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WESTMIN

WESTMIN RESOURCES: PROFILE OF PROGRESS

Westmin started as just another penny stock...

Although Westmin Resources' predecessor, Western Mines Limited was incorporated in 1951, the company's history as a producer goes back only as far as 1967, Canada's Centennial year.

However, like many other mining areas in Canada, the showings on which the present operations are based were known as far back as 1917, when Strathcona National Park was opened for prospecting.

The claims on the Lynx and Price showings were held by Cross and Dubois of Victoria, while what was known as the Paw claims, were held by Paramount Mining Co of Toronto. The latter company did some trenching, drove an 80-ft adit and put down 10 diamond drill holes totalling 2169 ft between 1919 and 1925.

Probably due to remoteness and depressed metal prices, little subsequent work was done on the properties, even after the bullish assessment of Dr H C Gunning in a report to the Geological Survey of the Canada Department of Mines in 1930. He referred to 'extensive copper, zinc and lead mineralization' in a number of zones extending about three miles and over widths 'up to at least 25 ft' containing mineralization 'of probable milling grade...'

Between 1946 and 1960 the properties were examined by various engineers and geologists. In 1952, the ground was optioned to Granby Consolidated Mining, Smelting and Power Co. After drilling only four holes for a total of 1925ft they concluded that the mineralization was not of particularly high grade.

In 1959, the claims were acquired and consolidated by the Reynolds Syndicate, a group of men destined to become quite prominent in Canadian mining. Members included H H Huestis, P M Reynolds, J A and W H McLallan. Jack McLallan is still a very active director of Westmin Resources.

Western Mines came on the scene in 1961 after negotiating an option-purchase agreement with the Reynolds Syndicate. The payment involved 250,000 shares of Western Mines and $166,500 cash.

During the previous decade Western had been struggling to find and develop a viable property. The company was originally incorporated to acquire the Ainsworth lead/zinc mine on the western shores of Kootenay Lake, some 35 miles north of Nelson, BC. However, the property ceased production in 1953 due to depressed prices for the metals produced.

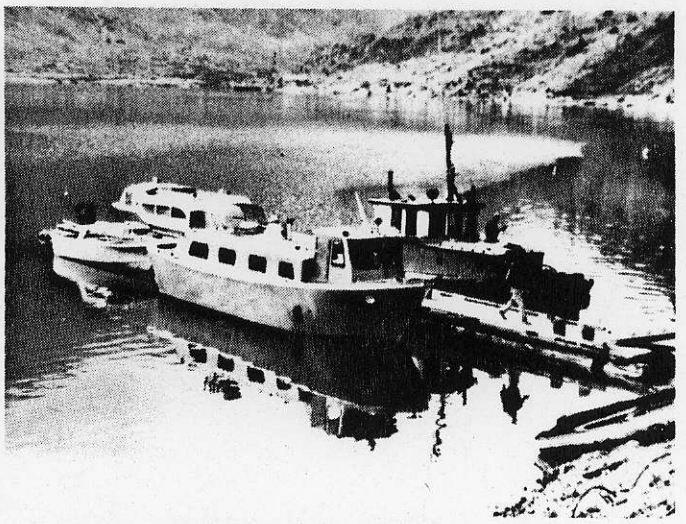
However, once the company and the new property were brought together, the tempo of exploration quickened dramatically. Emphasis was placed on the Lynx group where excellent surface showings were uncovered.

A shaft was sunk and by mid-1964, ore zones had been defined and opened up on five levels. Underground work and extensive diamond drilling indicated 810,300 tons of assured ore and 689,999 tons of possible ore at the Lynx, plus a total of 113,300 tons assured and possible at the Paramount (now the Myra). As is the case today, the zones were open in several directions and it was assumed that substantial additions to reserves could be reasonably expected when mining operations proceeded towards these locations.

It was decided to proceed with production, with 69 weeks allowed from go-ahead to the production of first concentrates. However, extremely heavy snowfall during the winter, a carpenters strike in BC and slow delivery of component parts pushed first production into early 1967.

The Gertrude H landing craft at the Myra dock on Buttle Lake in 1963, before road connection to Campbell River

Trestle under construction in 1966 to take ore from Lynx mine portal to the mill, also under construction



Western Mines 'fleet' included tug and passenger boats to bring in men and supplies before the road was built

Since there was no road to the property, everything had to be brought in on log rafts and a small fleet of company boats on Buttle Lake.

However, there were two major offsetting plusses. One of the first big shipments brought in was a portable sawmill. It was used to make lumber for mill construction from timber on the property. Some trees ranged to six feet in diameter.

And to this day, the company benefits from savings in power costs from the building of its own hydro-electric generating station at Tennant Lake, only a mile west of the Lynx mine site. Currently diesels supplement power requirements in periods of low run-off but hydro generating facilities will be expanded to provide power for the current expansion at a very attractive rate.

Western Mines got a shot in the arm with the decision to open pit some of the Lynx ore, even though it meant rearranging plans for surface facilities.

During the first year of production, 82% of the ore milled came from the pit and this increased to almost 97% in 1968. From 1969 onwards, the pit was gradually phased out in favor of underground ore. By the end of 1974, the pit had yielded over 1.6-million tons of ore, a far cry from original estimated reserves of 300,000-400,000 tons.

Early in 1970, a serious drilling program was started on the Myra property and almost immediately, they ran into a rich ore deposition. A 9ft x 9ft decline for trackless mining and haulage equipment was driven to its objective of 2200ft to the vicinity of the high grade drill intersections. Haulage from the Myra continues with low-profile trucks to surface stockpiles adjacent to the portal, from where ore is loaded and conveyed by dump truck to the concentrator.

Once steady production was achieved, a road was constructed linking Campbell River to the mine site. Thirty-one miles of this road is Highway 28, while the remaining 25 miles runs along the east shore of Buttle Lake to the mine.

Production settled down to the rated capacity of 1,000 tons/day during the first decade of operations but by the late 1970's management became somewhat anxious about future mill feed, since reserves were on a slow but steady downtrend. This is when a renewed exploration program was launched, which resulted in the discovery of the H-W orebody. A decision to sink the shaft was made in January, 1980 and sinking actually began in February 1981. The rest, as they say, is history. A couple of months ago, the Board of Directors gave the go-ahead for construction of a new mill and auxiliary facilities which will triple capacity by the end of 1984.

CORPORATE DEVELOPMENTS

As the mine developed from humble beginnings, so did the corporation.

Western Mines was incorporated with an authorized capital of 2.5-million $1 par shares of which 1,720,006 were issued for the Ainsworth property. In 1957, these shares were consolidated into $2 shares and the authorized capital was increased a couple of times to provide funds for exploration and Lynx development.

Senior financing to bring the mine into production was $11-million, consisting of $7-million in 6% income debentures (with a bonus of 140,000 shares) and a $4-million bank loan. Cost overruns led to the issuance of another 250,000 shares in 1966 and there were problems in meeting repayment schedules. However, cash flow improved considerably in 1968 and the bank loan was paid off by April, 1969 and the income debentures were redeemed in full by July, 1970.

The next major corporate development occurred in late 1975 when Brascan Resources acquired 2,095,671 shares of Western Mines and subsequently increased its holdings to 50.3%.

Brascan Resources (formerly Mikas Oil Limited) was acquired by Brascan Limited in 1970 to administer its natural resource holdings. In 1972, Brascan Resources acquired Western Minerals Limited, (no relation to Western Mines) which contributed the base for the oil and gas assets.

In June, 1980, Western Mines acquired all the outstanding shares of Brascan Resources from Great Lakes Power Corp, both units of Brascan Limited of Toronto. The company issued one million $100 par value Class A preferred shares and 14,135,859 common shares to Great Lakes Power. As a result, Western Mines had 16,824,704 common shares outstanding, of which 84% were held by Brascan Limited through Great Lakes Power. Brascan Resources was liquidated with Western Mines remaining the surviving company.

At a special general meeting of shareholders in Vancouver on March 26, 1981, the corporate name was officially changed from Western Mines to Westmin Resources Limited. In addition, the outstanding shares were subdivided on a two-for-one basis. There were 33,822,288 common shares outstanding as of the 1982 year end. Another 3.6-million common shares were issued by way of private placement at $14 per share in March 1983.

In April, 1981, Westmin issued $100,000,000 of Class B Preferred shares consisting of 4,000,000 shares convertible into common shares at $14.749 per common share until May 1, 1988. *WM*

R R Walker
Exploration Manager, Vancouver Island

Ore deposits at the Myra Falls minesite

Westmin Resources Ltd is currently conducting mining and milling operations at their Myra Falls mine site located near the south end of Buttle Lake in the center of Vancouver Island. A 56 mile paved highway provides access from Campbell River.

The Myra Falls deposits occur as many individual ore bodies grouped into several major zones (figure 1). These ore zones are currently being mined underground from two mines — Lynx and Myra — at a rate of 930 short tons/day. These two mines have provided all production since start-up at the end of 1966. Production to the end of 1982 totalled 5,204,300 short tons which averaged 0.06 oz Au/ton, 3.32oz Ag/ton, 1.5% Cu, 1.1% Pb, 7.6% Zn.

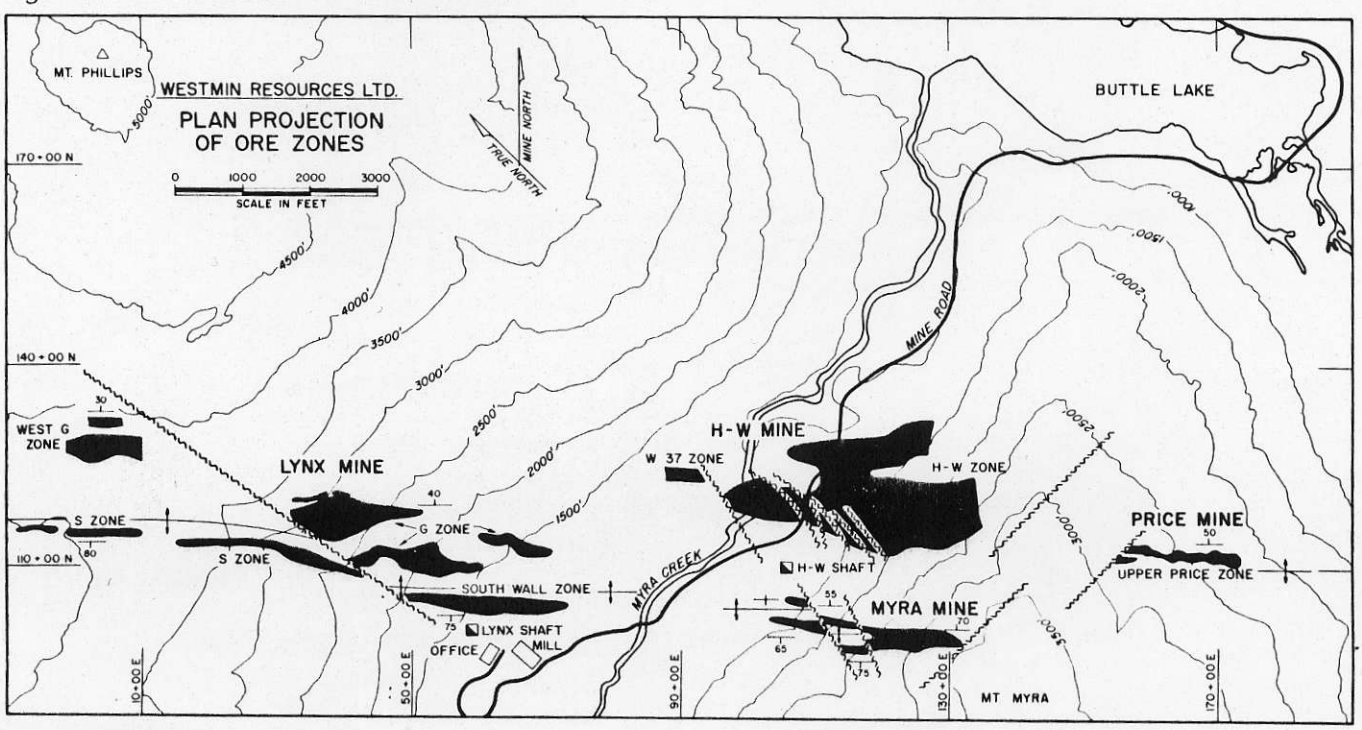
The Price zone, discovered in 1979, represents a modest but significant extension of reserves for the existing mining operations and has been subject to underground development and definition drilling. Proven mining reserves in Lynx, Myra and Price at the end of 1982 totalled 1,021,000 short tons averaging 0.06 oz Au/ton, 2.6oz Ag/ton, 1.0% Cu, 0.9% Pb, 7.4% Zn.

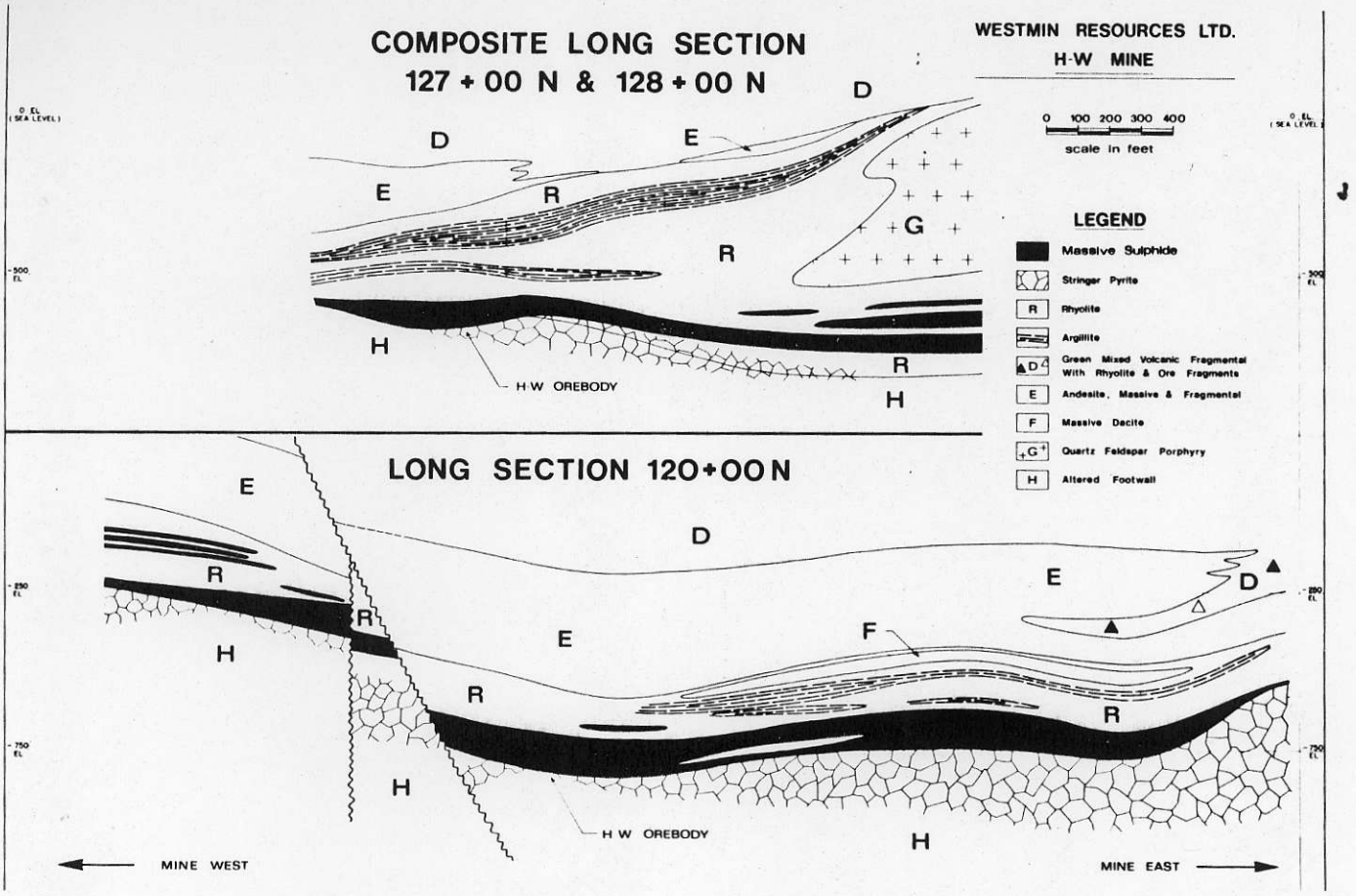
The H-W Mine represents a major new ore zone, which will substantially transform the mining operations at Myra Falls. Geological reserves in the H-W Mine total 15,232,000 short tons, probable plus possible, with a combined average grade of 0.07oz Au/ton, 1.1oz Ag/ton, 2.2% Cu, 0.3% Pb, 5.3% Zn. In conjunction with development of the H-W Mine, the company is engaged in expanding production to 3000 short tons/day. This expansion will include a new 2350ft shaft (nearly completed) as well as a new mill, mine offices, shop, surface tailings disposal system and hydroelectric power plant. H-W was also discovered in 1979.

GENERAL GEOLOGY

The Myra Falls ores are polymetallic, massive sulphide deposits associated with felsic volcanic rocks. The ore formed as sedimentary lenses on the sea floor, precipitated from metal bearing hot springs contemporaneous with the felsic volcanic host rocks. Hot spring activity produced widespread hydrothermal alteration of wallrocks, particularly below the ore lenses. Major centres of hydrothermal discharge are marked by zones of stringer and disseminated pyrite. For the most part, these pyrite stringer zones are not ore bearing. Hydrothermal alteration appears to be primarily

Myra Falls Mine orebodies

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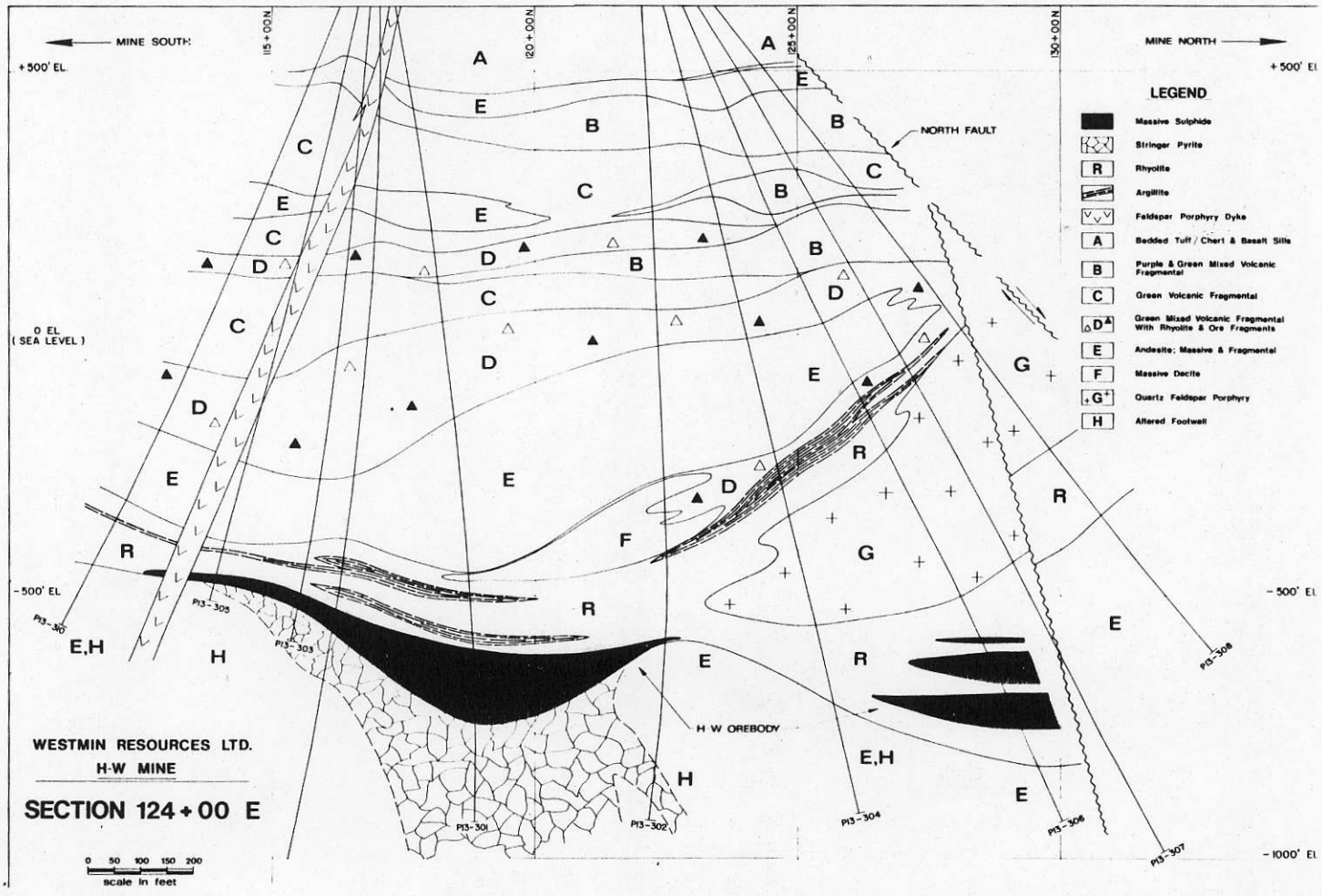
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B Purple & Green Mixed Volcanic Fragmental
C Green Volcanic Fragmental
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represented by sericitization, silicification and pyritization.

The major minerals comprising ore are pyrite, sphalerite, chalcopyrite, galena and barite which vary widely in their proportions. Minor minerals include tennantite, bornite and pyrrhotite. Ore textures are primarily fine grained and massive or banded.

Occurrences of rhyolite, sulphides and altered rocks are distributed vertically and laterally within a stratigraphic zone approximately 1200 to 1500 feet thick.

This mine sequence lies within the Myra Formation of the Paleozoic Sicker Group (Muller, 1980). The mine sequence is composed of massive volcanic and coarse to fine volcaniclastic rocks which include basalt, andesite, dacite and rhyolite as well as subordinate sedimentary rocks which include chert, carbonaceous argillite, sulphides and barite. Chert includes black, green, gray and red varieties. The mine sequence is internally bedded and is predominantly mafic and volcaniclastic. Lithologic units are laterally discontinuous with a distinct northwest trend parallel to the trend of ore zones.

The H-W orebody and associated ore lenses occur at the base of, and within, the H-W rhyolite unit which lies at the bottom of the mine sequence. The Lynx, Myra and Price ore zones are correlated as a single, elongate zone of rhyolite, ore and altered rocks which lies near the middle of the mine sequence. The Lynx-Myra-Price ore zones have been documented over a strike length of 19,000ft along the northwest trend. The H-W ore zone has been traced over 4500ft along a parallel trend located 2000ft northeast. In both cases, the plunge of ore lenses and broader zones is near horizontal.

The mine sequence has been folded and metamorphosed in the lower greenschist facies. Deformational rock fabrics are variably developed with the widespread occurence of schistose and lineated rocks. Schistosity is most intense in sericitic rhyolites and altered rocks. Schistosity strikes northwest and dips steeply northeast. Lineations, as well as fold hinges, trend northwest with flat to very shallow plunge.
Post-metamorphic faults of many attitudes offset the ore zones. Zones of gouge and broken ground are common along major faults and ore contacts.

LYNX-MYRA-PRICE

The rhyolitic ore horizon in Lynx, Myra and Price mines appears to be folded over a major anticline with ore lenses lying on both limbs. The hinge of this fold trends northwest with a flat plunge.

In Lynx mine the southwest limb dips generally 50 degrees southwest to 70 degrees northeast (overturned) but averages near vertical over an elevation range of more than 1500 feet. The north limb dips, on average, about 40 degrees northeast and has been traced over more than 1500 feet of dip length. Smaller scale folds and faults considerably complicate ore geometry on a stope scale.

The distribution of major ore zones in Lynx mine is illustrated in figure 1. The southwall zone and S zone lie in the steeply dipping, southwest limb of the anticline. G-zone orebodies lie in the moderately dipping northeast limb. The west G-zone was discovered in 1982 as the result of a major drifting and drilling program designed to test the northeast limb 3000ft northwest of the previously known G-zone. This new ore lens is currently known to extend over 1000ft of strike length and is open on both ends. It appears similar to currently mined G-zone orebodies.

The basic geometry of Lynx mine has led to extensive lateral and vertical development. Mining on the property began with an open pit at the southeast end of Lynx, where the ore structure was eroded through by Myra Valley producing the geographic separation of Lynx and Myra Mines. In total, 1.7-million tons of ore were taken from the Lynx pit. Underground development is by five adit levels and seven levels off an internal shaft which is 1125ft deep. Levels are tracked and spaced approximately 150 feet apart.

Myra Mine is a smaller, but higher grade, extension of Lynx, preserved where the ore zone extended into Mount Myra on the opposite side of Myra Valley. The dip length of the ore horizon diminishes towards the southeast and in Myra mine both limbs total about 1000ft. The rhyolitic host rock (sericite schist) appears compressed in the hinge of the anticline with a form varying from nearly isoclinal to asymetric. Again, ore bodies lie on both limbs. Myra mine is mainly trackless with three adit levels and two levels off a 2080ft, 14.8% ramp. Level spacing is 150ft. Production from Myra mine began in 1972.

The Price zone is an offset extension of the Myra zone. It was displaced from Myra by an inclined cross-fault with a 2800ft net slip. The vertical component of this displacement is about 1000ft with the Price block up. Initial exploration development of the Price zone has been by two adits with access by road up the east side of Mount Myra from the valley floor 1300ft below.

In the Lynx, Myra and Price mines, lateral development (8x8ft) totals 180,000ft, vertical development totals 72,000ft and underground diamond drill footage totals close to 1.2-million ft with an additional quarter million feet drilled from surface. Ore thickness is typically in the range of 5 to 15ft (maximum 40ft) and most production has been by cut and fill with a small amount of blast hole and room and pillar mining. Ore definition diamond drill hole spacing is generally 50x50ft on the plane of the ore.

H-W

The H-W deposit was discovered in December 1979, by surface drilling, at a depth of 1400ft below the floor of Myra Valley. Faced with declining reserves in the producing mines, a decision was made at the end of January 1980 to proceed with a new shaft.

Surface drilling of the deposit continued until mid 1981 and was then replaced by underground drilling from an exploration heading driven from the bottom level of Myra Mine as the deposit was followed under Mount Myra. Both the surface and underground holes ranged to depths of 2000ft or more in this initial exploration phase. Hole spacing began at about 250x100ft and was soon widened to 500x150 to 350ft. This first phase exploration was completed by the end of 1982. By mid 1982 a level had been driven from the new shaft to gain early access to ore for bulk sampling and to provide drill position for a second phase of drilling. This second phase drilling filled in a portion of the deposit at 100x100ft spacing to provide sufficient data for current mine planning of an initial production area.

The ores of the H-W mine occur principally within a single, large, thick body of very pyrite-rich, massive sulphide (figures 2 & 3).

The ore grade portion averages 70 weight percent pyrite and the remaining massive sulphide is base metal-poor, fine grained pyrite. In contrast the Lynx-Myra-Price ores average about 15 weight percent pyrite. The H-W massive sulphide body ranges in thickness from over 100ft in an axial zone to thin tapering margins. The average massive sulphide thickness is in the order of 60ft. The orebody exhibits strong lateral zoning from a very massive, pyrite core with high copper: zinc ratios, to zinc and barite-rich margins with low copper: zinc ratios. The marginal phase contains significant silver and lead in contrast to the core zone. Gold is fairly uniformly distributed. The relatively smaller tonnage, marginal ore phase represents higher grade ore.

Mechanized, trackless mining utilizing ramps between levels is planned for the H-W mine. Multiple stoping methods are anticipated.

REFERENCES

Muller, J E (1980) The Paleozoic Sicker Group of Vancouver Island, British Columbia; Geological Survey of Canada, Paper 79-30, 23-.

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Mining development at the Myra Falls site

In the midst of a $225-million expansion that will see new production from the H-W mine and a tripling of the mill rate to 3000 tons, the future for Westmin Resources' Vancouver Island mine has never looked brighter.

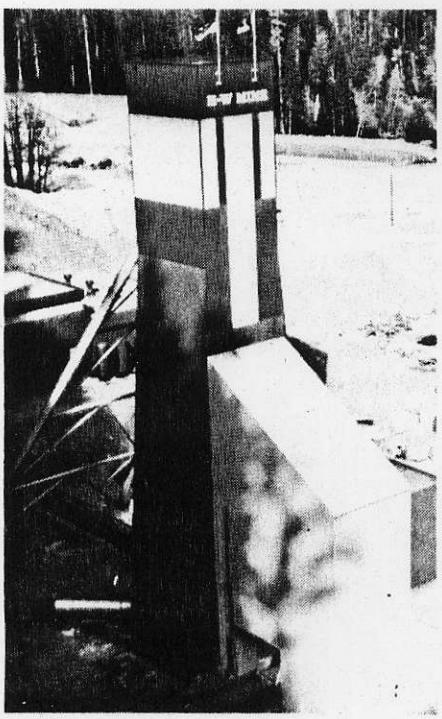
The polymetallic mine, located at the southern end of Buttle Lake, some 93km from Campbell River, was one of the few profitable Canadian mining operations in 1982.

Since discovery of the H-W orebody in 1979, the ore reserve picture has improved substantially; and recently a discovery of an extension to the original Lynx zone adds another sequel to what is already an exciting success story.

Stage II approval for the expansion was granted by the BC Government's Environment and Land Use Committee in March 1983.

The mine is already bustling with activity in preparation for a busy construction period this summer. As well as the H-W development, the project involves building a new 2700 tonne/day mill to replace the present 875-tonne mill; a new warehouse and office complex; a conveyor system from the H-W mine to the mill; a new tailings disposal and water management system and a small hydroelectric power plant. The ship and barge loading facilities at Tyee Spit in Campbell River will also be upgraded to handle the increased shipments.

The H-W headframe



Shaft sinking at the H-W mine was nearing completion at the time of *Western Miner's* visit to the property in mid-April.

The shaft will bottom out at 712m by the end of April. The next three months will be a changeover period when electrical installations, shaft equipment and conveyances will be put in place', General Manager Gordon Flumerfelt reports.

Level development and work on underground facilities, such as the crusher station and vent systems will then follow. Production from the H-W orebody is expected to commence during the fourth quarter of 1984.

'The mill design has been finalized and orders for most of the major equipment will be placed over the next few months', Mr Flumerfelt says.

'Construction contracts will be awarded shortly so that site preparation and construction of the surface buildings can begin early this summer', he adds. The mill and warehouse complex should be closed in by fall, with equipment installation following in 1984.

H-W MINE DEVELOPMENT

Expansion plans date back to 1980 when a decision was made to sink a shaft to tap the H-W orebody. (The deposit had been discovered a year earlier following an increased exploration effort spurred on by depleting ore reserves at the existing mines.

Work on collaring for the shaft and construction of the 46.6m high head-frame, hoistroom, compressor room and electrics room got under way in the latter half of 1980. MacIsaac Mining and Tunnelling Co was successful bidder for the shaft sinking contract.

As it became apparent that the H-W orebody would be able to sustain a production rate considerably greater than initially envisaged, the project was redesigned to its present 2700-tonne milling rate. Approximately $35-million had been spent on the project at the end of 1982.

There are two major types of ore in the H-W deposit, Mr Flumerfelt explains. One is a polymetallic ore similar to the Myra-Lynx orebodies (grading 2.4g/t gold, 109.7g/t silver, 1.5% copper, 1.5% lead and 9.6% zinc). The other is a blend ore, grading an average 2.06g/t gold, 17.1g/t silver, 2% copper, 0.1% lead and 3.5% zinc. (see article on H-W geology and engineering elsewhere in this issue.)

Mining will be mechanized, using rubber-tracked drilling jumbos and diesel-powered scooptrams. The blend ores vary in thickness from 15-40m and lend themselves to bulk mining using blast hole methods. For the polymetallic ores, a cut-and-fill mining method will be used, as well as a variation of the room-and-pillar method, Mr Flumerfelt reports.

The variable nature of the H-W deposit requires that a flexible approach be taken to the development planning for the ore-body, in order to achieve high levels of productivity and low operating costs. The mine plan was developed on the basis of utilizing mechanized production equipment that could move easily between the different mining areas along a series of declines and drifts. A number of stoping methods will be used in mining the ore, including cut-and-fill, room-and-pillar, retreat sublevel and blasthole. The application of each method will depend on ore grade distribution, ore geometry and ground conditions in the host rock, all of which vary throughout the deposit.

The initial area to be mined will be along the south and east fringes of the main zone between 21 and 24 Levels, where the major portion of the higher grade polymetallic ore is situated. In later years the north and west zones will be

developed as the main zone fringe areas are mined out.

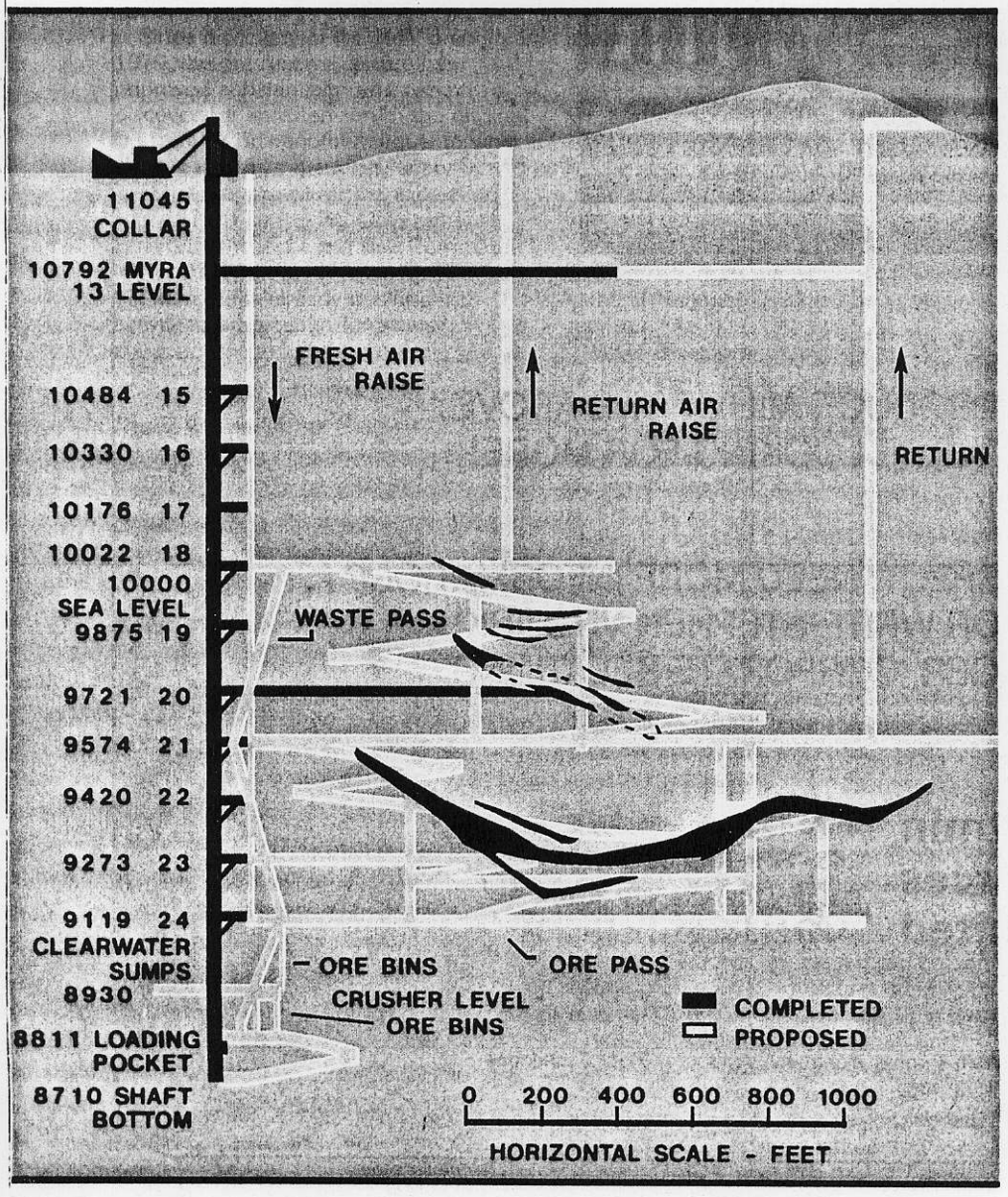
A tracked haulage system on 24 Level will gather the ore from stoping operations and move it to a coarse ore storage bin ahead of the primary crusher. The crushed ore will be delivered via a conveyor on 26 Level to skip loading facilities at the shaft, and then hoisted automatically to surface.

(The hoist was purchased from Asea Ltd. The compressor room houses three 2200cfm Atlas Copco ER8 compressors.)

Waste removal will be by truck, while the ore will be conveyed to the new mill via a 1066mm wide enclosed conveyor. The overhead conveyor system will be 1.4km long.

H-W in-place reserves at 1 Jan'83 stood at 15,232,000 tons grading 0.07 oz/ton gold, 1.1 oz/ton silver, 2.2% copper, 0.3% lead and 5.3% zinc. And it is expected that this in-place reserve figure will go even higher as the deposit is still open in three directions.

H-W Mine Cross-section



EXISTING MINES

An estimated 1,021,400 tons grading 0.06 oz/ton gold, 2.6 oz/ton silver, 1% copper, 0.9% lead and 7.4% zinc were reported for the Lynx, Myra and Price mines at the same date, although this figure has been increased since then by a recent discovery of an extension to the Lynx mine orebody.

Although the size and grade of this new orebody has not yet been determined, Mr Flumerfelt admits it 'is pretty exciting'.

'The new zone appears to have been moved 365-460m west of the Lynx orebody by geological faulting', he explains.

'Drilling has now been aimed at six sections over a strike length of 240-275m and Lynx ore grade material has been intersected in each section. The deposit is open to the east and west and drifting to the east is underway to allow for further drilling', he reports.

The Lynx discovery means plans to bring the Price mine on-stream may be put on the backburner. The Price is mineable, but has not yet been developed to production. And, with an extensive drilling and drifting program planned for the Lynx zone extension this year, future development work for the Price mine has been deferred for 1983.

NEW CONCENTRATOR

Following extensive laboratory and pilot testing of H-W blend and polymetallic ores, a two-product copper-zinc concentrator, capable of also producing lead concentrate (as the mill feed lead grade permits), was selected as the most flexible design option with regard to both overall mine production rate and the proportions of blend and polymetallic ore mined and milled.

The 2700t/d concentrator is designed in two parallel 1350t/d lines, capable of processing blend and polymetallic or any combination of blend and polymetallic ores from the H-W and Myra-Lynx mines.

H-W ore, crushed underground, is delivered to the secondary crushing plant via a 1.4-kilometre long overland conveyor to a 3600-tonne coarse ore bin, and then further reduced by secondary and tertiary crushing. The product is conveyed to two 3600-tonne silos for fine ore storage. Provision is made to convey Myra-Lynx ore, crushed in the existing crushing plant, directly to these fine ore storage bins. The fine ore is further reduced in size in two parallel rod mill-ball mill grinding circuits. Each grinding circuit is capable of processing blend, polymetallic or any combination of these ores.

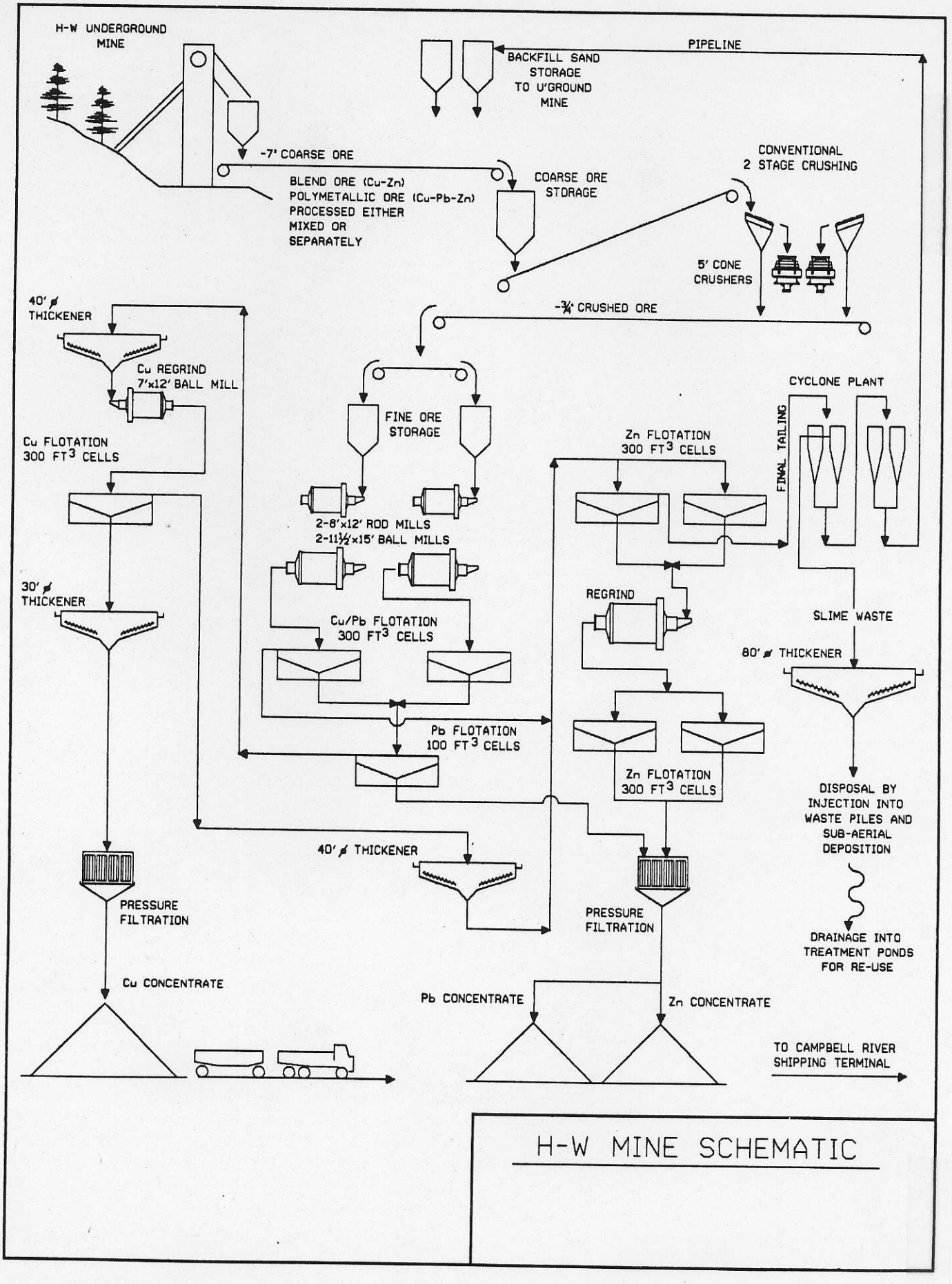
The classified ground ore is processed initially in two parallel flotation circuits. Each circuit is capable of producing a copper, lead and zinc concentrate as ore grade demands. The rougher concentrates from each of the parallel circuits are combined for cleaning and production of final concentrates. Concentrate dewatering to 6% moisture is by pressure filtration, eliminating the need for vacuum disc filters and oil- or gas-fired rotary dryers.

Sufficient concentrate storage capacity is provided to accommodate 3 days production. The on-site storage is intended solely to provide surge capacity in the transportation system.

A separate tailings cyclone plant and cyclone overflow thickener are located to the east of the existing Myra-Lynx concentrator. This plant receives the tailings via a gravity pipeline and produces deslimed sand for use as mine backfill. The thickened cyclone overflow is pumped to the tailings disposal area for impoundment.

Major changes include greater automation in the mill design. A process control computer will be installed and a new assay office is currently under construction.

The new circuit will feature the use of thickeners before filtering and pressure



H-W MINE SCHEMATIC

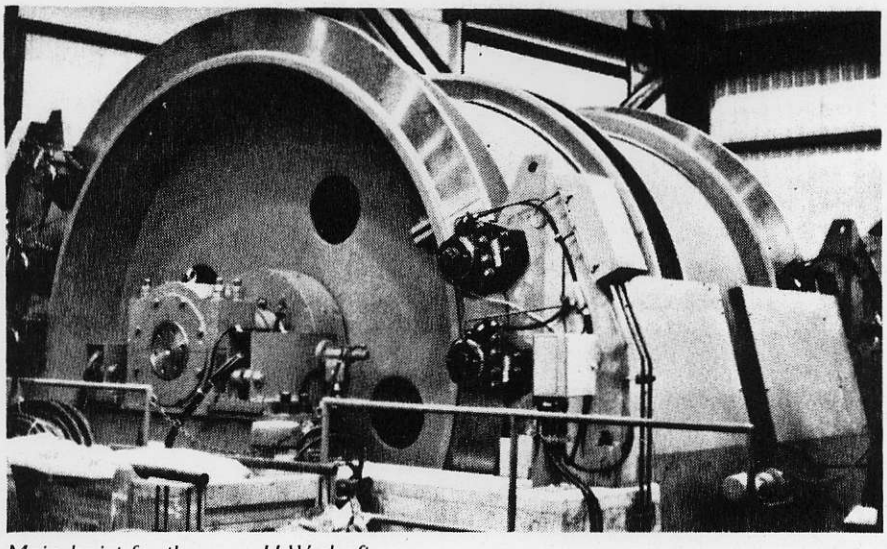
filters rather the present vacuum filler drying system will be used, Charlie Cuzzocrea, general mill foreman explains.

The existing mill will operate throughout the construction period, processing ore from the Lynx and Myra mines. The mill employs three-stage crushing, two-stage grinding and differential flotation to produce separate copper, lead and zinc concentrates. Payable values of silver and gold are contained in all three concentrates, and payable cadmium is contained in the zinc concentrate. In 1982 production amounted to 20,000oz of gold, 959,000oz silver, 5.3-million lb of copper, 4.8-million lb of lead, 33.5-million lb zinc and 35.000lb cadmium.

Once the new concentrator is on-stream, the old one will probably be pulled down, leaving only the crusher plant standing. Ore from the H-W will be crushed underground, while Lynx and Myra ores will continue to be transported to the surface crusher before going to the mill, Mr Cuzzocrea reports.

Water for existing plant operations is obtained from underground water, internal recycle, Watertank Creek and the hydroelectric power plant tail race. Water for the new mill will come from these same sources and, if possible, by recycling supernatant from the water treatment systems.

Power is currently supplied from a hydroelectric plant on Tennent Creek, supplemented by eight diesel electric generating units on-site. The existing operation needs an average 2.17MW and peak loads reach 4.8MW. The new facilities will require an additional 10MW of power and Westmin plans building another hydro plant on Thelwood Creek, which will provide approximately 3000kWh. A 5-mile road will be built into the Thelwood Valley.



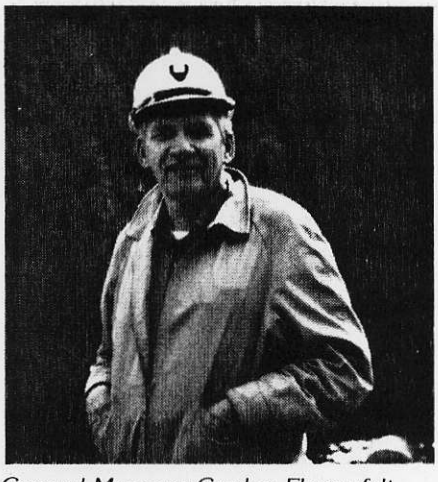
Main hoist for the new H-W shaft

TAILINGS SYSTEM

Another part of Westmin's expansion program will be construction of an on-land tailings disposal system to eliminate the discharge of tailings into Buttle Lake. Tailings from the new mill will originate as zinc circuit tails and will be cycloned in a sizing plant for recovery of mine backfill.

The new on-land tailings storage facility will employ a method known as the sub-aerial technique, which is different from the conventional method of sub-aqueous deposition, in which tailings are deposited under water in a tailings pond.

In the sub-aerial technique, the tailings slurry is discharged through spray bars onto the high end of a gently sloping beach; the slurry then flows down the beach, forming a uniform layer typically about 100mm thick. Once a section of beach has been covered, the discharge is moved to another section, and the newly deposited layer is left to settle, drain, bleed and air dry, before being covered with a subsequent layer. Partial removal of the liquid contained in the tailings through these processes causes negative or suction pore pressures to develop in the tailings mass, which result in the retention of the remaining moisture in the material, thus preventing any seepage.

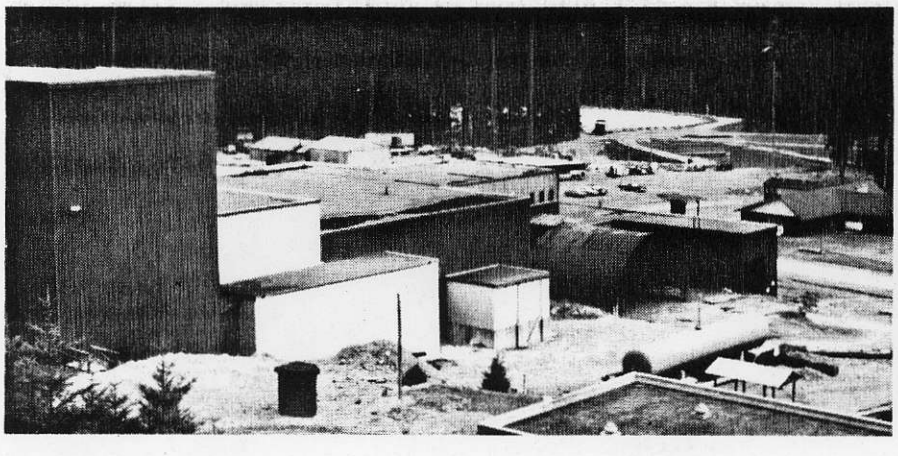


General Manager Gordon Flumerfelt

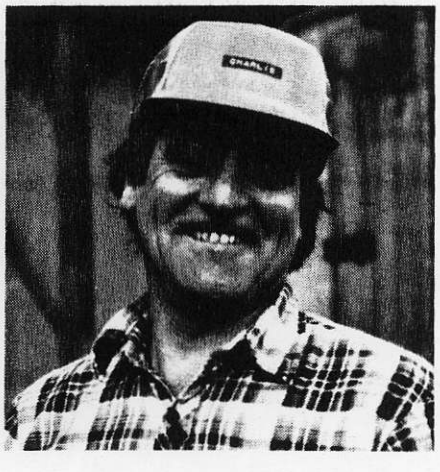
A comprehensive water management plan has also been devised to ensure that all surface and subsurface waters affected by mining operations will be treated to within acceptable limits before release into the environment.

Leachate from the former Lynx open pit high pyrite waste rock dumps has

Westmin's new mill will be built adjacent to the existing one. Crusher plant is to the left



Charlie Cuzzocrea, general mill foreman



Westmin's bus fleet waits in line. Most of the employees live in Campbell River and are bussed to and from the minesite

recently been implicated in the contamination of Myra Creek. Down-pit run-off and groundwaters passing through and under the waste dumps transported these leachates to Myra Creek. In July and August of 1982 a surface and subsurface water collection system was installed between the waste rock dumps and Myra Creek to intercept these flows. This system of under-drainage will also service the tailings disposal system.

Being located inside Strathcona provincial park, Westmin has paid particular attention to its environmental and reclamation programs. Included in the Stage II program is a committment that requires the company to provide $500,000 to fisheries enhancement projects and $500,000 for improving Strathcona park access and recreational facilities.

SHIPPING FACILITIES

Existing ship and barge loading facilities at Tyee Spit in Campbell River will be upgraded to handle 35,000 DWT ships. (Product is shipped in 20,000 DWT ships at present.)

Storage capacity will be tripled to 38,000 tons and a new wharf, located a further 50km offshore from the existing wharf, as well as a new shiploader will be required.

Westmin's products are sold world-wide. At present, zinc concentrate is sent to Cominco's smelter at Trail, while lead concentrates go to Asarco in Montana and copper concentrates are shipped to Japan.

NEW JOBS

Some 110 new jobs will be created by the expansion, adding to the 360 currently employed at the mine. Mr Flumerfelt estimates that during peak construction, some 540 workers will be on the site. Most of Westmin's employees live in Campbell River. The 227 underground workers are transported daily to and from the mine in four company buses. The miners work two 8 hour shifts/day. The 31 people working in the mill live on the site four days on/four days off; the mill operates 24 hours/day. It is estimated that 70% of the new jobs will be filled locally. Some 200 indirect jobs will also be created by the expansion. **WM**

Project development for Westmin Resources H-W Mine was carried out under W Peter Stokes PEng. There was a project management group in Vancouver, and underground and surface mining teams at the mine site. Detailed engineering was provided by various consultants, and most of the surface work was done by Wright Engineers Ltd.