GENL #241 16 DEC 1985

UTAH MINES LTD. B.C. HYDRO & POWER AUTHORITY 92L/12E (92L 135)

HYDRO DISCOUNT BOOSTS MINE PRODUCTION - A discount sale of surplus electricity will enable Utah Mines Ltd. to step up production at its Island Copper Mine at Port Hardy on Vancouver Island by processing more low-grade ore by making B.C. copper concentrates more competitive in world markets, says B.C. Energy, Mines and Petroleum Resources minister Stephen Rogers.

The company will invest $3,800,000 in improvements. A fourth ball mill will be installed and the conveyor system will be extended in order to process the marginal ore. Mill throughput will be raised by 3,000 tons per day to about 45,000 46,000 tons per day.

B.C. Hydro will supply 4.4 megawatts of electricity at a discount of 30% for 2 years. The sale will bring B.C. Hydro more than $1,300,000 in additional revenue and return about $500,000 in direct revenue to the province. Several other discount sale proposals are under review by the government.

The British Columbian copper mines are mainly low grade high tonnage open-pit properties. Some are blessed with small amounts of molybdenum minerals, and others with a sprinkling of gold and silver.

This survey has shown that, despite their differences, both management and labor are working with the provincial government to maintain the mining presence in the one-industry towns of BC.

92L/158(10.4)

ISLAND COPPER MINE

Utah Mines Ltd's Island Copper mine near Port Hardy at the north end of Vancouver Island stays in production through meticulous investigation and the introduction of a large number of cost-saving items in the mine and the concentrator.

The operation moves about 50 million tons of rock per year, and processes 46 000 t/d at a grade of 0.43% copper and 0.017% molybdenum. With the deepening pit and lengthening ore haulage requirements, cost estimates show that a conveyor system would prove more efficient than trucking.

In December 1984, the installation of an in-pit crushing and conveying system was complete and operational. The moveable crushing station consists of a 54" × 72" Kobe gyratory crusher built by Krupp of West Germany. This system is one of the vital additions to the mine; it has permitted the treatment in the mill of some lower grade material which would otherwise have been routed to waste. The station weighs about a thousand tons and can be moved as the pit is deepened.

The stripping ratio is decreasing with time. Along with the reduction in mined rock has come an equivalent reduction in manpower at the mine, generally through attrition

The management is looking into computerization in the pit, for further efficiencies, including automatic weighing of trucks and truck loads.

Mill capacity had to be increased to match new mine production. It has been achieved by a number of small improvements in the grinding and flotation circuits. These improvements have also reduced the milling costs.

Power to the SAG mills has been increased by more efficient cooling of the motors. A fourth secondary ball mill has added extra grinding capacity. This new mill qualified Utah for a special 30% discount on 4.4 MW of power for two years under the Industrial Electricity Rate Discount Act, in order to process ore of marginal value.

Process control and computerization of the grinding operation has produced significant throughput improvement.

For flotation control, a computer uses the results of a Courier 300 X-ray analyzer and mass-flowmeter to calculate and adjust reagent addition rates in the copper and molybdenum circuits, and to supervise the performance of individual flotation steps.

CMJ Sept 86

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John Lamb
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Paper presented at Sixth Annual
District 6 Meeting - Victoria
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Among those who played prominent parts in the exploration are Ed Rugg, Art Humphrey, Moe Young, Gerry Noel, Charley Aird and Brad Pearson, not forgetting Utah's exploration chief at that time, Holly Peacock. I'm sure that you will know, or know of, some of these men.

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The great Dawson (Holberg ?) Fault, trending east-west passes about 1.5 km. south of the pit, with a downward displacement in this area, of possibly 2000 meters on the north side. Its lateral displacement is not known but suggestions have been made that it could be 80 km.

The orebody is in Bonanza rocks, possibly 500 meters above the base. The rock in the pit consists of coarse to fine, andesitic and dacitic volcanic breccias, lapilli, lithic and thin bedded tuff, chert and on one occasion a narrow bed of black argillite. Marine shell fossils have been located in the pit north wall and are causing some controversy among palaeontologists.

Observations on the thin bedded rocks, suggest there is an anticlinal type structure in the north wall, plunging steeply SSW toward the mid section of the ore body.

In plan the ore body has the shape of an attenuated ellipse, sub-parallel to the WNW formational trend and to a narrow irregular dike of quartz-feldspar porphyry, dipping northward from 45 to 60 degrees, almost at right angles to the regional dip of the Vancouver Group rocks. In cross section the ore body has the form of an inverted 'U', draped around both sides of the dike.

The ore zone is strongly fractured, with sulphides forming hair-like veinlets on the fractures. Approximately 75% of the ore is in the volcanic wall rock, the remainder being in porphyry and associated breccias. In fact most porphyry alone, is almost barren of copper and molybdenum.

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Breccias

A large cap of pyrophyllite breccia, up to 150 meters wide, overlies the dike at the western end of the deposit, having a minimum length of 850 meters. It contains angular fragments of both porphyry and volcanic wall rock, scattered throughout a matrix of massive grayish-tan pyrophyllite. Rare blue dumortierite is common in this breccia.

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The Yellow Dog breccia, named from the color of it ferroan dolomite veins is most pronounced on the northern flank of the porphyry system, near the mid point of the ore body, tapering both to the east and west. Several narrow streaks of this breccia penetrate the wall rocks for long distances to the north and south. The breccia is composed of volcanic and porphyry fragments, healed and laced with quartz and carbonate veins. It's color is becoming darker with depth, due to the increasing quantity of magnetite.

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There are innumerable minor slips and faults of small displacement but the only major structure is the steep End Creek Fault, situated southwest of the ore body, forming an acute angle with the regional trend. It may well be a splay, off the Dawson Fault. We speculate that fault movement both pre-dates and post-dates the period of ore formation.

Alteration

Contact metamorphic alteration permeates large volumes of rock, forming a 100 meter wide biotite zone, a 180 meter wide transition zone and a 350 meter wide epidote zone, in that order, outward from the porphyry dike.

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> "Environmental monitoring (over the past eleven years) of the receiving waters and the biota within, indicates that there has been a change in the nature of the sea-floor habitat but that this change has not caused any significant adverse impact on the environment".

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Vancouver Island is a copper "province". This fact is borne out by at least ten past and present producing mines, most of them rather modest in size. I include here the Texada and Quadra deposits, because their rocks belong to those of the Island rather than to those on the mainland. I have read of numerous other copper showings and personally seen at least six, which will probably never get beyond the prospect stage. And one must not forget the large Catface porphyry deposit near Tofino, which has yet to be put into production.

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The most numerous types of deposits are the high grade skarn replacements near limestone-volcanic-intrusive contacts, like the Coast Copper or the Indian Chief mines. Probably more important because of their size are the low grade porphyries like Island Copper and Catface. Keeping in mind that the sedimentary Parson Bay and Quatsino formations, probably intersect the root of the Island Copper deposit at depths of 600 to 900 meters, leads us to speculate that there may be mineable skarn type bodies well below the present pit.

On a final note, it is interesting to speculate why the Island is so different than the mainland. Certain government and university geologists both in Canada and the U.S., from their paleomagnetic studies, are proposing the concept of a land mass they call Wrangellia, although I understand Jan Muller prefers the name Insular Belt. At any rate, the theory goes, that the rocks of Vancouver and Queen Charlotte Islands and certain areas of the Alaska panhandle are part of one small land mass, now welded on to the North American plate, although they were formed at latitudes of 15 degrees north or south of the Equator.

Did this land slide up the coast of the Americas' or did it drift in from the mid Pacific Ocean ? Maybe this is one reason why Island Copper is unique among the porphyry deposits in B.C.

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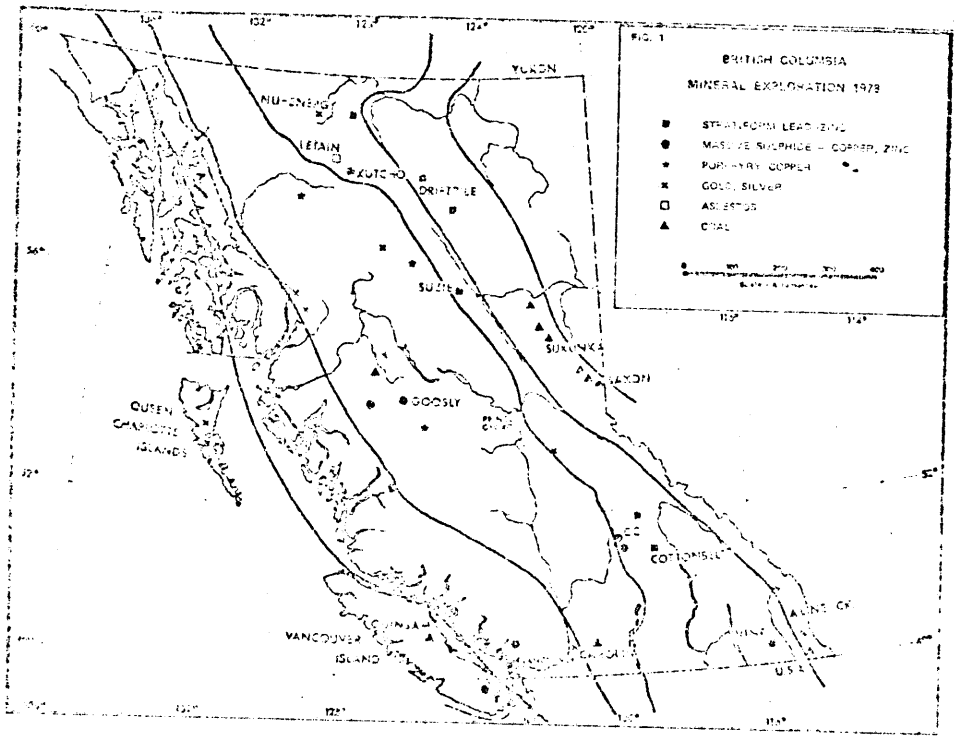
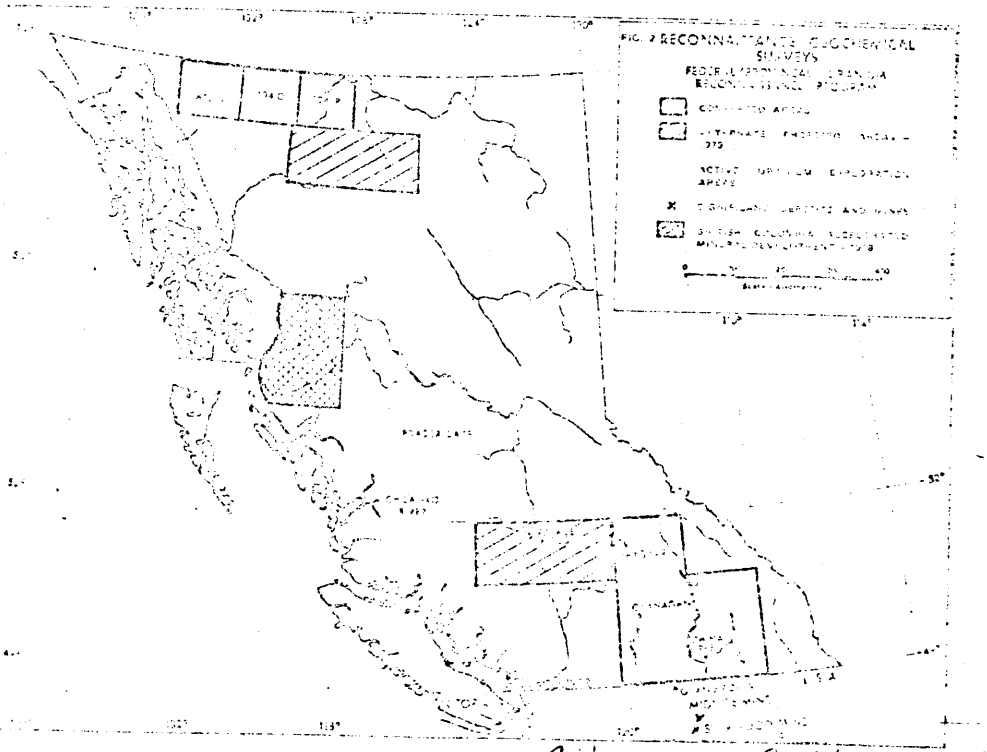
Mineral exploration in British Columbia: molybdenum, tungsten, uranium, tin are attractive





Depressed prices for traditional British Columbia mineral commodities, principally copper, resulted in a re-direction of mineral exploration effort throughout the Province in 1978. Attractive mineral commodities included molybdenum, uranium, tungsten, and tin, and a review of the geological settings for the occurrence of these elements in British Columbia will be the main theme of this paper.

The emphasis on these four elements does not imply that there was no interest in other minerals in 1978, and a summary of exploration and development follows.

GENERAL REVIEW

Mineral exploration expenditures in British Columbia during 1978 are expected to show an increase over last year due to a greater number of drilling programs. The number of mineral claim units recorded to the end of December were in the order of 33,800 or a little more than 2000 units short of the number recorded by the end of 1973.

The value of mineral production, excluding petroleum and natural gas, is estimated at $1.36-billion, or a 12 percent increase over the actual 1977 value, due in large part to a positive effect of the current exchange rates whereby British Columbia coal and most base metal producers have contracts based on US dollars. This factor is expected to maintain copper as the leading commodity by value in spite of decreased production caused by an ongoing strike at Gibraltar and the closures of Granduc and Phoenix. The value of coal production will be nearly that of copper, and molybdenum remains a solid third.

In addition to the previously mentioned copper producers which suspended operations, Cominco's H-B lead-zinc mine at Salmo also closed in 1978. Diminishing the effects of mine closures was the first full year of production from the Afton copper mine and smelter at Kamloops, the announcement of Newmont's intentions to mine Similkameen Mining's Copper Mountain orebody adjacent to Princeton, and the production announced by Climax Molybdenum of British Columbia Limited regarding the former British Columbia Molybdenum mine at Alice Arm. Production was started by year-end from Nu Energy's underground gold property near Cassiar.

Gibraltar - 93B/0; 00541
Granduc 104B/12W; 08408
Phoenix - 82E/2E; 1383
H.B. - 82F/3E; 00981

Afton - 92I/10E; 1850
Copper Mtn - 92H/7E
Alice - 103P/6W; 5101
~~Nu Energy~~ Erickson Gold

EXPLORATION REVIEW

The most active mineral exploration areas in the Province included, from north to south: the Atlin-Jennings River area (uranium, tungsten-tin), Kechika-Gataga Rivers (stratiform lead-zinc), Fraser Lake-Vanderhoof and central Interior (uranium), and the southeast Okanagan (uranium). A notable feature of the 1978 exploration scene was the relatively low level of porphyry copper exploration, a reflection of depressed world copper prices over the past three years.

In contrast, exploration for massive sulphide deposits containing copper, zinc, and by-product gold-silver increased over 1977. The Gossip copper-silver deposit south of Smithers (see Fig 1) was optioned from Equity Mining-Kennco by Canex Placer in mid-year. Additional development drilling and metallurgical studies are underway pending a production decision. Esso Minerals continued drilling the significant Kutcho massive sulphide deposit in northwest British Columbia, part of which is held by Sumitomo who have reported at least 10 million tons of good grade copper-zinc mineralization. Nearby is the Letain asbestos deposit (Fig 1), on which Cassiar Asbestos conducted 15,000 feet of diamond drilling.

Other massive sulphide prospects explored in 1978 included two in the Coast Range -- the Kitty near Bella Coola, drilled by Bon Ocean, and Magnet Mines property near Howe Sound north of Vancouver, drilled by Canex Placer. Regional exploration was conducted in the Omineca area northeast of Prince George and the Babine Lakes north of Kamloops, where several prospects in Paleozoic Eagle Bay-formation rocks were drilled. One of these programs disclosed interesting copper mineralization in mafic volcanic rocks on the CC property, owned by the Vestor group of companies and under option to Cominco.

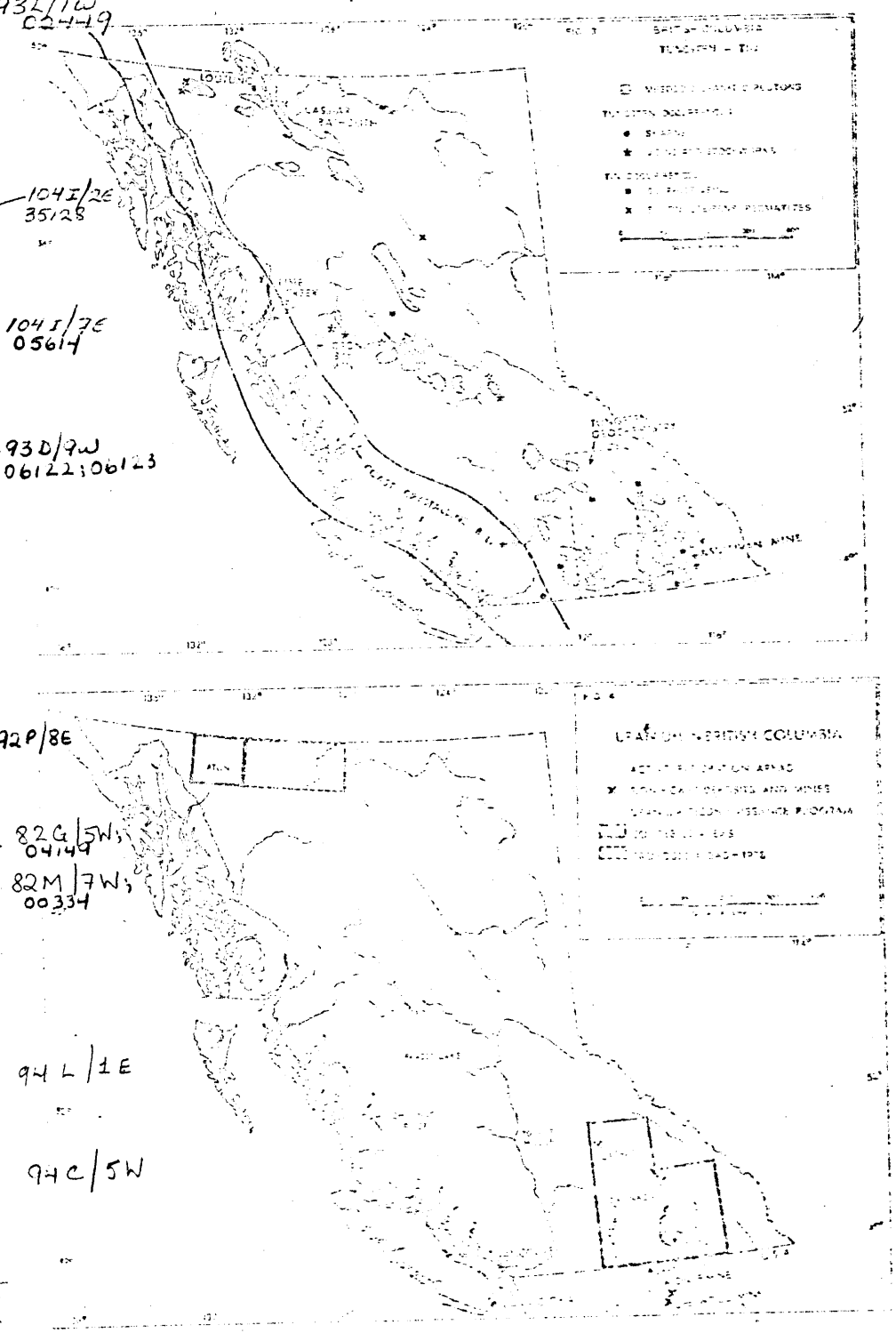
Lead-zinc deposits explored in southeast British Columbia included the Vine deposit at Nicola Lake, drilled by Cominco and the Cottonwood Shuswap-type deposit tested by Asarco-Placer.

Significant bedding-hosted deposits in Upper Devonian-Mississippian black shale sequences in the Kechika River area of northeast British Columbia attracted considerable attention. Gataga Joint Venture conducted a major drilling program at Driftpile Creek, and Cyprus Anvil drilled a similar deposit to the southeast. Also in northern British Columbia, exploration drilling continued on the Sedex property where galena and sphalerite occur in dolomitized limestone.

Underground development and mill construction went on at the Nu-Energy gold deposit near Cassiar where production and mill tune-up started in December 1978. Feasibility studies continued at the Carolin gold property near Hope. Exploration programs for gold and silver included Tournigan Mining's drilling and underground work at Big Missouri north of Stewart, and projects by several companies on gold mineralization on Porcher and Banks Island south of Prince Rupert and on the Queen Charlotte Islands.

The moratorium on the issuance of new coal licences was lifted in February and this had the effect of doubling the number of valid licences. In the Peace River Coalfield, significant drilling programs were carried out on the Saxon and Belcourt properties of Denison Coal, on the Pacific Petroleum-Canadian Superior-McIntyre Wapiti River property, and on Ranger Oil's Mount Spieker property. Underground development and drilling on the Suhunk property was continued by BP Coal, and Brameda explored the Burnt River thermal coal deposit. Various companies began preliminary exploration of new licence areas.

Crowsnest Resources continued development of the Line Creek thermal coal property in southeast British Columbia and also drilled their Corbin and Sage Creek properties.



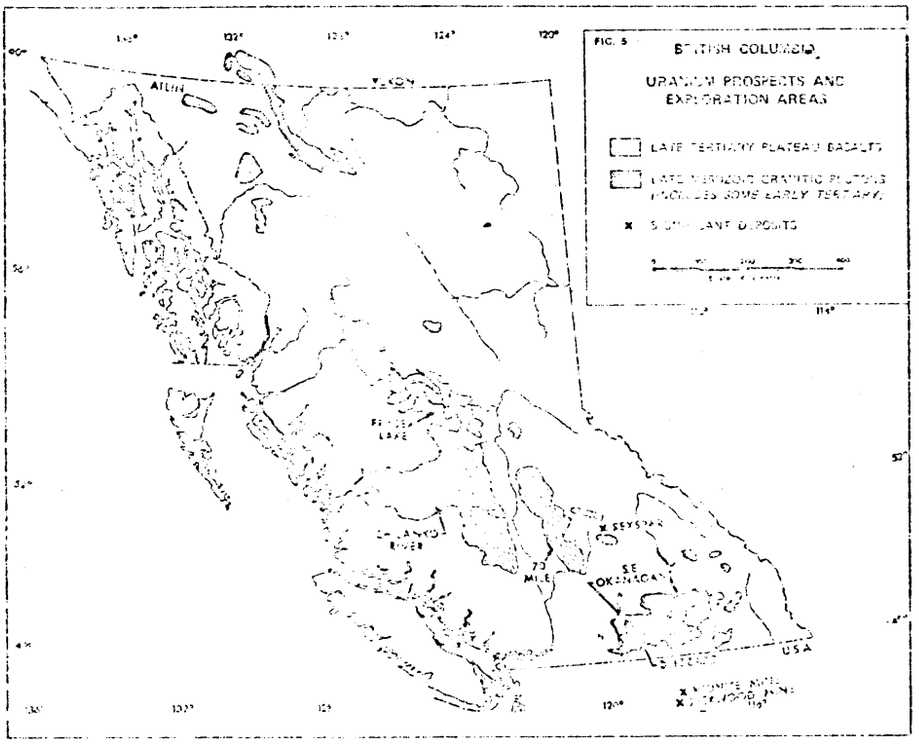
Thermal coal deposits explored elsewhere in the Province included drilling programs by Luscar-Wellwood at Quinsam on Vancouver Island and by Cyprus Anvil at Tulameen and Telkwa.

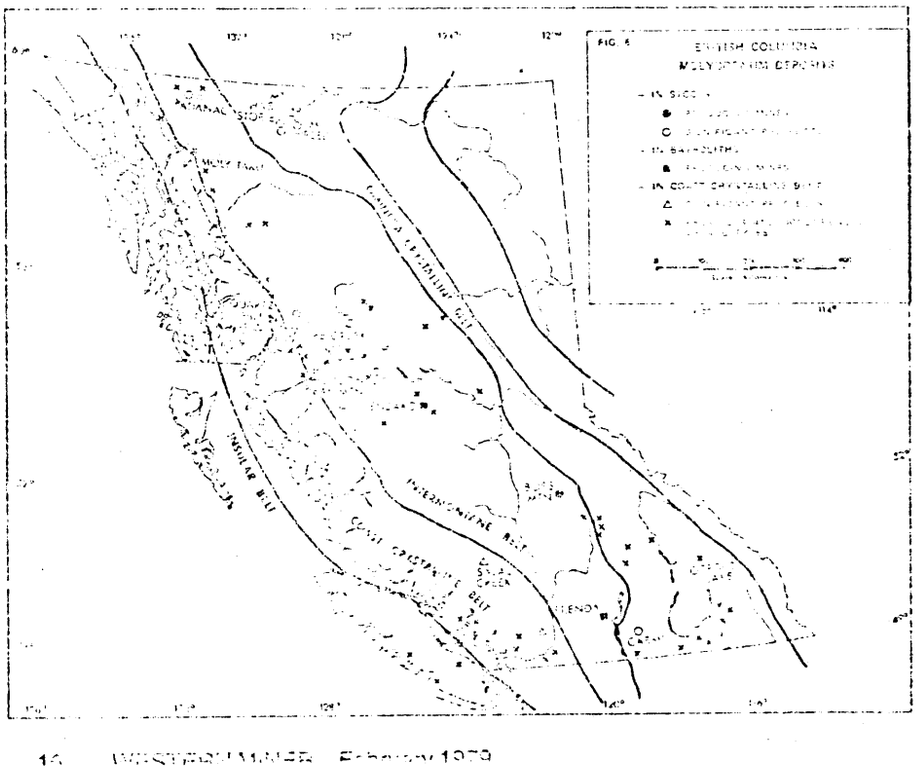
GOVERNMENT PROGRAMS TO ENCOURAGE EXPLORATION

Ongoing geological programs include regional mapping in areas of mineral potential and studies directed to the better understanding of ore deposits. Related programs include reconnaissance geochemical surveys in selected areas (Fig 2), principally through the three-year Federal-Provincial Uranium Reconnaissance Program (URP) which was completed in 1978. This program involved the collection of stream sediments and waters at a sample site density of one per 5 square miles. Waters are analysed for fluorine and uranium and sediments for uranium and up to 11 other elements. To date results for six 1:250 000 map sheets have been published, including five in southeastern British Columbia (Fig 2) and the Atlin sheet in the northwestern part of the Province. The 1978 sampling program included the Jennings River-McDame map-area east of Atlin, and survey results will be made available in the spring of 1979.

The 1978 Accelerated Mineral Development Program, funded by $5-million made available through Bill 5, Revenue Surplus of 1976/77 Appropriation Act, 1978, included an Accelerated Geochemical Survey of two map-areas in west-central British Columbia (Fig 2). This program is modelled after the Uranium Reconnaissance Program except that sample site density was one per three square miles. Data from this program are to be released in April of 1979.

The Accelerated Mineral Development Program also expanded existing Ministry programs including Prospectors' Assistance, funds for mineral roads, and mine site reclamation. In addition, funds were made available to assist with labour costs for underground mine development and property exploration, and for the Mineral Exploration Incentive Program which reimburses junior mining companies and prospectors for one-third of field expenditures up to a maximum of $50,000.





MOLYBDENUM, URANIUM, TUNGSTEN, TIN EXPLORATION

These four elements occur together in a number of areas in British Columbia, particularly in the Omineca Belt, noted for its diversity of elements. A significant correlation between the four has been noted in northwest British Columbia, specifically in the Atlin area where URP geochemistry has shown the Late Cretaceous Surprise Lake batholith to be anomalous not only in these four elements but also in lead and zinc and to a lesser degree copper and nickel.

Tungsten-Tin

Tungsten and tin minerals occur together in the northwest and southeast parts of the Omineca Belt (Fig 3), commonly within Mesozoic and younger granitic plutons and adjacent late Precambrian and Early Paleozoic miogeoclinal sedimentary rocks.

At present there is no tungsten production in British Columbia. Tin is produced as a by-product (187 478 kilograms, 1977) from the Sullivan mine where cassiterite occurs throughout the lead-zinc deposit but is mainly concentrated just above the footwall of the orebody and in tourmalinized fractures in the footwall. The origin of this tin mineralization is not clear but it may be related in part to tourmaline-beryl-bearing granitic stocks of Precambrian age which are known south of the mine.

Numerous tin occurrences are known throughout the Kootenays where many lead-zinc veins contain stannite and some tungsten. At the former Emerald tungsten mine near Salmo, scheelite occurs in skarns developed in Cambrian

Emerald - 82F/3E; -01195

limestones adjacent to Cretaceous intrusions.

As shown on Figure 3, tungsten analyses of 700 stream sediment samples from the 1976 Uranium Reconnaissance Program survey area were released in August 1978. Anomalous values were obtained from several areas, principally in the southwest corner of the area adjacent to the US border.

One of the most active exploration areas in the Province was in the Atlin-Jennings River-Cassiar area where considerable effort was directed to the search for tungsten and tin. Three types of tin occurrences are known in this part of northwest British Columbia and adjacent Yukon. Cassiterite occurs in the gold placer creeks east of Atlin which drain the Surprise Lake batholith which hosts quartz-wolframite veins with tin as a minor constituent. Minor tin is associated with scheelite at the Adanac molybdenum property, and in skarns in the general area.

Geochemistry indicates higher than average trace amounts of tin in the polymetallic multiphase Surprise Lake batholite. Further east, the Seagull, Klinkut, and Glundebery batholiths underwent considerable exploration for tungsten and tin. Principal rock types are miarolytic biotite quartz monzonites with muscovite granite and aplite phases. Tin-tungsten mineralization with beryllium and molybdenum is associated with fluorite and boron minerals (tourmaline, axinite) in skarns developed marginal to these plutons. At Ash Mountain, tin occurs in an andradite garnet skarn while at the Blue Lite property cassiterite and scheelite are contained in magnetite-pyrite veins. In the Cassiar area tin is a minor constituent of lead-zinc sulphide veins marginal to the Cassiar batholith.

Logtung, on the British Columbia-Yukon border (Fig 3), is a significant stockwork tungsten-molybdenum property on which a major drilling program was continued by Amax. Scheelite and molybdenite occur in a quartz veinlet stockwork in porphyritic alaskites, quartz monzonites, and contact hornfels and skarn. The skarns also contain beryl, minor wolframite, and tin, fluorite, and tourmaline. Published drill-indicated reserves are 200-million tons of 0.12% WO_3 and 0.06% MoS_2.

Tungsten analyses of stream sediments collected in the Atlin area by the URP survey were released earlier in 1978 and tungsten will be analysed along with 11 other elements in samples collected from the Jennings River-McDame map-area in 1978.

Uranium

1978 was the third year in which intense exploration activity took place for uranium. It is probable that 60 per cent of the mineral claim units recorded to date were located principally for uranium. Areas of significant claim staking activity were the Okanagan, the south-central interior, south of Fraser Lake, and Atlin (Fig 4).

Two potentially economic types of uranium deposit have been identified in British Columbia. Rexspar is a volcanogenic deposit in which uranium minerals and fluorite occur in trachytic volcanic rocks which are part of Paleozoic pile of schistose acid fragmental volcanic rocks. The Blizzard, southeast of Kelowna, is a basal or paleo-stream channel deposit in which secondary uranium minerals are contained in poorly consolidated Tertiary sediments preserved beneath a Pliocene basalt cap. Continued drilling of this deposit, owned by Lacana and under option to Norcen, has indicated the presence of 2.1-million tons averaging 5 pounds per ton U_3O_8.

Primary and secondary uranium minerals are also known to occur in pegmatite swarms in Monashee gneisses at Chim Creek near Castlegar and north of Grand Forks (Fig 4). Drilling programs on both of these properties were carried out during the year.

Exploration drilling for basal Tertiary-type deposits continued in the southeast Okanagan, at Chilanko River and 70 Mile House in the south-central

interior and south of Fraser Lake-Vanderhoof.

Results from the URP geochemical program have identified a number of Late Mesozoic granitic plutons with anomalous uranium values in southeastern and southwestern British Columbia. These may represent potential source rocks for Basal-type deposits or may contain primary deposits within or adjacent to them. The distribution of some of these relative to Late Tertiary volcanic rocks is shown on Figure 5 and these include the Surprise Lake batholith near Atlin, and the Hyland, Cassiar, Bayonne and Nelson batholiths and Bigelow and Moosehide stock stocks in southeast British Columbia. URP data have shown anomalous uranium values in stream sediments and waters from drainages underlain by Eocene volcanic sequences along the west side of Okanagan Lake.

Molybdenum

Molybdenum production in British Columbia in 1977 was 34-million pounds, or about 20% of free world production, second only to the United States. The Province's prominent position in molybdenum production was attained in 1965 with the start-up of the Endako and Boss Mountain mines. Molybdenite is the principal commodity at present price levels at Brenda, and by-product molybdenite is recovered at four porphyry copper mines — Bethlehem, Lornex, Gibraltar, and Island Copper. Climax Molybdenum of British Columbia Limited have announced a 1982 production date for the former British Columbia Molybdenum mine on Lime Creek, near Alice Arm. The deposit will produce 10 million pounds of molybdenum per year over a 25-year life.

At the end of 1974, molybdenum reserves of producing mines and significant undeveloped molybdenum-bearing deposits was estimated to be 1340-million tonnes of combined Mo, making British Columbia one of the world's truly great molybdenum metallogenic provinces.

A great number of significant molybdenite deposits and prospects are known throughout the Province (Fig 6) and, while the greatest known concentration is in the Intermontane Belt, they are distributed throughout all tectonic belts with the exception of the Eastern Marginal Belt. The majority of deposits are stockworks and are associated with composite quartz monzonite stocks of Late Cretaceous-Early Tertiary age which intrude older layered rocks or granitic batholiths, as at Adanac and Boss Mountain.

Molybdenite mineralization at Endako and Brenda is related to late stage intrusive phases of the Francois Lake and Guichon batholiths, both of Late Jurassic age.

Significant molybdenum deposits have been identified in the Omineca Belt and, like the majority of those in the Intermontane Belt, are related to small stocks of Late Cretaceous and Early Tertiary age. These include the clustering of deposits near Cassiar where the Mount Haskins and Mount Reed deposits are associated with small Eocene quartz monzonite stocks, while the Storie and Cassiar Moly deposits are hosted by acidic intrusive phases of a Late Cretaceous stock on the eastern margin of the older Cassiar batholith.

At Trout Lake in southeast British Columbia (Fig 6), molybdenum mineralization is related to a buried Late Cretaceous quartz monzonite stock which intrudes a highly deformed Lower Paleozoic sedimentary sequence. Drilling of this significant discovery by Newmont and Esso Minerals is continuing to further define a reported 900-foot intersection of 0.40% MoS_2. An underground exploration program is under consideration for 1979.

The significance of molybdenite mineralization in the Coast Crystalline Belt was recognized by the discovery of the US Borax Quartz Hill deposit east of Ketchikan in southeast Alaska. Molybdenite mineralization in quartz vein stockworks is associated with a multiple phase Oligocene intrusion which cuts older plutonic and metamorphic rocks. Similar young intrusions host molybdenite mineralization at the Salal and Gem properties in southwest British Columbia. The Moly Lake prospect, east of the International Boundary in northwest British Columbia (Fig 6) and being explored by Omni Resources, may be of a similar type.

The great clustering of molybdenum deposits in the Alice Arm-Terrace area (Fig 6) includes the Lime Creek and other stockwork deposits marginal to the Coast Plutonic Complex as well as a number of occurrences within Coast granitic rocks. A significant feature of these deposits is their coincidence with the distribution of Quaternary basalt flows.

The discovery of significant molybdenite deposits in the Coast and Omineca Belts effectively renders two-thirds of British Columbia attractive for molybdenum exploration, particularly in areas that have heretofore received only limited attention.

SYNTHESIS

Exploration for a variety of mineral commodities increased throughout the Province in 1978. 'Glamour' commodities were molybdenum, uranium, tungsten, and tin, and molybdenum exploration is expected to continue at a good pace while the levels of activity for uranium, tungsten, and tin will depend on the success of exploration ventures currently underway. Lead-zinc exploration is expected to increase, particularly in northeast British Columbia, and at present price levels increased effort will be directed to the search for gold and silver. Coal exploration should show a noticeable increase in response to work requirements on new licence areas. Finally, strengthening world copper markets will further encourage exploration for massive sulphide deposits and may in turn predicate a return to significant porphyry exploration.

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Island Copper - 92L/11W; 5984
Adanac & Ruby Creek - 104N/11W; 104N-51; 1619
Boss Mtn. - 93A/2W; 93A-1; 00477

EPS report called "subjective" 0924IIW 0984 092L-158

Pollution report challenges Utah's findings

VANCOUVER – The report by the federal government's Environmental Protection Service, Pacific Region, (EPS) on Island Copper Mines (Utah Mines), Port Hardy, B.C., appears to be extremely subjective, declares Clem Pelletier, the company's manager of environmental affairs.

The EPS report states that the mine tailings dumped into Rupert Inlet have spread 15 kilometres into Rupert Inlet, obliterating bottom-living organisms, crippling fisheries resources and reducing visibility in the water to less than half a metre. It said that tailings have moved 10 kilometres up nearby Holberg Inlet and are upwelling to affect the shallow, productive regions in both inlets and into Quatsino Sound.

Darcy Goyette, the author of the report, is quoted as saying "at Island Copper Mines, we feel the situation is basically out of control".

Mr. Pelletier, who, as chairman, standing committee, pollution control, Mining Association of British Columbia, has been attending the recent public hearings in Victoria on pollution control objectives, said he has not had the opportunity to study the report in detail.

On the basis of a quick reading of the EPS report, however, he said, two things are apparent.

"The report appears to be extremely subjective, both in terms of the methods used to collect data and in terms of the conclusions reached from that data. I think it is going to be very difficult to make any useful comparison between EPS's data and the detailed, quantitative data which our own environmental lab at the mine, and the independent agency, have collected over the years.

"The . . . report would appear to be challenging, primarily, the independent monitoring agency which is comprised of a group of scientists from the University of B.C. and the University of Victoria. Our relationship with those scientists is of an 'arm's length' nature. We have a

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Pollution report

Continued from Page 1

financial understanding with the universities, not with the individual scientists, and I am not in a position to speak for them in response to the EPS report."

A report by the independent monitoring agency is contained in the voluminous brief of the Mining Association of B.C. presented to the public inquiry into pollution control objectives for mining, mine-milling and smelting industries of B.C.

The independent agency report states that Rupert Inlet is deep enough that ample room for tailings solids was available well below the euphotic zone. Island Copper has introduced approximately 80 million tons of tailings into Rupert Inlet 165 ft. below surface.

Prior to submarine disposal of tailings by the mine, the principal question was whether the tailings would remain at the bottom of the axial-trough in Rupert Inlet. Present data indicate that for the vast bulk of the tailings this is so.

Conclusions to date by the independent agency are that no evidence exists of any impact of the tailings discharge on the various components of the marine ecosystem.

J. B. Evans, coordinator of the independent monitoring agency, pointed out at a press conference called by the University of British Columbia (UBC), that originally the Pollution Control Branch, B.C., issued a permit to Utah to operate on condition that an independent agency be employed to monitor the mine effluent conditions.

The Pollution Control Board recommended to Utah that a panel be selected from UBC scientists. The company issued a contract to 12 scientists, who established a monitoring program and submitted their findings regularly to the Pollution Control Board, not to Utah. The company pays UBC directly, and makes no payment to any individual.

The records of the B.C. Pollution Control Branch, according to the branch's director, William Venables, show that Utah Mines has remained in complete compliance with the terms of its B.C. permit.

REPORT ON MINING OPERATIONS

MINERAL LEASES M31 TO M37

Utah Mines Limited

Island Copper Mine

(a) Mineral Leases 31, 32, 33, 34, 35, 36, 37

Map No. - 92L 11 W

Mining Division - Nanaimo

Land District - Rupert

Location - North side of Rupert Inlet

50 degrees, 36 minutes North

127 degrees, 28 minutes West

(b) The mineral deposit is a porphyry type copper-molybdenum occurrence, employing open pit mining methods. The ore body is lens-like, about 4000 feet long by 700 feet wide, striking west-northwest and dipping northward.

(c) In fiscal 1973 the production average was 31200 tons of ore per day.

Dated at Port Hardy, March 7, 1974.

John Lamb

John Lamb, P. Eng.