconnaissance along the Alaska Highway between Watson Lake and Teslin River, Yukon and B.C., Geological Survey of Canada, Paper 44-25 (includes Preliminary Map 44-25A).

LOWEY, G.W. and LOWEY, J.F., 1986. Geology of the Spencer Creek (105 B 1) and Daughney Lake (105 B 2) map areas, Rancheria District, southeast Yukon, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1986-1, two 1:50,000 scale maps with text.

LOWEY, G.W., 1985. Auriferous conglomerates at McKinnon Creek, west-central Yukon (115 O 11); paleoplacer or epithermal mineralization?; in Yukon Exploration and Geology 1983, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 69-78.

LYNCH, G., 1986. Mineral zoning in the Keno Hill silver-lead-zinc mining district, Yukon; in Yukon Geology, Vol. 1; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 89-97.

MACLEAN, T.A., 1914. Lode mining in the Yukon: an investigation of quartz deposits in the Klondike Division; Canadian Department of Mines, Mines Branch, Publication No. 222.

MCCLAY, K.R. and BIDWELL, G.E., 1986. The geology of the TOM deposit, MacMillan Pass, Yukon; in J.A. Morin, ed., Mineral Deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 245-254.

MCCOLL, M., 1981. Lithogeochemistry of the Clear Lake Zinc-Lead Deposit, Yukon Territory; Unpublished BSc Thesis, University of Waterloo.

MCCONNELL, R.G., 1905. Officers Reports - Yukon Territory; in Annual Report of the Geological Survey of Canada, Volume XIV (New Series) 1901, p. 25-39.

MCDONALD, B.W.R. and GODWIN, C.I., 1986. Geology of Main Zone at Mount Skukum, Wheaton River area, southern Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 6-10.

MCDONALD, B.W.R., GODWIN, C.I. and STEWART, E.B., 1986. Exploration geology of the Mount Skukum epithermal gold deposit, southwestern Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 11-18.

MCDONALD, B.W.R., 1987. Geology and genesis of the Mount Skukum Tertiary epithermal gold-silver vein deposit, southwestern Yukon Territory (105 D SW), unpublished MSc. Thesis, University of British Columbia, Vancouver, B.C., 177 p.

MCINNES, B.I.A., 1987. Geological and precious metal evolution at Freegold Mountain, Dawson Range, Yukon; unpublished MSc. Thesis, McMaster University, Hamilton, Ontario, 230 p.

MCINTOSH, R., 1967. Report on the Heather claims; unpublished report for Hudson Bay Exploration and Development.

MEINERT, L.D., 1986. Gold in skarns of the Whitehorse Copper Belt, southern Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 19-43.

MORGANTI, J.M., 1985. Geology and mineralization of the Howard's Pass lead-zinc deposits, Yukon Northwest Territories; Abstract from Joint Canadian Institute of Mining and Metallurgy/GAC Symposium on Mineral Deposits of Northern Cordillera; in Yukon Exploration and Geology 1983, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 18-19.

MORIN, J.A., 1977. Geology, lode and placer gold mineralization of the Moosehorn Range, 115 N 2; in Mineral Industry Report 1976, Yukon Territory, EGS 1977-1, p. 33-54.

MORIN, J.A., 1981a. Element distribution in Yukon gold silver deposits; in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Inidan and Northern Affairs Canda, p. 68-84.

MORIN, J.A. 1981b. Volcanogenic iron and base metal occurrences in Klondike schist; in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 91-97.

MORIN, J.A., 1981c. Geology and mineralization of the Hopkins Lake area, 115 H 2, 3, 6, 7; in Yukon Geology and Exploration 1979-80, Exploration and Geological Servies Division, Yukon, Indian and Northern Affairs Canada, p. 98-104.

MORIN, J.A., 1981d. The McMillan Deposit - A stratabound lead-zinc-silver deposit in sedimentary rocks of Upper Proterozoic age; in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 105-109.

MORIN, J.A., 1981e. A note on rock geochemistry of the Clear Lake Massive Sulphide; in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 85-87.

MORRISON, G.W., 1981. Setting and origin of stain deposits in the Whitehorse Copper Belt, Yukon; unpublished PhD. Thesis, University of Western Ontario, London, Ontario.

MORTENSEN, J.K. and GODWIN, C.I., 1982. Volcanogenic massive sulphide deposits associated with highly alkaline rift volcanics in southeastern Yukon Territory; in Economic Geology, Volume 77, No. 5, p. 1225-1230.

MORTENSEN, J.K., 1979. Stratigraphic, structural and tectonic setting of an Upper Devonion-Mississippian volcanic-sedimentary sequence and associated base metal deposits in the Pelly Mountains, Southwestern Yukon; unpublished MASc Thesis, University of British Columbia, Vancouver, B.C.

MORTENSEN, J.K., 1988. Geology of southwestern Dawson map area; in Current Research, Part E, Geological Survey of Canada, Paper 88-1B, p. 73-78.

MORTON, R.D., 1983. The geology and economic potentials of the Sixty Mile Ag-Pb-(Au) property, Yukon; Confidential report prepared for Western Canadian Nuclear Ltd, 17 p.

MULLIGAN, R., 1963. Geology of Teslin map area, Yukon Territory (105 C); Geological Survey of Canada, Memoir 326 (including Map 1125A).

MURPHY, D.C., 1988. Geology of Gravel Creek (105 B 10) and Irvine Lake (105 B 11) map areas; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1988-1, two 1:50,000 scale maps with legend and text.

NESBITT, B.E., MUROWCHICK, J.B. and MUEHLENBACHS, K., 1987. Reply on "Dual origins of lode gold deposits in the Canadian Cordillera"; in Geology, Volume 15, p. 472-473.

NESBITT, B.E., MUROWCHICK, J.B. and MUEHLENBACHS, K., 1986. Dual origins of lode gold deposits in the Canadian Cordillera; in Geology, Volume 14, p. 506-509.

NOBLE, S.R., SPOONER, E.T.C. and HARRIS, F.R., 1986. Logtung: a porphyry W-Mo deposit in southern Yukon; in J.A. Morin ed., Mineral deposits of Northern Cordillera, Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 274-287.

NORFORD, B.S. and ORCHARD, M.J., 1985. Early silurian age of rocks hosting lead-zinc mineralization at Howard's Pass, Yukon Territory and District of MacKenzie; Local biostratigraphy of Road River Formation and Earn Group; Geological Survey of Canada, Paper 83-18.

OLSON, D.H., 1978. History and geology of the McMillan (Quartz Lake) silver-zinc-lead deposit, southeastern Yukon; a paper presented at the sixth Geoscience Forum, December 3-5, 1978, Whitehorse, Yukon.

OLSSON, W.J., 1973. The Geology and Petrology of the Mark Group Claims, Hart River Mines Ltd, Yukon Territory; Unpublished BSc Thesis, Queens University.

PAYNE, J.G., GONZALAS, R.A., AKHURST, K. and SESSON, W.G., 1987. Geology of Colorado Creek (115 J 10), Selwyn River (115 J 9) and Prospector Mountain (115 I 5) map areas, western Dawson Range, west-central Yukon; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1987-3, three 1:30,000 scale maps with legend and text.

PICKTHORN, W.J., GOLDFARB, R.J. and LEACH, D.L., 1987. Comment on "Dual origins of lode gold deposits in the Canadian Cordillera"; in Geology, Volume 15, p. 471-472.

POTTER, T. 1987. Petrography of tin and tungsten occurrences and an electron microprobe mineralogical study of tourmaline from the McQuesten River area, Yukon Territory; unpublished research paper for Geology 508, University of Alberta.

PRIDE, M.J., 1985. Interlayered sedimentary-volcanic sequence of the Mount Skukum volcanic complex; in Yukon Exploration and Geology 1983, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 94-104.

PRIDE, M.J., 1986. Description of the Mount Skukum volcanic complex, southern Yukon; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 148-160.

PRIDE, M.J., 1988. Bimodal volcanism along the Tintina Trench near Faro and Ross River; in Yukon Geology, Volume 2., Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 69-80.

RALFS, K., 1975. A study of the mineralogy, paragenesis, zoning and wallrock alteration Venus Vein, Montana Mountain, Southwest Yukon; unpublished BSc. Thesis, University of British Columbia, Vancouver, B.C.

READ, P.B. and MONGER, J.W.H., 1976. Pre-Cenozoic volcanic assemblages of the Kluane and Alsek Ranges, Southwestern Yukon; Geological Survey of Canada, Open File 381.

RODDICK, J.A., 1967. Tintina Trench; Journal of Geology, Vol. 75, No. 1, p. 23-33.

ROOTS, C.F., 1981. Geological setting of gold-silver veins on Montana Mountain; in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 116-122.

ROOTS, C.F., 1982. Geology of the Montana Mountain Area, Yukon, unpublished MSc. Thesis, Carleton University, Ottawa, Ontario.

SAWYER, J.B.P. and DICKINSON, R.A., 1976. Mount Nansen; Canadian Institute of Mining and Metallurgy Special Volume 15, p. 336-343.

SHANKS, W.C., WOODRUFF, L.G., JILSON, G.A., JENNINGS, D.S., MODENE, J.S. and RYAN, B.D., 1987. Sulphur and lead isotope studies of stratiform Zn-Pb-Ag deposits Anvil Range, Yukon; Basinal brine exhalation and anoxic bottom-water mixing; Economic Geology and the Bulletin of the Society of Economic Geologists, Volume 82, p. 600-634.

SILLITOE, R.H., 1981. Low-grade gold potential of volcano-plutonic arcs; in University of Toronto Ore Deposit Worshop notes, 1981, p. 7-24 - 7-57.

SINCLAIR, W.D., 1977. Geology and mineral deposits of the Minto area, Yukon Territory; in North of 60 - Mineral Industry Report 1977, Yukon Territory, Canada, Indian and Northern Affairs Canada, Report EGS 1978-9, p. 68-82.

SKINNER, R., 1962. Mineral industry of Yukon Territory and southwestern District of Mackenzie, Geological Survey of Canada, Paper 62-27. (MIR 1961)

SMEE, B.W. and BAILES, R.J., 1986. The use of lithogeochemical patterns in wallrock as a guide to exploration drilling at the JASON lead-zinc-silver-barium deposit, Yukon Territory; in Journal of Geochemical Exploration (111), Volume 25, p. 217-230.

SMIT, H., ARMSTRONG, R.L. and VAN DER HEYDEN, P. 1985. Petrology, chemistry and radiogenic isotope (K-Ar, Rb-Sr and U-Pb) study of the Emerald Lake pluton, eastern Yukon Territory; in Current Research, Part B, Geological Survey of Canada, Paper 85-1B, p. 347-359.

SMITH, M.J., 1982. Petrology and geology of high level rhyolite intrusives of the Skukum area, 105 D, Southwest Yukon; in Yukon Exploration and Geology 1981, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 62-63.

SMITH, M.J., 1983. The Skukum volcanic complex, 105 D SW: Geology and comparison to the Bennett Lake cauldron complex; in Yukon Exploration and Geology 1982, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 68-72.

TEMPELMAN-KLUIT, D.J., 1964. Geology of the Haggart Creek-Dublin Gulch area, Mayo District, Yukon Territory; unpublished MSc. Thesis, University of British Columbia, Vancouver, B.C.

TEMPELMAN-KLUIT, D.J., 1965. Tombstone River (116 B 7) map areas; in Report of Activities: Field 1964, Geological Survey of Canada, Paper 65-1, p. 35-36.

TEMPELMAN-KLUIT, D.J., 1972. Geology and origin of the Faro, Vangorda and Swim concordant zinc-lead deposits, central Yukon Territory; Geological Survey of Canada, Bulletin 208.

TEMPELMAN-KLUIT, D.J., 1974a. Reconnaissance geology of Aishihik Lake, Snag and parts of Stewart River Map-Areas, west-central Yukon; Geological Survey of Canada, Paper 73-41.

TENNEY, D., 1981. The Whitehorse Copper Belt; Mining, Exploration and Geology (1967-68). Bulletin 1, Department of Indian and Northern Affairs, Geology section publication, 29 p.

TURNER, R.J.W., GOODFELLOW, W.D. and TAYLOR, B.E., 1989. Isotopic geochemistry of the JASON stratiform sediment-hosted zinc-lead deposit, MacMillan Pass, Yukon; in Current Research, Part E, Geological Survey of Canada, Paper 89-1E, p. 21-30.

TURNER, R.J.W., EINAUDI, J.W. and MARCO, T., 1986. The geological setting and genesis of the south zone stratiform Pb-Zn-Ba deposits, MacMillan Pass, Yukon; in The Genesis of Stratiform Sediment-hosted Lead and Zinc Deposits; Conference proceedings; Stanford University Publications, Geological Sciences (USA) 1986, Volume 20, p. 5-12.

TURNER, R.J.W., 1987. The genesis of stratiform lead-zinc deposits, Jason Property, MacMillan Pass, Yukon; unpublished PhD. Thesis, Stanford University, California.

VAILLANCOURT, P. 1983. Geology of pyrite-sphalerite-galena concentrations in proterozoic quartzite at Quartz Lake, Southeastern Yukon; in Yukon Exploration and Geology, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 73-78.

WALTON, L., 1986. Textural characteristics of the Venus vein and implications for ore shoot distribution; in Yukon Geology, Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 11-18.

WALTON, L., 1987. Geology and geochemistry of the Venus Au-Ag-Pb-Zn vein deposit, Yukon Territory; unpublished MSc. Thesis, University of Alberta, Edmonton, Alberta, 113p.

WATSON, P.H., GODWIN, C.I., and ARMSTRONG, R.L., 1982. Geology, mineralization and K-Ar and Rb-Sr isotopic study of the RAM Zn-Pb-Ag property Yukon Plateau, Southwest Yukon

(105 D 4); in Yukon Geology and Exploration 1979-80, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 123-127.

WATSON, P.H., 1984. The Whitehorse Copper Belt - A compilation; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 1984 Open File, 1:25,000 scale map with marginal notes.

WATSON, K.W., 1986. Silver-lead-zinc deposits of the Keno Hill-Galena Hill area, central Yukon; in Yukon Geology Volume 1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 83-88.

WHEELER, J.O., GREEN, L.H. and RODDICK, J.A., 1960. Geology, Quiet Lake, Yukon Territory; Geological Survey of Canada, Preliminary Map 7-1960 and 8-1960.

WHEELER, J.O., 1961. Whitehorse map-area; Geological Survey of Canada, Memoir 312 (includes Map 1093).

WINN, R.D. and BAILES, R.J., 1987. Stratiform lead-zinc sulphides, mudflows, turbidites; Devonian sedimentation along a submarine fault scarp of extensional origin, Jason Deposit, Yukon Territory, Canada; Geological Society of America Bulletin, Volume 98, p. 528-539.

INDEX