

H-W Project

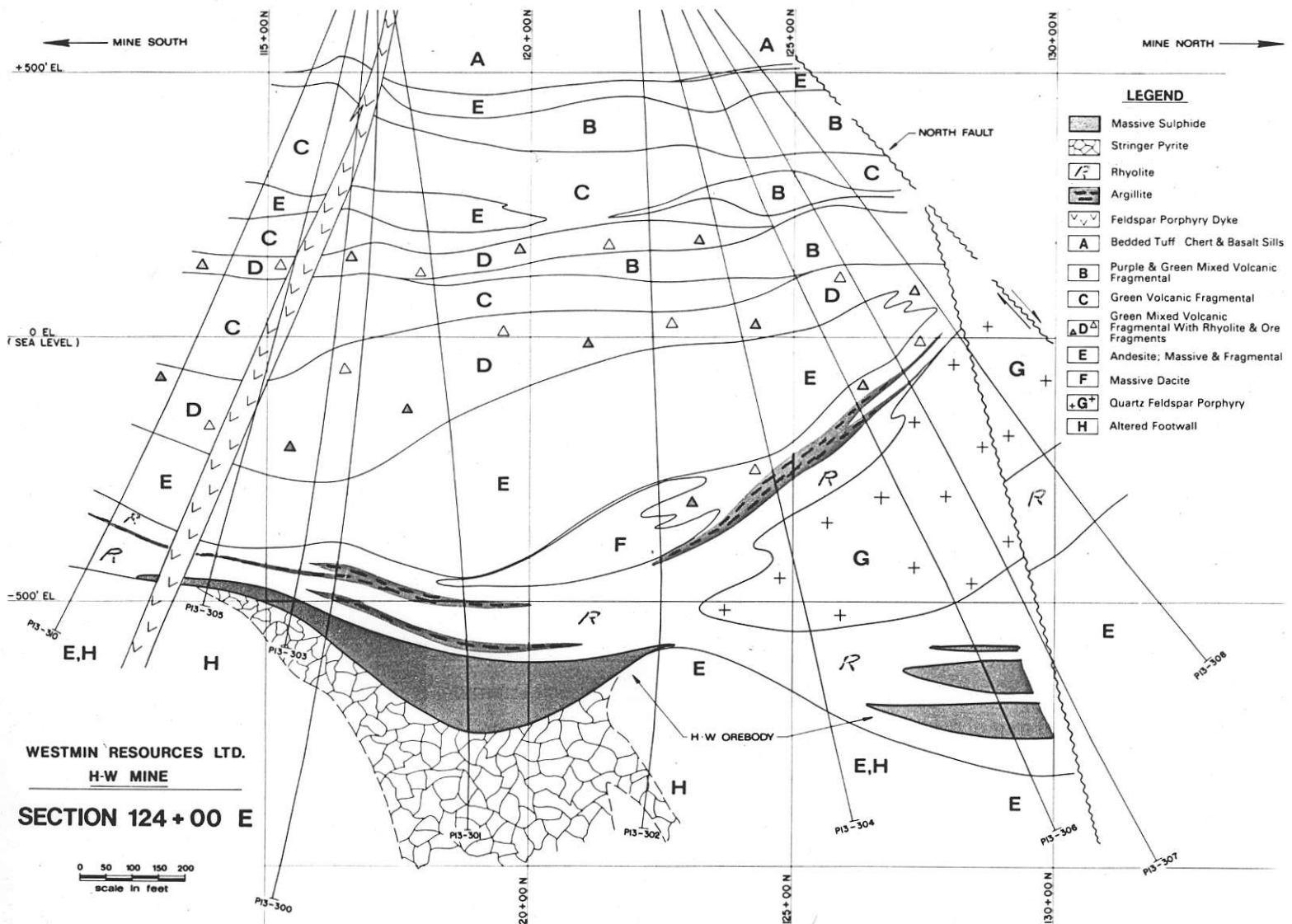
During 1981 Westmin assembled the H-W Project group to plan and supervise the shaft development program; prepare initial engineering designs and studies and carry out environmental programs in the Myra Falls area.

British Columbia Metal Mines Guideline Regulations require two main reports prior to the issuing of permits for new mines or major expansions to existing operations. The

Stage I Report required by these regulations was submitted to government at year-end and the Stage II Report, which leads to approval in principle of the expansion, is scheduled for completion by mid-year. As a result of this schedule, it is hoped that major construction can be commenced late in 1982 or early 1983.

Shaft and ancillary development progressed satisfactorily during the past year. It was decided to suspend shaft sinking at 1,370 feet to facilitate the early development of a level at that elevation. The objective of

this lateral development program is to permit detailed drilling of the orebody and to carry out rock mechanics studies, both of which are required for mine planning purposes. Bulk samples of the various ore types will also be obtained for pilot mill evaluation, which is required to permit concentrator design programs to be completed. It is expected that this project and the completion of the shaft to the 2,500 ft. target depth, will be accomplished by year-end.



H-W Project development completed during 1981 included:

Shaft Advance (ft.)	1,370
Station Excavation (cu. ft.)	34,010
Lateral Development (ft.)	406

When fully operational in 1984, the H-W together with the Lynx,

Price and Myra mines, will support a mill rate of 3,000 tons per day, three times current capacity.

ENVIRONMENT

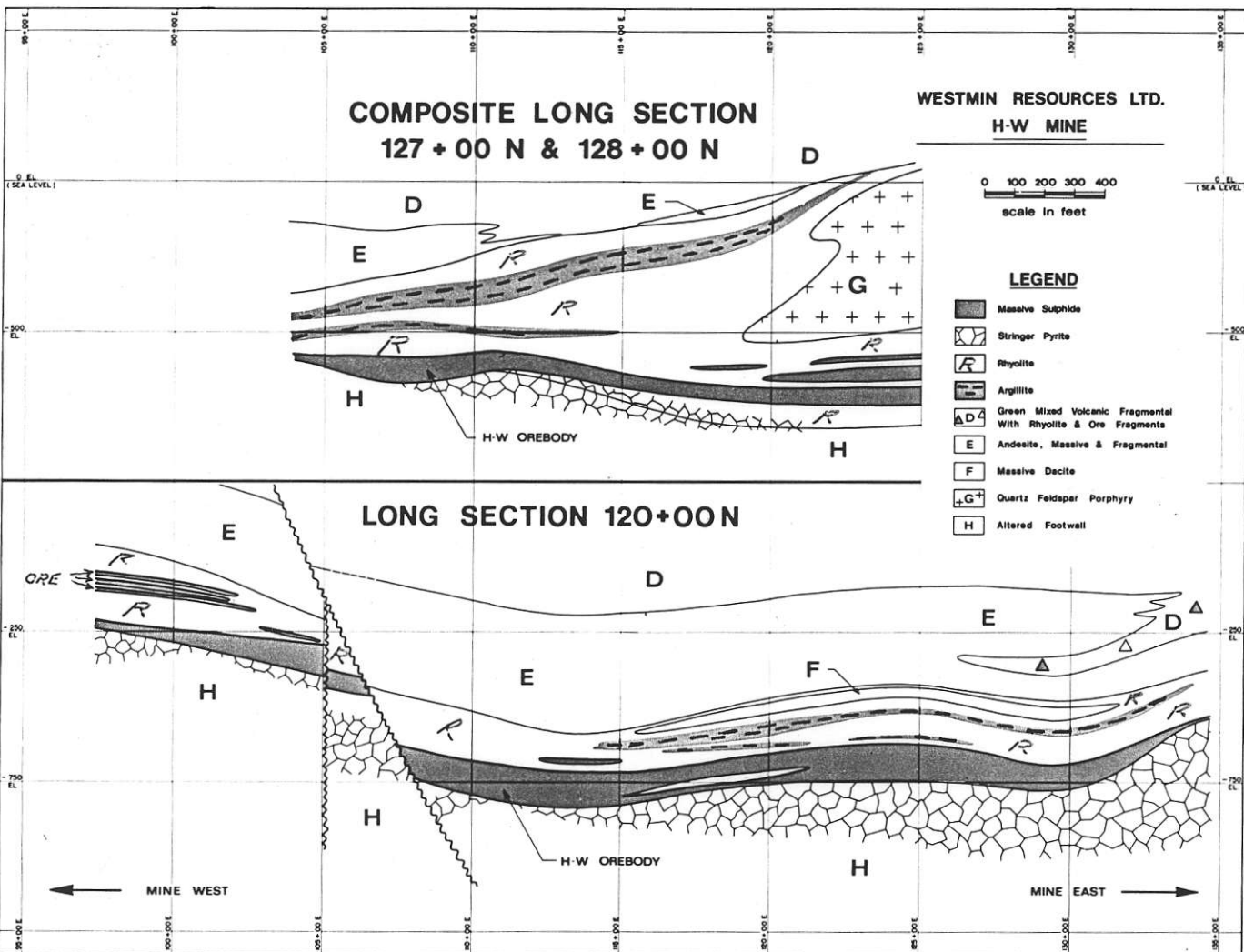
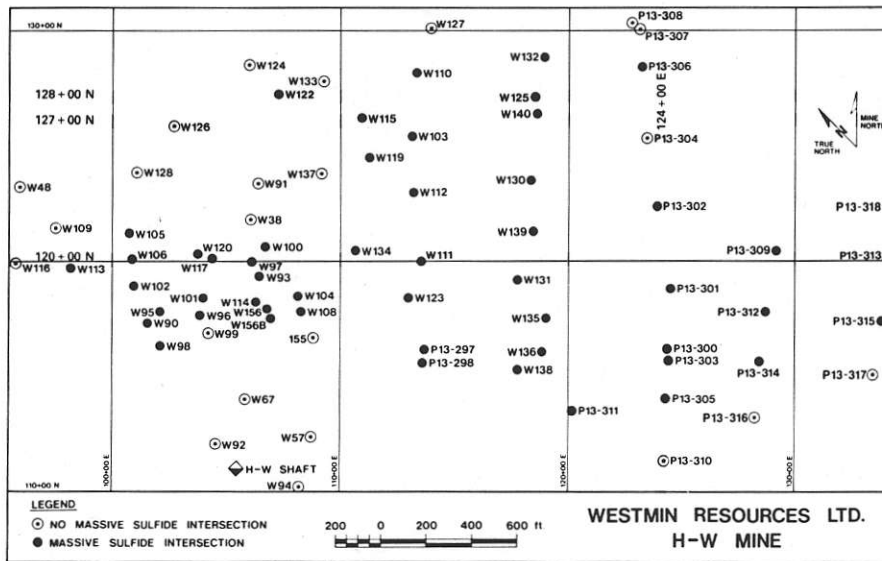
A study group was set up by Westmin in the second quarter of

1981 consisting of a Company representative, independent experts and provincial and federal government officials to investigate the environmental aspects of drainages associated with the mining operations.

Phase I of the study has already isolated an area of Myra Creek as being a possible source of the dissolved metals discovered in Buttle Lake. The second phase of this study is currently verifying this initial information and investigating methods of controlling the problem.

Westmin has already completed a perimeter ditch around its property to control the flow of run-off water. Substantial improvements have been made to the Lynx settlement pond system and effluent treatment methods ensuring that the system meets the new stringent permit conditions.

Concurrent with this work, Westmin has been investigating alternate methods of tailings disposal and initial test-work has included rudimentary surface deposition to provide data for preliminary design.



Operations

Production

Westmin continued to produce ore from the Lynx and Myra mines during 1980 in roughly the same proportions as in 1979. The 4% increase in ore milled in 1980, over that in 1979, did not completely offset the lower mill head grades and consequent drops in mill recovery. Concentrate production was down some 8% from 1979 levels.

Mining Division

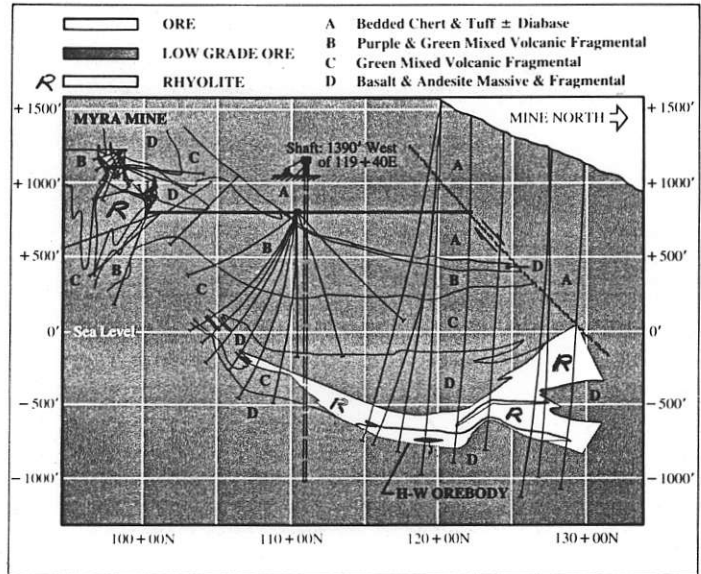
Payable Metal (000's)

Gold (oz)	19	20
Silver (oz)	786	791
Copper (lbs)	5,941	6,296
Lead (lbs)	5,125	5,425
Zinc (lbs)	33,656	36,509
Cadmium (lbs)	64	72

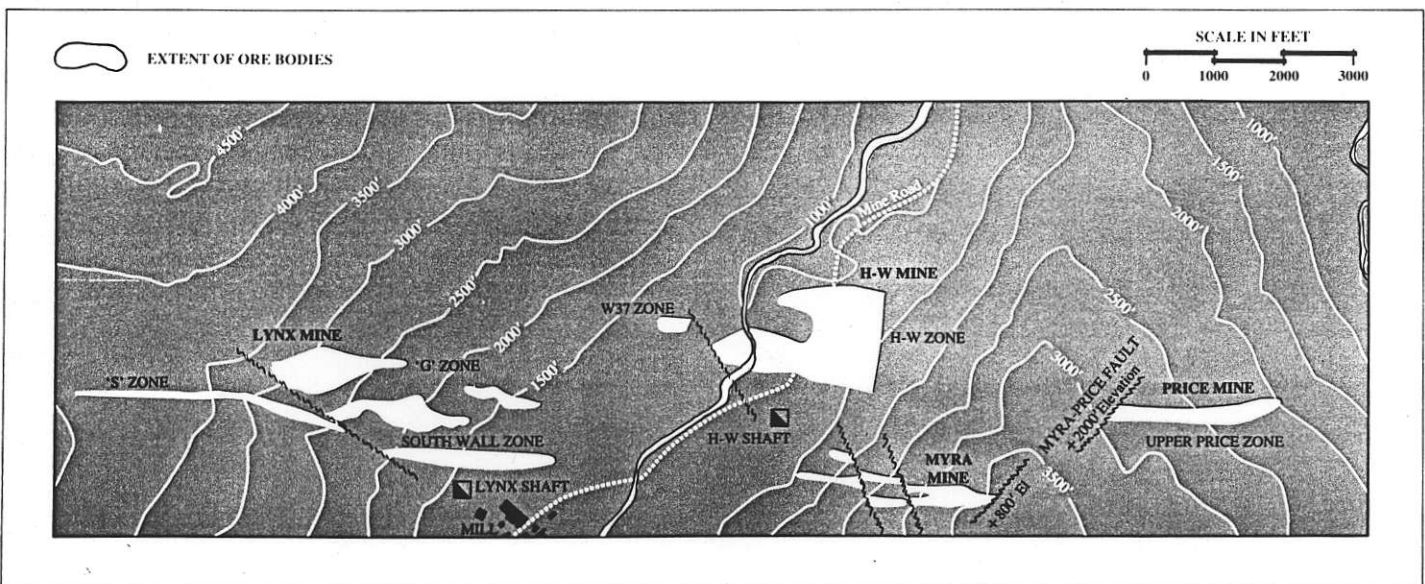
Summary of Production Statistics

	1980	1979
Ore Production (tons)	306,712	294,181
Average daily ore production (tpd)	965	937
Source of ore (%): Lynx	70	68
Myra	30	32
Head Grades		
Gold (oz/t)	.08	.09
Silver (oz/t)	3.62	3.82
Copper (%)	1.22	1.32
Lead (%)	1.23	1.37
Zinc (%)	7.58	8.45
Mill Recovery (%)		
Copper	81.4	82.8
Lead	80.9	79.8
Zinc	82.5	84.3
Concentrate Production (tons)		
Copper	11,238	11,525
Lead	7,266	7,462
Zinc	35,790	40,307

Myra and H-W Mines Composite Section 119 + 40E to 124 + 00E



Surface Plan Lynx-Myra-H-W-Price Mines



Production

Ore production from the Lynx and Myra mines on Vancouver Island declined by 11.5% in 1981, primarily due to a three-week strike which disrupted normal operations for about a month.

The Lynx mine produced 66% of the ore mined, while Myra produced the remainder. Exploration and development of the Price orebody continued and a decision concerning production from this zone is expected during 1982.

The October strike also reduced mill throughput. Mill head grades and metal recoveries were slightly lower during 1981 in almost all categories.

Summary of Production Statistics

		1981	1980
Ore Production (tons)		271,334	306,712
Average daily ore production (tons)		926	965
Source of ore (%):	Lynx	66	70
	Myra	34	30
Head Grades	Gold (oz/ton)	0.08	0.08
	Silver (oz/ton)	3.71	3.62
	Copper (% Cu)	1.13	1.22
	Lead (% Pb)	1.22	1.23
	Zinc (% Zn)	7.35	7.58
Mill Recovery (%)	Copper	79.8	81.4
	Lead	77.6	80.9
	Zinc	83.0	82.5
Concentrate Production (tons)	Copper	8,949	11,238
	Lead	6,013	7,266
	Zinc	31,018	35,790

Development

Development programs continued throughout 1981 on the Lynx, Myra and Price mines but here again, advances and drilling were adversely affected by the October work stoppage.

	1981	1980
Horizontal advance (ft)	10,706	11,955*
Vertical advance (ft)	4,361	4,087*
Surface Diamond Drilling (ft)	32,610	93,923
Underground Diamond Drilling (ft)	95,211	93,470*

* This change was made to include Price advance in the 1980 data.

Payable Metals (000's)

	1981	1980
Gold (oz)	17	19
Silver (oz)	783	786
Copper (lb)	4,824	5,941
Lead (lb)	4,305	5,125
Zinc (lb)	29,212	33,656
Cadmium (lb)	30	64

MARKETING

The Company continued to market its concentrates to customers in North America and Japan and it is expected that this arrangement will remain in effect through 1982.

During the year, prices for both base metals and precious metals continued to deteriorate. The outlook for 1982 is not encouraging, but as metal stocks are not excessive, prices could increase substantially with an increase in demand. It is therefore possible for some improvement to occur during the second half of the year.

The Company continued its policy of selling forward part of its production and this policy was instrumental in mitigating the effect of falling prices during 1981.

Mining Division

1981 ANNUAL REPORT
WESTMIN RESOURCES

Operations

Ore Reserves

Continuing surface and underground diamond drilling on the new H-W orebody increased drill-indicated and possible reserves by 61% during 1981. As the mineralized area has not yet been blocked out by underground development, these reserves cannot be classified as proven. However, there is great potential to further expand reserves, since the orebody is still open in three directions.

H-W reserves at the end of 1981, as estimated by an independent consultant, stood at:

Classification	Tons	Grade				
		Gold	Silver	Copper	Lead	Zinc
		oz/ton	oz/ton	% Cu	% Pb	% Zn
Drill Indicated	7,230,700	0.07	1.1	2.0	0.4	5.3
Possible	5,712,600	0.07	0.9	2.4	0.3	4.8
Total	12,943,300	0.07	1.0	2.2	0.4	5.1

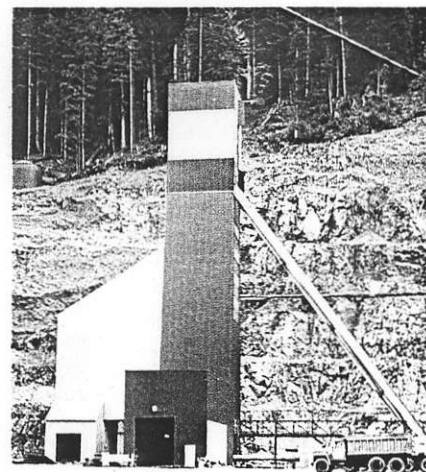
This reserve is based on a \$30 per ton net smelter return cut-off.

There was a net decrease of 34,200 tons in proven reserves at the Lynx and Myra mines with 237,100 tons added, while 271,334 tons were mined. An update of the Price reserves will be made after completion of further underground exploration scheduled for the first half of this year. Upon completion of this program, it will be possible to prepare a mining plan for this zone.

	Proven Reserves (tons)	Grade				
		Gold	Silver	Copper	Lead	Zinc
		oz/ton	oz/ton	% Cu	% Pb	% Zn
Lynx Mine	752,900	0.06	2.2	1.1	0.9	8.2
Myra Mine	201,900	0.08	5.7	0.7	1.3	5.9
Price Mine	102,800	0.03	1.2	1.1	1.0	9.4
Total	1,057,600	0.06	2.8	1.0	1.0	7.9

By comparison, total proven ore reserves as of January 1, 1981 were:

	1,091,800	0.07	3.3	1.1	1.0	7.7
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The new H-W headframe over the shaft which is down to 1,370 feet. Lateral work, more diamond drilling and bulk sampling will precede sinking to 2,500 ft. target depth.



Truck dumping ore from Myra mine into storage and crushing area to begin the milling process.



BULLETIN

April 1982

MONITORING COMMITTEE FINDINGS

The Monitoring Committee Phase II program, which was designed to identify the sources of heavy metals in Myra Creek and Buttle Lake is continuing. The preliminary findings indicate that about 90% of the heavy metals entering Myra Creek originate with the leaching of exposed rock in the Lynx open pit and waste rock dump area. The dissolved metals find their way to Myra Creek as surface and groundwater runoff.

The preliminary findings have been released in an interim report. A copy of the report can be obtained from Campbell River Library.

NEW WASTE TREATMENT SYSTEM

A system for intercepting and treating all contaminated surface and groundwater flows is now being designed. This system will involve the installation of an underground piping system parallel to Myra Creek, from a point near the bridge crossing to the end of the diversion channel. It has been designed to collect the groundwater flows coming from the waste dumps before they reach Myra Creek. The collected waters will then be combined with the water flowing from the Lynx open pit and treated to reduce heavy metal content.

To make sure that this proposed system for intercepting the groundwater above Myra Creek will work, a 200 foot demonstration section has been installed. Early tests are encouraging.

This proposed system for treating the intercepted water is patterned after the existing Lynx settling ponds which have proven to be highly successful. Monitoring results indicated a ten-fold decrease in the heavy metal content of the outflow from the Lynx settling ponds after the treatment system was installed.

ALTERNATIVE TAILINGS DISPOSAL METHOD

Although the Phase I Monitoring Committee report suggests that the tailings which have been deposited in Buttle Lake do not significantly contribute to the heavy metal loadings in the lake, an alternative on-land method of tailings disposal is being investigated. A pilot study is now being carried out on a section of the emergency tailings impoundment at the Myra Falls site. In addition, the geological character of the present waste dump area is being examined to determine if it is suitable for the disposal of present mine tailings as well as additional tailings resulting from a possible increase in mill production.

Studies are also underway to determine the effect of tailings in the lake. These studies deal with, for example, water circulation patterns in the lake and chemical profiles at different lake levels.

THE EXPANSION PROPOSAL

In addition to the environmental studies that are being carried out to resolve the existing environmental problems stemming from former mining activities, Westmin's Engineering Division is in the process of assembling the Environmental and Socio-Economic Impact Statement for expansion of the present operation from 1,000 tons per day to 3,000 tons per day.

The report, detailing Stage II studies, is to be submitted to the Provincial Government in support of the application to expand production. The Impact Statement deals with all facets of the existing environment, potential environmental impacts and details of engineering and waste management required to ensure that the environment will be protected.

Studies now being carried out include: groundwater, fisheries, water quality, reclamation, surface water, wildlife, geology, lake characteristics, air quality, vegetation and archaeology.

PUBLIC INFORMATION AND PARTICIPATION PROGRAM

A Public Open House was held at the Discovery Masonic Hall in Campbell River on

March 11, from 2:00 p.m. until 9:00 p.m. Approximately 70 residents of the Campbell River area attended the open house with most people staying about 1-1/2 hours. A display summarizing the results of the Stage I Report was set up and representatives from Westmin were available to answer questions.

PLANNING WORKSHOP

Representatives from nine Campbell River community groups attended a Planning Workshop held on March 20 at Painter's Lodge. The purpose of the Workshop was to allow leaders of interest groups to obtain further information about the proposed expansion and contribute their comments and suggestions for the next phase.

MINE TOURS

A number of activities and events have been planned for the next several months as part of the continuing public information and participation program. These include a mine tour on June 5. Interest in the tours amongst residents of Campbell River has been high so tours may be repeated on following weekends as needed.

OPEN HOUSE

A second open house is presently scheduled in June to present the findings of the Stage II studies and to obtain feedback from local residents regarding the details of the expansion proposal.

MALL DISPLAY

A display will be held in the Ironwood Mall from May 3 - 8. Colleen Nilssen, Westmin's Public Information Representative in Campbell River, will be on hand to obtain comments and suggestions from interested residents.

H-W MINE DEVELOPMENT

Shaft - The sinking of the shaft was temporarily halted last December, so that ore definition drilling and bulk sampling could be carried out. It is expected that sinking will re-commence about mid-May and be completed by the end of the year. Diamond drilling will begin shortly on 20 level and continue for 4 or 5 months.

The 150" double drum is to be delivered in May, 1982 and installation will commence towards the end of May.

Pilot Plant - The bulk ore samples obtained from 20 level development are to be processed through a 25 ton per day pilot plant which is to be constructed in the present mill building. This will provide more detailed metallurgical information for mill design purposes and for planning of the ore handling facilities in the mine.

Construction of the pilot plant is to proceed in May and will operate during the summer months.